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RICHMOND, VA., APRIL 12, 1901.

\$2.00 a Year.
10 Cents a Copy.ONE HUNDRED AND TWENTY-FIVE CONSECUTIVE "ABDOMINAL OPERATIONS"
Occurring in My Service with Dr. George Ben. Johnston, with Remarks.

By CHARLES R. ROBINS, M. D., Richmond, Va.,

In-structor in Gyneecology and Abdominal Surgery and Visiting Obstetrician, Medical College of Virginia.

No.	DATE.	AGE.	DIAGNOSIS.	OPERATION.	RESULT.
1	Mar. 30, 1899	50	Carcinoma of uterus, hydrosalpinx.	Total hysterectomy.	Recovery.
2	Mar. 30, 1899	55	Movable kidney.	Nephrorrhaphy.	Recovery.
3	Apr. 1, 1899	28	Ovarian cyst, right side with twisted pedicle.	Removal of cyst.	Recovery.
4	Apr. 3, 1899	20	Multilocular ovarian cyst, right ovary, adhesions.	Removal of cyst.	Recovery.
5	Apr. 3, 1899	32	Suppurating appendicitis.	Incision and drainage.	Recovery.
6	Apr. 5, 1899	31	Chronic appendicitis with dense adhesions.	Removal of appendix with drainage.	Recovery.
7	Apr. 6, 1899	27	Chronic appendicitis.	Removal of appendix.	Recovery.
8	Apr. 6, 1899	45	Cystic degeneration right ovary, hydrosalpinx. Retro-displacement of uterus.	Removal of tube and ovary, ventro suspension.	Recovery.
9	Apr. 8, 1899	38	Retro displacement of uterus with adhesions. Hæmatomata of both ovaries.	Removal both tubes and ovaries. Ventro-suspension. Removal of appendix.	Recovery.
10	Apr. 11, 1899	55	Carcinoma of uterus. Submucous fibroid.	Vaginal hysterectomy.	Recovery.
11	Apr. 13, 1899	8	Inguinal hernia.	Bassini operation.	Recovery.
12	Apr. 14, 1899	52	Chronic appendicitis	Removal of appendix.	Recovery.
13	Apr. 21, 1899	28	Fibro-myomata of both ovaries.	Removal of both ovaries.	Recovery.
14	Apr. 29, 1899	36	Chronic appendicitis.	Removal of appendix.	Recovery.
15	May 1, 1899	33	Ventral hernia.	Operation for radical cure.	Recovery.
16	May 2, 1899	39	Movable kidney.	Nephrorrhaphy.	Recovery.
17	May 4, 1899	20	Chronic appendicitis.	Removal of appendix.	Recovery.
18	May 4, 1899	40	Multiple fibroid of uterus.	Total hysterectomy.	Died.
19	May 8, 1899	45	Retro-displacement of uterus. Chronic appendicitis.	Ventro suspension. Removal of appendix.	Recovery.
20	May 10, 1899	37	Chronic appendicitis.	Removal of appendix.	Recovery.
21	May 11, 1899	34	Fibroid of uterus. Chronic appendicitis.	Supra-vaginal hysterectomy. Removal of appendix.	Recovery.
22	May 12, 1899	21	Chronic appendicitis.	Removal of appendix.	Recovery.
23	May 18, 1899	25	Chronic appendicitis.	Removal of appendix.	Recovery.
24	May 23, 1899	17	Chronic appendicitis.	Removal of appendix.	Recovery.
25	May 23, 1899	28	Extra-uterine pregnancy, ruptured, dense adhesions. Chronic salpingitis.	Removal of both tubes and ovaries.	Recovery.
26	May 25, 1899	31	Chronic appendicitis.	Removal of appendix.	Recovery.
27	May 26, 1899	41	Fibroid of uterus. Double pyo-salpinx.	Total hysterectomy.	Recovery.
28	June 21, 1899	35	Extra uterine pregnancy, not ruptured.	Removal of tube and ovary and appendix.	Recovery.
29	June 26, 1899	22	Renal calculus.	Nephro-lithotomy.	Recovery.
30	June 27, 1899	21	Sclerosis of right ovary and hydrosalpinx.	Removal of the right tube, ovary and appendix.	Recovery.
31	June 27, 1899	43	Strangulated femoral hernia.	Operation for radical cure.	Recovery.
32	July 3, 1899	19	Suppurating appendicitis.	Incision and drainage.	Recovery.
33	July 10, 1899	48	Abscess of liver.	Incision and drainage.	Died.
34	July 11, 1899	29	Inflammatory stricture ascending colon with dense adhesions.	Release of adhesions. Resection of colon.	Recovery
35	July 12, 1899	68	Carcinoma of rectum and sigmoid flexure.	Formation of artificial anus by inguinal colotomy.	Recovery.
36	July 13, 1899	32	Chronic appendicitis.	Removal of appendix.	Recovery.
37	July 24, 1899	49	Fibroid of uterus.	Supra-vaginal hysterectomy.	Recovery.
38	July 29, 1899	50	Chronic appendicitis.	Removal of appendix.	Recovery.

No.	DATE.	AGE.	DIAGNOSIS.	OPERATION.	RESULT.
39	July 31, 1899	20	Stricture of œsophagus impermeable.	Gastrotomy.	Recovery.
40	Aug. 2, 1899	25	Chronic ovariitis.	Removal of appendix.	Recovery.
41	Aug. 5, 1899	25	Chronic ovaritis and salpingitis.	Removal of both tubes and ovaries and appendix.	Died.
42	Aug. 7, 1899	22	Chronic appendicitis with dense adhesions.	Removal of appendix and drainage.	Recovery.
43	Aug. 8, 1899	17	Intussusception, ileo-colic.	Release of intussusception by abdominal section.	Recovery.
44	Aug. 8, 1899	21	Fibroid of uterus. Chronic salpingitis.	Complete hysterectomy.	Recovery.
45	Aug. 11, 1899	33	Pyo salpinx, left side ruptured into colon.	Complete hysterectomy. Repair of colon.	Recovery.
46	Aug. 18, 1899	12	Suppurating appendicitis.	Incision and drainage.	Recovery.
47	Aug. 22, 1899	20	Abscess of liver.	Incision and drainage.	Recovery.
48	Sept. 7, 1899	23	Chronic appendicitis.	Removal of appendix.	Recovery.
49	Sept. 7, 1899	41	Fibroid of uterus. Cystic degeneration both ovaries.	Total hysterectomy.	Recovery.
50	Sept. 7, 1899	40	Double inguinal hernia.	Double Bassini operation.	Recovery.
51	Sept. 7, 1899	14	Chronic appendicitis. Diverticulum of small intestine.	Removal of appendix. Removal of diverticulum.	Recovery.
52	Sept. 8, 1899	34	Movable kidney.	Nephrorrhaphy.	Recovery.
53	Sept. 17, 1899	28	Extra-uterine pregnancy. Ruptured in broad ligament.	Vaginal incision, enucleation and drainage.	Recovery.
54	Sept. 23, 1899	36	Carcinoma of cervix and body of uterus.	Complete hysterectomy. Removal of appendix.	Recovery.
55	Sept. 28, 1899	26	Extra-uterine pregnancy. Ruptured in abdominal cavity.	Abdominal section. Removal of both tubes and ovaries.	Recovery.
56	Oct. 2, 1899	22	Hæmatoma and cystic degeneration right ovary.	Removal right tube and ovary and appendix.	Recovery.
57	Oct. 7, 1899	23	Movable kidney.	Nephrorrhaphy.	Recovery.
58	Oct. 7, 1899	28	Double pyo-salpinx. Retro-displacement of uterus.	Removal both tubes and ovaries. Ventro suspension.	Recovery.
59	Oct. 9, 1899	48	Left inguinal hernia.	Bassini operation.	Recovery.
60	Oct. 14, 1899	22	Double pyo salpinx.	Complete hysterectomy. Removal of appendix.	Recovery.
61	Oct. 14, 1899	28	Double tubo ovarian abscess.	Total hysterectomy.	Recovery.
62	Oct. 20, 1899	45	Ovarian cyst with twisted pedicle on left side. Intraligamentary cyst on right side.	Total hysterectomy.	Recovery.
63	Oct. 21, 1899	29	Cystic degeneration left ovary.	Removal of left ovary.	Recovery.
64	Oct. 21, 1899	30	Nephralgia.	Nephrorrhaphy.	Recovery.
65	Oct. 24, 1899	21	Chronic appendicitis. Dense adhesions.	Removal of appendix. Drainage.	Recovery.
66	Oct. 26, 1899	23	Chronic appendicitis.	Removal of appendix.	Recovery.
67	Oct. 26, 1899	43	Fibroid of uterus.	Supra-vaginal hysterectomy.	Recovery.
68	Oct. 28, 1899	8	Suppurating appendicitis.	Incision and drainage.	Recovery.
69	Oct. 28, 1899	34	Inflamed dermoid cyst with twisted pedicle of right ovary. Cyst of left ovary.	Removal both tubes and ovaries.	Recovery.
70	Nov. 1, 1899	22	Inguinal hernia.	Bassini operation.	Recovery.
71	Nov. 4, 1899	20	Chronic appendicitis.	Removal of appendix.	Recovery.
72	Nov. 4, 1899	49	Fibroid of uterus with dense adhesions.	Supra-vaginal hysterectomy.	Recovery.
73	Nov. 5, 1899	17	Peri nephritic abscess.	Incision and drainage.	Recovery.
74	Nov. 11, 1899	60	Complete prociencia.	Vaginal hysterectomy.	Recovery.
75	Nov. 11, 1899	23	Chronic appendicitis.	Removal of appendix.	Recovery.
76	Nov. 17, 1899	30	Extra-uterine pregnancy. Ruptured into broad ligament.	Vaginal incision, enucleation and drainage.	Recovery.
77	Nov. 18, 1899	32	Large ovarian cyst.	Removal of cyst.	Recovery.
78	Nov. 21, 1899	23	Inguinal hernia.	Bassini operation.	Recovery.
79	Nov. 24, 1899	27	Chronic appendicitis.	Removal of appendix.	Recovery.
80	Nov. 25, 1899	35	Chronic appendicitis.	Removal of appendix.	Recovery.
81	Nov. 25, 1899	20	Gastric fistula.	Closure of fistula.	Recovery.
82	Nov. 25, 1899	73	Vesical calculus, cystitis and uremia.	Supra-pubic cystotomy.	Died.
83	Nov. 29, 1899	23	Cystic degeneration both ovaries.	Removal of both ovaries.	Recovery.
84	Nov. 30, 1899	31	Cystic degeneration both ovaries. Retro-displacement of uterus.	Removal both tubes and ovaries. Ventro-suspension.	Recovery.
85	Dec. 2, 1899	59	Strangulated inguinal hernia with rupture of intestine.	Herniotomy. Formation of artificial anus.	Died.
86	Dec. 13, 1899	23	Prolapse of left ovary.	Removal of left ovary.	Recovery.
87	Dec. 16, 1899	54	Multilocular ovarian cyst of left side with dense adhesions.	Removal of cyst.	Recovery.
88	Dec. 19, 1899	30	Obstruction of gall-bladder.	Cholecystotomy.	Recovery.
89	Dec. 21, 1899	45	Chronic appendicitis.	Removal of appendix.	Recovery.
90	Dec. 23, 1899	52	Chronic cholecystitis, with atrophy.	Exploratory incision.	Recovery.
91	Dec. 24, 1899	19	Extra-uterine pregnancy ruptured into abdominal cavity.	Removal of left tube and portion of left ovary.	Recovery.
92	Dec. 26, 1899	30	Cystic degeneration right ovary. Retro-displacement of uterus.	Removal right ovary. Ventro-suspension.	Died.
93	Jan. 2, 1900	65	Strangulated femoral hernia.	Operation for radical cure.	Recovery.

No.	DATE.	AGE.	DIAGNOSIS.	OPERATION.	RESULT.
94	Jan. 9, 1900	24	Direct inguinal hernia.	Bassini operation.	Recovery.
95	Jan. 9, 1900	32	Chronic appendicitis.	Removal of appendix.	Recovery.
96	Jan. 11, 1900	42	Chronic appendicitis.	Removal of appendix.	Recovery.
97	Jan. 13, 1900	42	Cholelithiasis.	Cholecystotomy.	Recovery.
98	Jan. 20, 1900	38	Multiple fibroid of uterus.	Total hysterectomy.	Recovery.
99	Jan. 23, 1900	25	Dermoid cyst right ovary. Cystic degeneration left ovary.	Removal both tubes and ovaries.	Recovery.
100	Jan. 27, 1900	36	Ventral hernia.	Operation for radical cure.	Recovery.
101	Jan. 27, 1900	33	Multiple fibroid of uterus. Concretion in appendix.	Total hysterectomy. Removal of appendix.	Recovery.
102	Jan. 27, 1900	42	Complete procidentia.	Vaginal hysterectomy.	Recovery.
103	Jan. 28, 1900	31	Retro-displacement of uterus.	Ventro suspension.	Recovery.
104	Feb. 3, 1900	50	Carcinoma of uterus.	Total hysterectomy.	Recovery.
105	Feb. 5, 1900	36	Retro displacement of uterus with adhesions.	Ventro-suspension	Recovery.
106	Feb. 6, 1900	37	Fibroid tumor of uterus. Cystic degeneration both ovaries. Concretion in appendix.	Supra-vaginal hysterectomy. Removal of appendix.	Recovery.
107	Feb. 8, 1900	39	Cystic degeneration both ovaries.	Removal both tubes and ovaries.	Recovery.
108	Feb. 10, 1900	45	Cyst of right ovary. Hæmatoma left tube.	Removal both tubes and ovaries.	Recovery.
109	Feb. 12, 1900	24	Large ovarian cyst.	Removal.	Recovery.
110	Feb. 19, 1900	25	Cystic degeneration right ovary.	Removal of right ovary.	Recovery.
111	Feb. 20, 1900	27	Cystic degeneration right ovary.	Removal of right ovary. Removal of appendix.	Recovery.
112	Feb. 20, 1900	35	Cystic degeneration right ovary. Chronic appendicitis.	Removal of right ovary. Removal of appendix.	Recovery.
113	Feb. 23, 1900	32	Chronic appendicitis. Dense adhesions.	Removal of appendix. Drainage.	Recovery.
114	Feb. 24, 1900	30	Retro-displacement of uterus. Cystic degeneration both ovaries.	Ventro suspension. Removal both tubes and ovaries.	Recovery.
115	Feb. 24, 1900	28	Retro-displacement of uterus with adhesions. Chronic salpingitis and ovaritis.	Total hysterectomy.	Recovery.
116	Feb. 24, 1900	32	Movable kidney.	Ventro-suspension.	Recovery.
117	Mar. 2, 1900	43	Fibroid of uterus.	Total hysterectomy.	Recovery.
118	Mar. 5, 1900	35	Fibroid of uterus.	Supra-vaginal hysterectomy.	Recovery.
119	Mar. 8, 1900	22	Double pyo-salpinx, dense adhesions and peritonitis.	Complete hysterectomy.	Died.
120	Mar. 10, 1900	23	Retro displacement of uterus. Cystic degeneration both ovaries. Chronic appendicitis.	Ventro-suspension. Removal both tubes and ovaries. Removal of appendix.	Recovery.
121	Mar. 12, 1900	16	Abscess of kidney.	Nephrotomy and drainage.	Recovery.
122	Mar. 14, 1900	27	Cystic degeneration right ovary.	Removal right ovary. Removal of appendix.	Recovery.
123	Mar. 14, 1900	37	Post-peritoneal hæmatoma traumatic.	Incision and drainage.	Recovery.
124	Mar. 17, 1900	34	Cystic degeneration right ovary. Retro-displacement of uterus.	Removal right ovary. Ventro-suspension.	Recovery.
125	Mar. 24, 1900	38	Double inguinal hernia.	Double Bassini operation.	Recovery.

SUMMARY.

	No. of Operations.	Deaths		No. of Operations.	Deaths
Operation for suppurating appendicitis.....	4	0	Exploratory operation for chronic cholecystitis, with atrophy.....	1	0
Removal of appendix for chronic appendicitis	26	0	Nephrorrhaphy for movable kidney.....	4	0
Operation for chronic appendicitis and diverticulum of small intestine.....	1	0	Nephrorrhaphy for nephralgia.....	1	0
Abdominal operation for ruptured extra-uterine pregnancy.....	3	0	Nephrotomy for abscess of kidney.....	1	0
Abdominal operation for unruptured extra-uterine pregnancy.....	1	0	Nephrotomy for stone in kidney.....	1	0
Vaginal operation for extra-uterine pregnancy ruptured into broad ligament.....	2	0	Operation for perinephric abscess.....	1	0
Operation for radical cure of femoral hernia for strangulation.....	2	0	Suprapubic cystotomy for calculus.....	1	1
Bassini operation for inguinal hernia.....	7	0	Operation for post-peritoneal hæmatoma.....	1	0
Operation for radical cure of ventral hernia...	2	0	Abdominal hysterectomy for carcinoma of uterus.....	3	0
Herniotomy and fixation of artificial anus for strangulated inguinal hernia with rupture of bowel.....	1	1	Abdominal hysterectomy for fibroid of uterus complicated by double pyo salpinx.....	1	0
Abdominal section for intussusception.....	1	0	Abdominal hysterectomy for pyo-salpinx.....	1	0
Gastrotomy for stricture of œsophagus.....	1	0	Abdominal hysterectomy for double pyo-salpinx.....	2	1
Inguinal colotomy for carcinoma of rectum...	1	0	Abdominal hysterectomy for double tubo-ovarian abscess.....	1	0
Resection of colon for stricture.....	1	0	Abdominal hysterectomy for ovarian cyst with twisted pedicle and intra-ligamentary cyst.....	1	0
Operation for closure of gastric fistula.....	1	0	Abdominal hysterectomy for retro displacement of uterus with adhesions and chronic salpingo ovaritis.....	1	0
Operation for abscess of liver.....	2	1	21 abdominal hysterectomies with 2 deaths.		
Cholecystotomy for obstruction of gall-bladder.....	1	0	Vaginal hysterectomy for carcinoma.....	1	0
Cholecystotomy for cholelithiasis.....	1	0	for complete procidentia	2	0

	No. of Opera- tions.	Deaths
Ovariectomy for ovarian cyst with twisted pedicle.....	1	0
Ovariectomy for large ovarian cyst.....	4	0
Removal of solid tumors of the ovaries.....	1	0
Ventro-suspension of uterus and removal of appendix.....	1	0
Ventro suspension of uterus for retro-displacement.....	2	0
Ventro-suspension of uterus and removal of one ovary.....	1	1
Ventro suspension of uterus and removal both tubes and ovaries.....	6	0
Ventro-suspension for retro-displacement of uterus and cystic degeneration of ovaries...	6	0
Ventro-suspension for retro displacement of uterus and double pyo-salpinx.....	1	0
Removal of both tubes and ovaries— for dermoid cyst and small cyst of other ovary.....	2	0
for cyst of ovary and hematoma of tube for cystic degeneration.....	1	0
for chronic inflammation.....	2	0
for prolapse of ovary.....	1	1
Removal of one ovary for cystic degeneration for prolapse of ovary... 1	0	0
Removal of one tube and ovary— for sclerosis of ovary and hydro-salpinx. 1	0	0
for cystic degeneration.....	1	0
Total operations, 125, with 7 deaths. Mortality, 5.6%.		

The following points in the above cases are worthy of attention:

Case No. 4—Multilocular ovarian cyst, right ovary, adhesions.—This case had exhibited first signs twelve months previously. When she entered the hospital her ankles were swollen, and she was suffering from a slight cough. Her abdomen was enormously distended by the cyst, which could be outlined as extending up to the ensiform cartilage. She made an uneventful recovery.

Case No. 5—Suppurating appendicitis.—This case was operated on twelve days from onset of attack.

Case No. 25—Ruptured extra-uterine pregnancy. The history of this case showed that rupture had taken place two months previously. This occurred in the abdominal cavity, and was controlled by the formation of adhesions. There was a considerable blood tumor present at the time of operation, and all the organs were matted together by dense adhesions. She made an unusually easy recovery.

Case No. 27—Fibroid of uterus. Double pyo-salpinx.—This patient was taken with pelvic inflammation six weeks previous to operation. She had suffered from violent pain, vomiting, and great tenderness.

Case No. 28—Unruptured extra uterine pregnancy.—This patient presented rather obscure symptoms. A diagnosis was made by a consideration of these, associated with the bi-manual examination. The diagnosis was con-

firmed by the operation, and the patient made an uneventful recovery.

Case No. 30—Renal calculus.—This patient presented symptoms of stones in the kidney which had existed since childhood. For several years he had been in a semi-invalid condition. I saw him about a month ago and he was in perfect health and attending to his business regularly.

Case No. 31—Strangulated femoral hernia.—This hernia had existed for twenty-eight years; it became strangulated two days previous to operation. The patient made an easy recovery.

Case No. 33—Abscess of the liver.—This case was of three weeks duration. The patient had been treated for malarial fever and was thoroughly septic at the time he was presented for operation. The operation was successful, but the patient finally died of septicæmia.

Case No. 34—Inflammatory stricture of the ascending colon.—This patient was taken eight weeks previous during child birth with violent pain in the abdomen, nausea and vomiting; this was succeeded by obstinate constipation and considerable local tenderness. The colon, at the time of operation, was found almost completely occluded. The affected part was excised and the colon repaired by end to end anastomosis with the Murphy button. The patient made an easy recovery.

Case No. 39—Impermeable stricture of œsophagus.—This case has previously been reported.

Case No. 43—Intussusception.—This case was of two days duration and had been promptly diagnosed and brought a considerable distance for operation. He made an uneventful recovery.

Case No. 51—Chronic appendicitis. Diverticulum of small intestine. This patient was operated on for chronic appendicitis, and at the time of operation the diverticulum was discovered. It was about two inches long and about a quarter of an inch in diameter. This was removed and the intestine closed by suture. The patient made an easy recovery.

Case No. 53—Extra uterine pregnancy ruptured into the broad ligament.—Hæmatocele was clearly defined as being limited to the broad ligament. Vaginal incision was made and blood clots and membranes thoroughly evacuated by the finger, and the cavity packed with gauze. The patient made an easy recovery.

Case No. 55—Extra uterine pregnancy ruptured into the abdominal cavity.—Two days previous to operation the patient was seized during the night with violent cramps in the abdomen, fainting, coldness of extremities and other

signs of hemorrhage. She was not seen until the next morning, when an examination was made, and a tumor found in the right broad ligament. She was taken at once to the hospital for operation, where a second examination was made. The patient's condition had improved, a well defined tumor could be made out, and as a pus case had been first operated upon, it was considered safest to defer operation until the next day. On the next day when the patient was brought up for operation and anesthetized, no tumor could be found. The operation was at once proceeded with, and the first cut in the peritoneum was followed by a gush of blood. The entire abdominal cavity was filled with blood. The operation was completed and the patient made a good recovery.

In this case the first rupture had evidently been in the broad ligament, which had again ruptured into the abdominal cavity. This case serves as a caution against delay in dealing with this trouble.

Case No. 73—Peri nephritic abscess.—This case had previously been diagnosed: Suppurating appendicitis. The lumbar incision was made, and the patient made an easy recovery.

Case No. 76—Extra uterine pregnancy ruptured into the broad ligament.—This case was similar in every respect to number 53.

Case No. 77—Large ovarian cyst.—The cyst reached the ensiform cartilage.

Case No. 85—Strangulated inguinal hernia with rupture of intestine.—This hernia was of twenty years duration. Strangulation had occurred two days previously. The intestine had become gangrenous, and had ruptured just previous to operation. The patient died.

Case No. 87—Multilocular ovarian cyst of left side with dense adhesions.—This occurred in a patient fifty four years of age. Enlargement had first become noticeable two months previous, and had repeatedly increased. The cyst had to be peeled out for its entire circumference. The patient made a good recovery and is now living and in good health.

Case No. 91—Extra uterine pregnancy ruptured into the abdominal cavity.—The rupture had taken place two weeks previously and was controlled by adhesions. There was matting of the intestine and the affected organs. The patient made an easy recovery.

THE UNSANITARY CONDITION OF THE VIRGINIA PENITENTIARY.*

By CHAS. V. CARRINGTON, M. D., Richmond, Va.,

Surgeon to the Virginia Penitentiary; Assistant to the Chair of Clinical Surgery, University College of Medicine, etc.

The paper I have for your consideration tonight should excite the keenest interest in the mind of every good citizen. I ask your careful and critical attention.

The object proper of a physician's care is *the alleviation of physical suffering in every form and under all circumstances in which it comes within the scope of his practice.* I have, during the past few months, been brought immediately in touch with a type of suffering far removed from the ken of the general practitioner and entirely outside of the observation of the citizens of this State, though they are themselves, unconsciously, the cause of it.

This is my apology for presenting before this body the statement of some few facts pertaining to the "existence" of prisoners in the penitentiary of Virginia. All of them may be substantiated by absolute proofs. I propose now to deal with them briefly in this paper, so that a healthy sentiment may be aroused throughout the State, calculated to remove, as far as possible, the evils which they bespeak.

It is not my intention to condone the faults—grave or otherwise—of the prisoners; to claim one "jot or tittle" less of punishment for them than the law wisely determines should be theirs, or to add one grain of comfort more than justice and humanity permit and demand; but it is my wish to show that the "existence" of the prisoners in the penitentiary is not according to what justice—as dictated by humanity and meted out by law—should extend to men, who, having lost the right of citizenship, enter into a new relationship with the State, as wards, and have no means of helping themselves except as she dictates.

Disease, by way of epidemic, fills the mind of every citizen with horror, and all, as with one accord, work toward preventing its approach. Disease, contagious, strikes with terror, and all that science and medical skill can do is done to stamp it out. It is quarantined against; it is isolated; it is fought on every side, and no stone is left unturned to uproot it. Disease, *compulsorily and needlessly generated in the penitentiary*, however, is regarded with silent apathy, and so permitted that it becomes a sin, crying to Heaven for vengeance.

*Read before the Richmond Academy of Medicine and Surgery, March 26, 1901.

I have the honor of our State at heart, and, as one of her citizens, as well as surgeon to the penitentiary, I wish to show that this is so, with a view to legislative action—looking especially toward abolishing the disease last referred to.

I keep in view in the beginning the fact that confinement in the penitentiary has a triple object. It *must* be "punitive" by reason of the misdeeds of the criminal. It *must* be "deterrent" for the protection of society. It *should* be "reformatory," if the wisdom of the law be reduced to practical application in dealing with the criminal behind the bars of such an institution.

I have no hesitation in saying that these objects cannot be satisfactorily or generally reached in the Virginia penitentiary. Soundness of mind and soundness of body are themselves intimately associated, and influence directly the actions of men. On this presumption, therefore, which will certainly apply in a large number of cases, there should be an endeavor to restore to normal action the mind and body of the man who committed the crime by reason of their derangement. The punitive idea helps this out, I am assured, but it must be *humanely* punitive.

It is surely punishment enough to be isolated from society, from home, from friends; to be ground down by hard labor on a contract system; to suffer the loss of all the rights of citizenship; to have no will of one's own in anything; in fine, to be at the beck and nod of men who, too frequently, assert their authority through whim or caprice.

To so place men as to compel the commission of new crimes for which a barbarous punishment is inflicted is not the idea that should prevail in our State prison.

Men of dangerous mental tendencies are packed into cells, like so many sardines, with men of better mind; and it is a dozen to one that it is the better man that suffers. The good man is forced into committing an apparent crime, frequently by way of self defence, and he must undergo all the pains and penalties which an infraction of the rules imposes. Thus, the State, if not directly the cause of the crime, furnishes certainly the occasion for it, the results of which neither the immediate authorities, the directors, nor the surgeon, are powerful to prevent.

It is so with juveniles. The congregate plan in vogue in the penitentiary throws together men hardened in crime with youths who hardly know its meaning save that they have been convicted of it. For these juveniles the peni-

entiary becomes a school of vice—and of a form of vice, too frequently, that I shrink from referring to, much more of declaring openly; a vice upon which tradition sets the seal of the vengeance of Heaven itself, when it records the story of the twin cities that for centuries have lain silent beneath the foaming of the Dead Sea waves.

If there be a crime that calls for punishment to-day, this is the one; but immunity from the crime can better be secured by prevention than by punishment. In the penitentiary, equipped with its present complement of cells, it can never be more than partially prevented, and a thousand blunders, and cruelties, and deceptions, and inhumanities, must take place to secure even a partial triumph over this revolting vice.

Nor is this the only trouble of the overcrowded cells. I am safe in saying that every man consigned to them is daily suffering a species of enforced lingering life, which might be more properly termed a *living death*. If it be taken that 0.6 of a cubic foot be the average amount of carbonic acid gas respired by a human being per hour, and 0.3 cubic feet of that gas be the maximum amount of impurity admissible in 1,000 cubic feet of air, then each person ought to have 2,000 cubic feet of fresh air per hour. If ventilation be changed, say twice per hour in the apartment, this would demand for the individual 1,000 cubic feet of space. As a matter of fact, this amount of sleeping space is very seldom attained by the poorer class of persons, but most of them have, at least, more than half that amount. Let us see the amount afforded in the cells of the penitentiary.

Total number of cells in male prison, 192.

Average number of convicts in these cells 1,200 nearly.

DIMENSIONS AND CUBIC FEET OF SPACE OF SOME CELLS.

Cell.	Length.	Width.	Height.	Space in		No. Occu-	Average
				C. F.	pace			pants.	cubic feet
	Ft. in.	Ft. in.	Ft. in.				space per man.
195	22.00	24.9	9	4	5,082	32	157
150	24.00	20.9	10	3	5,104	29	176
120	13. 3	13.7	11		1,991	12	166
169	14.10	13. 9	9		1,836	12	153
142	9	6.9	10.10		658	5	132
40	8 3	6.5	9		482	4	120½

As can be seen from the above figures—which is practically true of all the cells—it is impossible for the prisoners in winter to have even two hundred cubic feet of fresh air per hour. To start with, surrounded as the penitentiary is with lofty walls, absolutely pure air is unknown. Such air as there is possible cannot be changed in winter more than three

times in the twelve hours during which the men are inclosed within their cells. Carbonic acid gas poisoning follows as a matter of course. By reason of the imperfect heating of the cells they are almost quite hermetically sealed during the long winter nights. The transoms and windows through which any ventilation is possible, being in direct line with the upper bunks on which a majority have to sleep, what would give them a chance to escape in some degree the effects of the gas, is denied them if they want to save themselves from pneumonia, or la grippe, or kindred diseases. These are the principal diseases which I have had to fight since my incumbency in the office of surgeon, and I have no hesitation in believing that many more would succumb to these diseases than actually have succumbed were it not for the fact that many on coming here have comparatively vigorous constitutions, being youthful, and coming from the walks of life in which such constitutions are found. The cells themselves may be properly dubbed *death traps and crime promoters*, and there will be a blot on the escutcheon of the fairest State in the Union until their condition is entirely improved. This may be done in various ways. Building a new structure containing cells for each man, or at most, for two men, or adding to the present structure a sufficient number of cells to relieve the over crowding. There are other hardships which the State might easily prevent. Most States congratulate themselves when their penal institutions are self supporting. Here a comfortable margin, by way of profit, remains yearly in the treasury, which, if in part applied to the improvement suggested, would effect the desired results. A better equipped kitchen for the preparation of food is *absolutely necessary*. The material itself, though coarse, is fairly good, but its preparation is *abominable*, and this does not in any wise reflect discredit upon the authorities, who are doing all that men may with the opportunities at hand to attain what is practically impossible, the furnishing of well-prepared food. Nor is this all. There is another crying evil coupled with its distribution.

Out of the ill-ventilated and in the early morning overheated cells, twelve hundred men must march slowly to obtain, in single file, this scanty fare. There is no dining-room. No matter how inclement the weather out in the open air they proceed, and for fully half an hour they shivering go to receive the food, bad enough already, now partially frozen, for one hour at least must elapse between the placing of the food on the board and the time at which

the last man receives it. I would not mind the freezing of the food so much if it were not for the further fact that the unfortunate men are half frozen too.

The moment I realized this state of affairs I recommended the giving of yarn shirts to the men, so that the *food* marches would not turn out to be *funeral* marches, and I have to thank the Board for the promptness with which they acted on the recommendation to give all the men these very necessary articles of wear. There are from three to three and a half hours per day of the convict work-day life spent in these single file marches. Marches to meals, marches to the shops, and *disgusting* marches to the cess-pools with buckets, for this is the only form of sewage in use in the penitentiary to-day, outside of the hospital. The terrors of this system of bucket sewage make our penitentiary throw into the shade the storied horrors of the Siberian mines or the Black Hole of Calcutta.

I will not dwell at too much length on this or on the other health destroying agencies at work in the penitentiary. It may be said that summer brings some relief. It does by way of ventilation; but there are other discomforts which outrival the former, tending towards the woe of the unfortunates. Under the entire penitentiary runs a labyrinth of dungeons, corridors, etc., from which noxious and pestilential vapors emanate, and wherein rats and vermin breed in millions innumerable. Rest is almost impossible, with beds alive with bugs, which, up to the present, have resisted what efforts have been made to destroy them. A short relief is sometimes obtained by whitewashing the cells, and other modes of disinfecting to which the authorities resort, in order to make life even approximately tolerable. Some of the former troubles recounted in this paper are within the power of the prisoners *themselves* to lessen. The latter are entirely outside their control, as well as outside that of the authorities who employ every means in their power to no effect.

But with all these evils, at first sight, it may appear from a glance at the annual report that the death-rate at the penitentiary is extremely low. The tables, however, are misleading. It must be remembered that few but able-bodied prisoners are permitted to remain in the penitentiary proper. Those who would swell the death-rate—if permitted to remain—are sent to the State Farm, so that the average death-rate in both places comes nearer to the true actual death-rate of the penitentiary. Take last year, for example: The death rate in the

penitentiary was 17.25 per 1000. The death-rate at the farm was 45.53 per 1000, making the actual death-rate of the penitentiary about 31.68 per 1000, a rate certainly high, in view of the fact that many men are yearly pardoned on the recommendation of the surgeon, by the Governor, if it is believed that their immediate death, if allowed to remain, is certain. Forty per 1000 I consider to have been the actual death-rate in the institution last year. This is much too high when we consider all the circumstances in the case.

There are no infants in the institution—there are no extremely aged persons. The great majority are young—all are enforcedly temperate. The average age of all the prisoners is not much in excess of twenty-five years. Besides this, criminals, as a class, are unusually vigorous, accustomed more or less to privations, and their average term of imprisonment is not much over five or six years.

I claim, and I believe consistently, that from a financial standpoint the State would be largely the gainer by removing the terrible evils which now, by law, she permits. It would entail but slight expense. From ten to twenty dollars per day would be saved in the earnings of the men who must now be excused by reason of sickness, and when these same men are discharged from prison they would be vigorous enough to earn their daily bread instead of being, as many are now, a burden on society when their liberty is regained.

A penny wise and pound foolish policy obtains, and legislators ought to see to it that such a policy should no longer be carried out. I have no doubt but *proper* legislation would follow a *proper* knowledge of the facts, and if by any means in my power a due knowledge of the facts in the case can be brought within the knowledge of all the people, that means will be employed at every cost.

To reform the criminal is to make him just, to make him realize that it is the part of every man to give to every other man that which is his. The State must set the example of absolute justice in dealing with the relationships of men if she would reform her wayward children. Criminals, as a class, are keenly alive to every act of injustice perpetrated in the name of law. And there are rights, born of humanity, which are too frequently trifled with in dealing with them. The days of the rack and the cross and the thumb screw are over. The light of the Twentieth Century has shown them as absolutely powerless in deterring from crimes; and that hope, inspired by honest dealing in the matter of law in its pun-

ishment of offenders, will be a more powerful lever in winning men from the evils of their ways, than all the pillories and pulleys and whipping posts of the Dark Ages, forever execrated in the memories of honest men.

932 Park Avenue.

ALBUMINURIA WITHOUT MANIFEST ORGANIC RENAL LESIONS.*

By W. A. DEAS, M. D., Richmond, Va.

The subject of my paper to night is "Albuminuria Without Manifest Organic Renal Lesions," or *Functional Albuminuria*, as it is generally called.

Perhaps I ought to offer an apology for presenting a subject which has been so frequently discussed; and yet when we remember in what a very undecided state this subject of transient or functional albuminuria still remains, and how much has been written upon it, and how very little determined, I do not think an apology is necessary for again introducing it. It seems to me that it is a subject ever new and ever interesting to the general practitioner, the specialist, and particularly so to the examiners and medical directors for life insurance companies.

The medical profession has long been familiar with that class of patients in which this form of albuminuria appears. They are apparently in good health, but still they pass either constantly, or from time to time, small, or even large amounts of albumin in their urine; and this may extend over periods of months, or even years. These albuminurias have received many names by different writers. They have been called functional, paroxysmal, intermittent, cyclic, chronic, and even physiological.

Our first clear idea of the clinical value of albumin in the urine is due to Dr. Bright, of England, in his masterly "Report of Medical Cases," in 1827 and 1831. For a long time following these reports, when albumin or any proteid body was found in the urine, such cases were considered as due to a true renal affection or nephritis, and the gravest prognosis was given. At the present time, although there has been some reaction from these extreme views, and although we know in an examination of urine we may find several other proteid bodies in albumin, still we are all, I think, more or less inclined to look upon any case of albuminuria with suspicion and uneasiness.

* Read before the Richmond Academy of Medicine and Surgery, March 12, 1901.

Following the writings of Dr. Bright, Sir Robert Christison was the first to point out that certain articles of diet caused temporary albuminuria. Following him in 1864, Iaccoud asserted that persistent albuminuria might and did occur in persons in otherwise good health. Since then many other physicians in Europe and America have confirmed the above observations.

Before going further let me say a few words as to the anatomy and physiology of those parts of the kidney which are believed to be concerned in the production of albumin—namely, the vessels, the blood, and the secreting apparatus. The kidneys are well supplied with arterial blood by the renal arteries. Branches of these arteries give off a large arterial twig to each Malpighian body. Each twig of the afferent artery pierces the capsule and breaks up into a plexus, the Malpighian tuft or glomerulus, and it is believed by many observers that the glomeruli are directly concerned in the secretion of albumin. From these tufts arise the venous radicles of the different veins, which are much smaller than the afferent arteries. This, of course, would tend to renal congestion. The efferent vein, after leaving the capsule of Bowman, breaks up into a plexus and loosely surrounds the nearest convoluted tubule, leaving spaces generally filled with fluid, between the walls of the vessels and the urinary tubules. From this plexus arise the branches forming the venous trunks. The renal veins have no valves, and this is another reason tending to renal congestion. We know that the urinary tubules begin as Bowman's capsules, with its constricted neck, then soon dilate and become convoluted, then pass downward as the descending limb of Henle's loop, then upward again as the ascending limb, becoming convoluted again, and forming irregular tubules, and finally enter the straight or collecting tubes which carry their contents to the pelvis. From the experiments of Haidenbraim, Overbeck and others, which can only be referred to here, it is believed that albumin is a secretion of the epithelial cells of the glomeruli, and takes place within the capsule of Bowman; and in order to secrete the albumin there must be a slowing down of the blood while passing through the tufts.

What we mean then by "Albuminuria Without Manifest Organic Lesions," or functional albuminuria, is an albuminuria extending over a longer or shorter period of time without detection of kidney trouble, and accompanied in most instances by fair or even robust general health, and with final disap-

pearance of albumin. Many competent observers have made extended tests as to the frequency of these cases. Their results are not at all uniform. They range from two to eighty-four per cent. of the cases examined. This is a great difference, and it is difficult to account for it. It has been ascribed to the varying conditions of seasons, climate, habits, pursuits and surroundings, and to a greater or less degree of care and accuracy in the examinations. Senator and a few others claimed that their examinations led them to believe that albumin could be found in the urine of every healthy person. Sir William Roberts has said that concentrated urine from persons in undoubted health were rarely free from traces of albumin. If this is so, it shows how near we all are to a true albuminuria. But I do not think that we are as yet prepared to accept the existence of a true physiological albuminuria.

These albuminurias have had numerous groupings. Perhaps one of the simplest is this: 1. Simple albuminuria. 2. Uric acid or oxaluric form. 3. Neurotic form.

Before speaking of these forms it might be asked, "Can we say that there is a true physiological albuminuria?" That is, is albumen a constant element in healthy urines. I have just mentioned the conflicting views as to the frequency of functional albuminuria, and shall only now remind you that some observers and many of the insurance companies found in the very many thousand cases examined but two per cent. Others claimed eighty-four per cent.; and Senator insisted that albumin exists at all times and in all urines, as could be proved by sufficiently delicate tests. Admitting that the insurance companies and others finding only two per cent. may not have used the most delicate tests, still that would not have accounted for the absence of albumin in ninety-eight per cent. of the cases examined. In the cases of those who found eighty-four per cent. of albumin, and of Senator, who found albumin in all urines, it has been claimed by Millard that their tests, as published, were faulty, and it seems to me that we have as yet no sufficient proof that albumin does exist as a normal ingredient in healthy urines.

Another question that might be asked is this, "Are these albuminurias produced in any other way than by some derangement of the circulation, or glandular apparatus of the kidneys?" I will refer to this question again.

And now a few words upon the first form or simple albuminuria. This form includes those cases which may continue for years in those in apparently good health, and who may never

have had any disturbance of digestion, or circulation, or in their nervous functions. They might, perhaps, never have been discovered, except accidentally, by the family physician or by an examiner for life insurance. These are considered true functional or chronic albuminurias, and are frequently found to exist after a simple meal, or after eating certain articles of diet; also after exposure to cold, or cold bathing; after great muscular, or even very moderate exercise, and after mental strain or brain work. A record of experiments is a rather dull subject to most hearers, and I will try not to weary you. We are all familiar with those on both animals and man, in which eggs and other albuminous foods were given freely by the mouth with the result of producing albuminuria. Grainger Stewart's experiments show that a diet largely of egg has usually produced albumin in the urine, but in small amount—not egg albumin. We cannot account for the appearance of this serum-albumin by supposing that the egg albumin had been changed by digestion into serum albumin, and then secreted by the kidneys. Semmola experimented on dogs by introducing egg-albumin by the stomach, veins, and subcutaneously. The animals were killed, and he always found a true glomerulo-nephritis. It is believed that in all these cases of albuminuria after a diet of nitrogenous food, including gluten, casein, and albumin, some disorder of digestion was produced, and that peptonization was weakened, and that the albuminoid was absorbed in some changed condition and circulated in the blood as a toxin, and by its irritating qualities excited a glomerulo nephritis. These cases were dietetic albuminurias, evidently associated with vascular changes in the kidney, and it has not as yet been demonstrated that such an albuminuria can occur independently of such changes. So far, then, as our knowledge goes, it is thought to be quite probable that albuminurias, not due to glandular changes in the kidneys, can be explained by the conditions just mentioned—viz.: irritating albuminoids or toxins in the blood—causing vascular changes in the kidneys. I have already mentioned muscular exercise as causing these albuminurias.

Great stress has been placed upon this cause. The simplest form seems to be what is called postural albuminuria. In these cases when quiet, or lying down, albumin was not found. When up, and after taking even the gentlest exercise, albumin appeared. When lying down again, the albumin again disappeared. Dr. Raikes, physician to the Rugby School, Eng-

land, has reported striking cases. It appears that two mornings in the week, at 7 A. M., the boys were required to attend prayers in the hall, where they had to stand for fifteen minutes. Upon other days, they were required to attend prayers in the chapel, where they were seated. It was quite common for the boys to faint in the hall but not in the chapel. The doctor found that the urine of the boys who were affected always contained albumin, and that they had hard rigid pulses. He thought the trouble was due to a pure hyperæmia of the kidneys. The hearts in these cases, he thought, might have been somewhat weakened by fasting since the day before, and this may have caused cerebral anæmia, and some vaso motor influence causing hyperæmia in the kidneys. When seats were provided in the hall at prayers, all trouble ceased. Pavy gives an account of a young English student, who stood a civil service examination, and was rejected because albumin was found in his urine. It seemed to be a functional case, and he was afterwards passed. He then went up to Oxford, and after that had to go up for a final physical examination before going to India. He had read up on these cases, and remained in bed until just before the examination. No albumin was found, and he was accepted, there being a temporary disappearance of the albumin. This is another case of postural albuminuria, in which the erect posture seemed to act as violent exercise in others. The cause here has been attributed to altered blood pressure in the Malpighian tufts. We need not dwell on the albuminuria found in that large class of cases, including foot ball players, bicycle riders, athletes, as well as those undergoing less violent exercise of prolonged walking, riding, running and marching. In the cases of twenty-nine foot-ball players examined by Dr. Macfarlane, he found albumin in all, from a trace to a ring a quarter of an inch deep; and in nearly all there were casts, either hyalin, granular or epithelial; and in a few, blood casts. Oxalates and urates and uric acid were also there in quantity, and in some—blood. A writer, commenting on these cases, says: "Now, these players, it is presumed, were specimens of perfect health, and violent muscular exercise was undoubtedly the great factor in producing the albuminuria, although mental excitement, cold bathing and nitrogenous diet exercised no inconsiderable influence as accessory cause. The albumin disappeared after a few hours. From the presence of casts, and even blood, there can be no doubt that an acute

congestion of the kidneys was present in these cases; to which was added a weakened heart's action from fatigue, a concentrated urine from copious perspiration, and the irritating effects of an abundance of oxalates and uric acid, which conditions are the very ones which experimentation has shown to favor the production of albuminuria." He concludes by saying: "Such, then, are the consequences attending upon severe muscular exertion."

The class of cases due to some fault of nerve innervation, or neurotic, as they are called, seems a large one. Runeberg has attributed these cases to some disturbance of the action of the heart, or blood vessels, through the influence of the vaso motor nerves, which may be either a dilatation from paralysis, or contraction of the arteries by cramp or spasm. He found that irritation of the renal nerves produced contraction of the small arteries and capillaries of the kidneys, and that albumin then appeared in the urine. The contraction of the small vessels retards circulation, decreases arterial blood, and causes anoxæmia, or deficiency of oxygen in the blood. Other experiments of his on the renal nerves caused vaso motor paralysis and dilatation of the arteries, and slowed the circulation in the kidneys with a decrease, or arrest or urinary secretion, and appearance of albumin in the urine. Violent irritation of the skin, such as burns, severe applications or severe chilling cause albuminuria. Irritation of the auditory nerve by rapid detonations; of the retina by strong light of the solar plexus by hypodermic injections of chloroform, all cause a transient albuminuria. Anger, simple nervous excitement, prolonged mental action, and many other slight causes result in the same. It seems quite probable, then, that many of the cases of transient albuminuria we meet, and are in doubt as to the cause, may be due to some disturbance of the nervous system which controls the vaso-motor nerves; and from what has been said, we have seen that vascular changes in the kidneys do result from this vaso motor disturbance.

The last of these albuminurias is the uric acid or oxaluric form. This form includes all those cases sometimes described as due to a local cause, or, as Charcot calls it, a mechanical irritation of the kidneys.

They are brought about, it is thought, by defective metabolism, assimilation and tissue waste. When we have a concentrated condition of the blood, as after violent exercise, or from products of defective assimilation, or bile, or specially from uric acid or oxalate of

lime, we meet with these cases. They are generally somewhat nervous or dyspeptic, and this is said to be most apt to occur in the oxalate of lime cases. The specific gravity of the urine is apt to be high; may persist at 1.036, and generally deposits urates, uric acid and oxalate of lime. The amount of albumin is apt to be small and intermittent. Dr. Da Costa includes among these cases the albuminurias of adolescence, and says they present the same general features of the cases just described—*i. e.* nervous and digestive disturbances, intermittent albuminuria, urine of high specific gravity, and deposits of urates and oxalates. He then asks whether this tissue waste, with its uric acid and oxalates, may not cause functional albuminurias, and also whether the albuminuria of forced and excessive exercise may not be due to the same causes. The football players mentioned before all had uric acid, urates and oxalates; and some had casts covered with crystals. Dr. Da Costa believed the pathology of all these cases to be a congestion of the kidney, and if this continued he thought that local inflammatory changes occurred due to the irritating effects of excreting the waste products. I think, however, it is now thought that most of the cases of functional albuminuria are due to a combination of the various causes mentioned. But whatever may be the cause or causes, they all seem to produce a local vascular change in the kidney.

It may be asked, "How can this be definitely proved, since true functional albuminuria is rarely fatal, and we cannot make observation after death?" It is true, we cannot make experiments on man, but it can be done on animals; and these experiments all indicate that vascular changes do take place in the kidneys. Then Millard and Shattuck, after many studies of kidneys after death, reported that it was rare not to find some scar, or contraction, or detachment of Malpighian bodies (or glomerulitis), or other evidence of kidney trouble, which had healed after local changes or disturbances in the kidney, due to latent albuminuria.

Now, in the light of our present knowledge, what are we to say about functional albuminuria?

Let me review rapidly—1. There is a transient or functional albuminuria, occurring with greater or less frequency, and with more or less persistency. 2. These cases have been traced to various causes, already enumerated. 3. Under whatever form these functional albuminurias occur, we have good reason for believing that vascular changes in the kidneys

are always found. 4. It is believed that in most, if not all of these cases, there is a true local congestion of the kidneys, which may lead on to more serious trouble, if persistent. 5. We have no reason for believing that there is a true physiological albuminuria—*i. e.*, that albumin is a normal ingredient of the urine, and is found, as Senator claims, in all healthy urines at all times.

If these conclusions are correct, they are most interesting to all medical men. It is believed, then, that in every case of functional albuminuria there is a real congestion of the kidney; slight it may be, and transient in some cases, but most acute in others, and, if persistent, capable of leading on to further trouble. With our present knowledge, we are not able to predict which form may prove transient and harmless, or which lead on to chronic lesions. And until we can do this, it seems to me, we are right in regarding these cases with suspicion. The general practitioner, I think, should keep these cases under observation, if possible, or if an examiner for a life insurance company, he should either decline the risks, or postpone with the hope of being able to make further study of the cases, or, as I believe is now done in some companies, consider albuminuria as involving an extra hazard, and then make use of endowment forms, short periods, or other forms of insurance to write insurance on these lives.

Some years ago, I heard Dr. Paul Munde read a paper before the New York Academy of Medicine. Dr. Gaillard Thomas was on the platform near the President. Dr. Munde had scarcely taken his seat, after reading his paper, when Dr. Thomas jumped up, and said: "Mr. President and gentlemen,—There is nothing new in the paper of the evening." Now, I am quite willing to acknowledge that nothing new or original has been presented to-night, and yet I thought it well to try to review some things which have been written on this subject during the past few years; and in the discussion which I hope may follow I feel quite sure I will learn something.

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SOME INTERESTING CASES OF HEADACHE DUE TO NASAL TROUBLE.*

By JOSEPH A. WHITE, A. M., M. D., Richmond, Va.

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Two years ago at Charlotte, N. C., I read a paper before this Society on "Headache—Ocular and Nasal." Since then many cases illustrating my text have been observed by me both in private practice and in my clinic. In the last few weeks, three or four cases with specially interesting features have presented themselves.

CASE I.—On December 29th, 1900, I was consulted by J. W. S., 47 years of age, of Alleghany county, Virginia. For several months he had suffered from constant pain in his head, sometimes limited to the left frontal, temporal and malar region; at others, extending all over the head. It deprived him of sleep, prevented him from attending to his business, and plunged him into such a condition that at times his friends thought his mind was more or less affected. In spite of the treatment instituted he did not improve, and the constant use of anodynes was having a deleterious effect. I found that he had some astigmatism, more marked, and with a diagonal axis in the right eye. Its correction did not relieve him.

Examination of the nose showed hypertrophy of the nasal tissues, and especially enlargement of the left middle turbinate, with some discharge from the left nostril.

My diagnosis was neuralgia, due to nasal pressure from enlarged turbinate and ethmoiditis. On January 2nd I removed the left turbinate with a snare. On the 7th I further improved the nasal drainage by removing the remains of the turbinate with the cutting forceps. After treatment daily with antiseptic washes, sprays, etc., resulted in a gradual disappearance of the pain, and on January 20th he was discharged, and went home.

He had been an engine driver on a railroad, and about two weeks after his return I received a letter from the superintendent of the railroad saying he had re-applied for work, as he claimed to be entirely well, but before putting him back, he wished to know if the man's mind had been affected as was rumored among his friends. The explanation of his trouble

* Read before the Tri-State Medical and Surgical Association of the Carolinas and Virginia during the session in Richmond, 1901.

was satisfactory, and he resumed his work. Up to this time he has had no trouble.

CASE II.—J. E. W., 34 years of age, of Suffolk, Virginia, consulted me January 8th for a constant headache, usually on the left side on the temporal and frontal region, and at times the pain was excruciating. He thought it due to optical error, as he had been wearing cylindrical lenses for years. A change was needed in the left lens, which was made. I also found a little hyperphoria, one eye being slightly raised above the other.

Examination of the nose showed the septum to be deflected to the left, with a bony spur pressing into and adherent to the middle turbinate. The probability of the pain being caused by the nasal trouble was explained to him, and an operation suggested. This he declined, and returned home hoping to get relief from his glasses. On January 24th he came back suffering acutely, having been incapacitated for work of any kind for several days. On January 25th I sawed off the bony spur, and partially removed the enlarged turbinate with the cold snare. A compress was inserted to prevent bleeding, and he was sent to bed. That night he had one of the most violent attacks of pain he ever experienced, that caused considerable constitutional disturbance. Another physician was called, who gave him hypodermic injections of morphine, and ordered quinine to be taken at regular intervals. Instead of relieving him, this seemed to make him worse, and aggravated all his symptoms. The next day I saw him, suggested salol and phenacetine, instead of the quinine and morphia, and on the 27th he was well enough to come to my office, have the compress removed, and the nose cleansed by an antiseptic spray. On the 28th he was so much better he returned home, promising to come back in two weeks, if he did not continue to improve, as the operative work was not finished. February 20th I received a letter from him stating that for a week after his return he was confined to his bed, and that now, although he was able to work, he still suffered much pain, and was, therefore, much discouraged.*

CASE III.—T. L. H., 52 years of age, from McDowell county, W. Va., came to see me February 4th. For several months he had suffered from violent pain in the frontal and temporal region of the right side.

He was a professional man, but was unable to attend to his business because of the suffering. Examination of the nose showed enlarged

middle turbinate, blocking the upper part of the right nostril. The back part was adherent to the septum, and there was a purulent discharge. I could not sufficiently deaden the tissues with suprarenal extract and cocaine to break up all adhesions, and had to be satisfied with a partial removal of the enlarged turbinate, which was done February 5th. On the 7th, I attempted to break up the adhesions in the back, and continued the same process daily until the 11th instant, when I succeeded in removing another piece of the turbinate with the snare. On the 12th there was no pain, and he wished to return home for a while to attend to some neglected affairs. I applied some chromic acid to the remainder of the hypertrophied tissue, and allowed him to leave.

On the 18th, I received a letter from him saying he must return at once, as he had suffered intensely since the day after he left. I wrote dissuading him from an immediate return, as, in all probability, the recurrence of the pain was due to the effects of the chromic acid, and that in a few days when the eschar from the cauterization was thrown off he would get relief.

CASE IV.—A. R. S., 23 years of age, from Hinton, W. Va., came to me on the 22nd inst. He has suffered from headache all over the head for some time. Both middle turbinates were much hypertrophied, being tightly wedged against the septum, to which they were adhered in places. I removed the left one on the 23rd. The operation resulted in decided pain. On the 25th I attempted to remove the right one, but although mere contact of the instruments was not perceptible, any decided pressure on the turbinate gave great pain in the frontal and temporal region. The pain on the left side had decreased very perceptibly, and I am satisfied he will get entire relief when the operative work is completed.*

These cases are not only interesting but instructive, as they especially exemplify a paragraph of my former article, which is as follows:

"The most troublesome cases are those with dense hypertrophy of the middle turbinate, resulting in pressure on the septum and frequently adhesions, usually of an osseous character, between them. These adhesions must be done away with either by means of the saw, drill, cutting forceps, or otherwise, and the enlarged turbinate removed. *Blennorrhœa* of the

* This case went home for some days and returned without any discomfort on the left side, and with only slight pain on the right. The right turbinate was removed, and he went home entirely free from pain for the first time in three years.

* This case has since returned, had the operation completed, with a very satisfactory result.

ethmoid spaces is often an attendant complication, and adds to the difficulties. The treatment is consequently tedious, but is often satisfactory, even in these worst cases, and eminently so in the simpler ones."

Case I, although a bad one, was rapidly improved, not only in the local head pain, but in the mental and constitutional disturbances that had resulted from it.

In Case II, the after effects of the local irritation set up by the only partially successful operations, demonstrated the correctness of the diagnosis, and I am satisfied he would get entire relief if he would have the work completed.

Case III left me in two weeks, after months of suffering, with entire relief of all the distressing symptoms—the temporary recurrence of the pain being brought about by the application of chromic acid, and has probably long since disappeared. This is a common occurrence after the use of chromic acid, and one on which I laid stress in the paper before submitted.

Case IV is at present under treatment, but I am confident of the result being as satisfactory as could be desired.

I selected these four cases among more recent ones, as they are all of the same character, similar in the pathological conditions, and in the reflex effects of the nasal pressure, because they emphasize the facts pointed out two years ago, as well as a large number of cases could. As then stated, every one with enlarged turbinate or nasal pressure, from other causes, does not have headache or neuralgia. Why all, with the same pathological lesions, do not suffer from the same effects, can only be explained by a difference in the condition of the reflex centres, which, in some, are capable of resisting the malign influence of peripheral irritation, and in others are very susceptible to such influences.

Of course, constitutional conditions have much to do with this difference in the resisting power of the reflex centres, and therefore, in addition to the local treatment, any existing dyscrasie must be met by appropriate remedies.

As stated in my former article on this subject, I do not believe in promiscuous turbinotomy. I am satisfied that the operation is often done when it could be avoided, and when simple local treatment would be all sufficient; but when careful investigation shows annoying reflexes to be due to the nasal pressure, or to the presence of synechiæ, operative intervention is undoubtedly demanded, and cannot be done too soon.

200 East Franklin Street.

PATHOLOGY OF THE LIVER.*

By M. D. HOGE, Jr., M. D., Richmond, Va.

Professor of Histology, Pathology, etc., University College of Medicine.

That part of the subject which has been assigned me to-night for discussion is of such an extensive and important a nature that to undertake to speak even briefly upon each head would tax your time and patience too far; therefore, I have thought if your attention was directed to some of the most prominent, and, at the same time, most common affections of the liver, the time would be better spent.

That the liver should be a favorite and frequent location for parasites will be at once plain when we consider the fact that it, like that other important organ—the lung—has a double blood supply.

Entrance of organisms may be effected in three ways: (1) Through the systemic blood supply by means of the hepatic artery. (2) From the portal vein, which derives its blood from the branches coming from the stomach and intestines mainly. (3) From the common bile duct also communicating with the intestinal tract.

The amœba coli are associated with dysentery and hepatic abscess. Echinococci may occur anywhere, but over 45 per cent. of the cysts are found in the liver.

A form of *sporozoa*, the *coccidia*, form small yellowish nodules, which later become cystic in character, growing mainly from the bile ducts. *Typhoid bacilli* may remain for a long time in the gall bladder, and are possibly the cause of relapses from this disease. It is stated that the bacilli have been found in the gall bladder of a patient operated on for gallstones ten years after having had a case of fever.

It may be safely said that whatever form of abscess is met with in the liver it is due to micro-organism.

When an injury has been received over the liver, pyogenic bacteria in the blood may lead to abscess formation. Cysts suppurate at times from trifling injuries. Traumatic abscesses are single; pyæmic abscesses are usually multiple and due to some putrefactive source of infection in the tract from which the portal blood comes, as ulcer of the stomach or intestines, septic diseases of the pelvic organs or phlebitis due to calculus in the portal vein. Such abscesses are usually small and multiple in num-

*Read before the Richmond Academy of Medicine and Surgery, March 12, 1901.

ber, the walls are rough and ragged, and the surrounding liver tissue sodden with leucocytes and pus.

The form of suppuration known as tropical abscess is usually (75 per cent.) single, and is situated deep down in the right liver lobe, showing no trace of a definite wall. The disease is usually associated with dysentery due to amœba.

Cholangitis may be acute, chronic, or suppurative. The acute form is generally secondary to duodenitis, but may also result from gallstones, foreign bodies, parasites (hydatids), or bacteria. The mucous membrane of the bile ducts is swollen and secretes abundant mucus. If the duct becomes obstructed, there is retention of bile and jaundice. The chronic form may follow an acute attack. It leads to a constant and permanent overfilling of the bile ducts, and is accompanied by obstructive jaundice. The disease continues for a long time—it leads to a form of fibrosis, known as *biliary cirrhosis*.

Cholecystitis may result from cholangitis, or be due to the presence of gall stones in the bladder. It is sometimes associated with pyæmia, pneumonia and typhoid fever. The colon, typhoid and pyogenic organisms are frequently found. When it assumes a purulent character, empyema of the gall bladder results. Peritonitis sometimes occurs without rupture, or the discharge of pus may take place into the abdominal cavity or adjoining viscera.

When we recall the fact that the hepatic vein, after deriving its blood from the intra-lobular or central veins, which in turn are fed by the interlobular branches of the portal vein, empties into the vena cava inferior, we can well understand how congestion of the liver is produced mechanically by anything interfering with the flow of blood to the right heart. Under this head may be mentioned valvular disease, especially that of the mitral valve, pulmonary disease or compression of the upper part of the vena cava. In fact, sluggish hepatic circulation may be one of the first symptoms of a failing heart. Owing to the damming back of the blood, the liver is enlarged, assumes a much darker color, and generally there is jaundice; the latter is probably due to compression of the smaller bile ducts, the bile at the same time becoming thicker does not so easily flow in the ducts.

The centre of the lobule is of a deep red color, and the capillaries engorged with blood; external to this in the intermediate zone, there is a brownish yellow color due to bile staining, while the peripheral zone is pale and fatty

looking, the fatty degeneration being due to poor circulation and deficient oxidation. This characteristic appearance of the lobule has given rise to the term *nutmeg liver*, which so well describes it.

What might be almost called the opposite condition to the one just described is cirrhosis. Here, owing to the slow but sure extension and growth of connective tissue, there is really a contraction and induration of the liver. Among the primary causes are alcohol, overeating, a sedentary life and the gouty diathesis. As to secondary causes, they are syphilis, malaria, tuberculosis and bacteria entering the portal circulation from the intestines.

The common or coarse cirrhosis is recognized as that in which the growth of connective tissue accompanies the medium sized and finer branches of the portal vein. This form is constantly associated with ascites, when the abdominal cavity may contain from two to four gallons of fluid.

In some of the very chronic cases, the blood finds a short route from the portal vein to the vena cava inferior. The short circuit may take place by anastomosis—first, through the enlarged gastric and œsophageal veins; second, the veins of the round ligament; third, veins of the suspensory ligament; fourth, the inferior hæmorrhoidal veins; fifth, the veins of Retzius.

In cirrhosis, it happens that the irritant is conveyed by means of the hepatic artery, in which case the microscopic changes show a much finer cirrhosis than the former. Finally, a form of biliary cirrhosis is recognized, in which the liver, while indurated, is not smaller but somewhat larger than normal, due to congestion and retention of bile. Here, owing to the irritant being conveyed by the bile ducts, the connective tissue overgrowth accompanies them, leading to compression of the liver cells, and in course of time, by means of pressure atrophy, their death. The liver shows on a cut surface an intensely yellowish-green color due to bile staining. Jaundice is characteristic of this condition, and shows great persistence and stubbornness.

Under the head of *degenerations*, might be mentioned the most common—the *fatty form*. As to the cause, they are anæmia, the result of infectious diseases or of intoxicants. This is a chemical process taking place in the cell itself, which at once distinguishes it from fatty infiltration when the fat is brought from a distance and is deposited in or infiltrates the cells. The cells of the outer or peripheral zone first show large deposits of fat, which, after a time, break

up into a fine granular detritus, which, by absorption, leads to an actual diminution of the size of the organ.

Amyloid degeneration is a deposit of lardacein in the central or intermediate zone of the lobule. It occurs as a consequence of syphilis, tuberculosis, long standing suppuration or cachexia. It begins in the walls of the smallest arterioles and capillary branches of the hepatic artery, which present a thickened and translucent appearance. As the swelling increases, the liver cells are affected by the pressure, and this is manifested by atrophy and fatty degeneration. At times, in advanced cases the veins show the same changes. The liver cells are only secondarily affected.

As to *tumors* of the liver, *angioma* is most frequently met with in the human subject, but in cats' livers it is of common occurrence. *Carcinomas* are generally secondary to primary tumors occurring in the breast, alimentary canal, or uterus.

The pathology of the formation of gall stones is at present imperfectly understood. Advanced years, the female sex, secondary life and high living are all factors of importance. Inflammatory conditions with obstructions to the outflow of bile, desquamation of epithelium and bacterial decomposition of bile, seem to be among the causes.

Gall stones may be single or multiple, the gall bladder occasionally containing several hundred. They vary in size from minute granular particles to calculi several centimeters in diameter. *Biliary sand* is composed of bile pigments with calcium salts; the larger stones have a mucous or epithelial nucleus; mixed with inspissated bile, surrounded by a crystalline structure composed of cholesterine. Gall stones may lie in the bladder or ducts for a long time without giving trouble, or attacks of biliary colic may denote their passage. They may give rise to obstruction of any of the ducts (dilation and inflammation) or cause enlargement or cirrhosis of the liver. Ulceration into the abdominal cavity or some viscera with delivery of the stone occasionally occurs.

A CASE OF SEVERE MASTOID NEURALGIA.*

By JOHN DUNN, A. M., M. D., Richmond, Va.

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Severe mastoid neuralgia is, judging from my own experience, not of frequent occurrence. The majority of the text books on the ear either omit to mention it, or do so only in a manner which is of little assistance to the physician, who, for the first time, has a case under his care. Relatively, to empyema of the mastoid antrum, or osteitis of the mastoid process, with their complications, it is rare, and yet to the otologist who has intelligently watched one severe case of this trouble, bringing into anxious play his highest diagnostic skill to decide whether or not the symptoms indicate intra-cranial involvement, who has found every remedial agent save surgery of no avail, and who, finally, having recourse to the relatively simple operation of opening the mastoid process, has given perfect relief to his patient—to him the clinical picture is as complete as any vouchsafed by medicine to her earnest votaries.

In all, I have seen five cases of mastoid neuralgia.

The first occurred in a full blooded negro child, was bilateral, and was reflex from eruption of the third molars, which had not a normal amount of space for their growth. In this case the whole mastoid process including the outer part of the external auditory canal was the seat of the neuralgia, intense in degree; this region was extremely sensitive on pressure. The child complained of a similar area of hypersensitiveness over the external occipital protuberance. According to the mother this neuralgia had continued for months, and its severity could be greatly increased at any time by giving the child a drink of whiskey or of vinegar. Of course, here the indications were not for operation on the mastoid. The case, a clinic one, I saw only twice.

The next two cases I had the opportunity of seeing in consultation, and both occurred in delicate, frail, high-strung young women, who, at various intervals throughout their childhood had suffered from otorrhœa, which had resulted in the destruction of the greater part of their drum membranes and their auditory

* Read before the Tri-State Society, at Richmond, Va., February 27, 1901.

ossicles. In neither case was treatment, external or internal, of any avail, until the mastoid was opened. In one case only sufficient of the process was removed to allow examination of the antrum; in the other, the whole process was taken away. In neither case was any visible evidence of mastoid disease discovered, save that the processes in both cases were almost devoid of air cells, making the approach to the antrum a slow one. In neither case was pus found in the antrum or in any of the air cells of the process. Both cases recovered completely and rapidly.

The fourth case was that of a slender, delicate mulatto woman, sixty years of age. When I first saw her she had been suffering greatly from pain over the right mastoid for some weeks. Beyond this, I could get no satisfactory history of the case. The drum membrane, external auditory canal and process were normal in appearance. The mastoid, especially the region over the antrum, was very sensitive on pressure and the seat of almost constant aching, which, at times, was agonizing. Temperature normal. This patient was unwilling to have the mastoid opened. She was under my care at intervals for several months, during which time the pain seemed not to markedly decrease, try what I would in the way of blisters externally and drugs internally. She submitted several times to the application of a moxa to the process. She finally left me and sought treatment elsewhere.

The last case, the subject of this paper, was Miss X, highly intelligent, ambitious, high-strung young woman. In March, 1899, she had an attack of earache, complicating a head cold, which kept her in her room for ten days. There was no discharge from the ear, the pain in which gradually subsided, the aural region, however, remaining sensitive for a considerable time after the acute pain disappeared. In April, 1900, she had a similar attack of cold with earache, which was at this time so severe and so unyielding to remedies that her physicians advised that she have the mastoid opened, as they could suggest no other way by which relief could be obtained. There was, at no time, any discharge from the ear. For three months this pain in the mastoid region, the process being sensitive to pressure, continued severe. For three months more she was constantly conscious of discomfort, and of more or less pain in the region of the mastoid.

At the end of six months, while the pain and discomfort had, in a great measure, subsided, exposure to a cold wind or taking a slight cold would cause it to return. On De-

ember 25th, 1900, Miss X went for a drive. While out she felt the mastoid region becoming dull and heavy. This sensation continued all night. Next morning Miss X had a chill. The mastoid pain increased. This pain was deep seated and extended over the whole temporal region. During the next week she took her temperature several times, but never found it to be above $99\frac{3}{4}^{\circ}$; generally it was about 99° .

I saw her first on January 1st; her temperature was then 98° . The drum membrane and skin over the adjacent external canal were absolutely normal. There was not the faintest visible evidence of congestion. The mastoid region was the seat of a bleb, following the application of a blister. At this time, one week after the attack began, the patient was suffering intense pain, deep in the mastoid and radiating toward the temporal region. I did not see Miss X again for two days, when I found her suffering, in addition to the mastoid pain, greatly from stiffness of the left side of the neck and pain in the left shoulder; she was unable to turn her head; the blister had dried; there was no visible swelling over the mastoid, nor in any of its adjacent parts; the mastoid, however, was generally sensitive on pressure, the fossa and tip much less so than the region over and anteriorly adjacent to the upper end of the digastric groove. Drum membrane still showed no sign of congestion. Temperature, 98° ; Pulse, good. Patient put to bed, and sodium salicylate given every two hours.

January 4th, pain in the neck is less; temperature continues subnormal.

January 5th, patient now has very little pain in the neck; there is, however, little, if any, diminution of the pain subjectively and on pressure in the mastoid, especially marked in the latter case over the upper end of the digastric groove. Patient begins to be exhausted from the long continued unremitting pain. Drum, normal; hearing, normal. No external evidences over the mastoid of infiltration or œdema.

January 7th, pain continues unabated. Stiffness of neck returned. Temperature remains subnormal. Patient consents at last to having the mastoid opened.

The usual incisions were made over the mastoid, which was then laid bare. The cortex was normal in appearance. The next step was to remove a strip of the cortex, one-third of an inch wide, from the temporal ridge to the tip of the process. The cells everywhere were found to contain nothing save air; those in the upper and lower thirds of the process

were normal in color; those occupying the middle third, however, were markedly injected, and I found, in biting away the cells, that in places the bone separated from the lining mucous membrane.

This injected area corresponded with the area of the greatest sensitiveness to pressure, and is in so far of considerable interest. The antrum was opened and found to be, so far as the naked eye could judge, in every way normal. The tip and large proportion of the cells in the process were removed. The wound was closed over its entire length, save that at the bottom room was left for a strand of gut which served for drainage. This was removed twenty-four hours later and a stitch put in. On the sixth day the stitches were removed. The wound healed by first intention, and the resulting scars are trifling. The neuralgia disappeared with the operation—the discomfort experienced during the process of healing being, according to the patient, “entirely different in character from that experienced before the operation.”

Such, gentlemen, is the clinical history of a case of mastoid neuralgia; and these cases increase in interest just in proportion to the intelligent care with which one studies mastoid inflammatory conditions and their possible sequelae.

It is no easy thing in all cases of mastoid pain, to decide at once the exact location of the diseased area and the character of the disease causing the pain. In most cases of mastoid disease, the indications for operative procedures are clear enough. In some, however, no matter how skillful or how experienced the otologist, he will be unable to make up his mind to advise unqualifiedly that an operation is demanded before some symptom develops which shows him all too clearly that his delay has been too long.

I recall here the case of a small child which had, when I was called in, acute bilateral purulent otitis media. The discharge from both ears was free, and yet the child continued to suffer intensely with a pain which she referred to the pit of her stomach—“I’ve got such a bad pain in my stomach”—was her constant cry. The pain, accompanied by fever, which lasted for several days, I felt sure was a reflex one, caused by intracranial trouble, and yet, examine the child as I would, I could discover no symptoms which would guide me to even a probable diagnosis as to its real seat. I watched most carefully for symptoms of brain abscess, of meningitis, of sinus thrombosis. No definite symptom appeared. No

outward sign of mastoiditis on either side. Both ears appeared equally, and very sensitive on manipulation. The child was too young to describe her subjective symptoms. Finally, one of the diagnostic signs of leftsided thrombosis of the petrosquamosal sinus appeared, and a few hours later symptoms of brain abscess and meningitis. Here the antrum was not involved; the intracranial infection had taken place through deficiencies in the tegmen tympani.

It is the watching one or two such cases as this one that makes the careful physician, when in the presence of continued mastoid pain, anxious until he has interpreted its meaning.

In the case the subject of this paper, we have the history of three severe attacks of pain in the mastoid region as a sequela in each instance of taking cold. In none of the three attacks was there any discharge from the external canal, no rupture of the drum, which throughout the last attack remained in every particular normal. The pain in the mastoid region, bad during the first, grew worse and worse at each subsequent attack. There were no concomitant nose and throat inflammatory symptoms during the last attack, in which the force of the inflammation exerted itself within the mastoid process. The pain in the mastoid after the second attack continued bad for three months; for three months longer the patient was constantly conscious of a fulness and of dull pain in the process, which remained oversensitive on pressure. At the end of six months this constant discomfort, in a large measure, had subsided, to return with any exposure to cold, or whenever the patient took cold. This condition of affairs continued until the attack which resulted in the operation. Not only was the mastoid process spontaneously the source of great pain, but under pressure was excessively sensitive, especially over the middle third, which was much more sensitive than either the region of the fossa or tip. Again, it is of great interest to note that the middle third of the mastoid cells was markedly congested—a condition not found in the cells of either the upper or lower thirds. Nowhere in any of the cells, antrum or middle ear, was there any visible exudate.

Again, the temperature, which for the first three or four days was from half to one degree above normal, remained from January 1st to January 6th, subnormal, at times being as low as $96\frac{1}{2}^{\circ}$. There was a slight rise of temperature the day of the operation. The pulse was good. On the supposition that possibly we

had to do with a rheumatic affection of the mastoid, salicylate of soda, in large and frequently repeated doses, was tried. This seemed for the first two days to control to a slight degree the pain and to lessen the stiffness in the left side of the neck. Later, its administration was without effect. The pain returned and became so great that slight manipulation of the mastoid would nauseate the patient.

Sattler, in the *Archives of Otolaryngology*, Vol. XXVII, has given the fullest and most interesting account of uncontrollable neuralgia of the mastoid with which I am acquainted. He divides these cases into two classes—those of “purely neurotic origin,” and those “in which surgical intervention leads to the discovery that a former, and in most instances remote pathological process, has been present and left traces.” Cases in the first class show to the eye no pathological changes whatever; those of the second, either “hyperostosis or sclerosis of the cortical region with elimination or complete obliteration of the pneumatic spaces and antrum,” or “rarefaction of the superficial or deeper cells, with atrophy of the cortex or of the lining membrane of the cells,” or, lastly, “no apparent lesions of the cells, but the presence of desiccated bone or other products in the antrum or posterior pneumatic cells.”

The case here reported comes into none of the classes mentioned by Sattler. An area of congestion is found, the forerunner of what well recognized pathological condition of the mastoid I would not undertake to state; possibly the pain was rheumatic in character and similar to the rheumatic neuralgias of the frontal sinus. At all events, a pathological change we had to do with, and not a purely neurotic trouble.

In conclusion, severe neuralgia of the mastoid is met with from time to time; it may be reflex or strictly local in character; it may exist either with or without other visible concomitant conditions to suggest its cause; generally, there is a history of a more or less remote, acute—be it purulent or catarrhal—inflammation of the middle ear and its adnexed antrum; the neuralgia appearing afterwards when the patient takes cold; it sometimes complicates simple abscess of the attic or acute empyema of the mastoid antrum and forces the surgeon to explore the mastoid, although in similar cases without this neuralgia he is satisfied with opening Schrapnell's membrane; it is in many, if not most, instances, uncontrollable by other than surgical means, which consist in all save the cases with a reflex origin for the neuralgia in open-

ing the mastoid process, to which it readily yields in nearly all cases. In some cases, after persisting for weeks, the severity gradually subsides; the neuralgia has, however, a tendency to recur each time the patient is exposed to or takes cold. We have no way at present to accurately foretell in what condition we shall find the contents of the mastoid process in these cases. It is well to remove the cortex over an area one third to half an inch wide extending from the region of the fossa to the tip before mutilating the cells that we may in each case examine them carefully.

The extent to which the cortex and air cells should be removed, will depend upon the conditions found when they have been exposed. In those cases “in which a purely neurotic origin can be assumed, the operation of opening the mastoid (Schwartz) affords almost certain relief. It is not even necessary in all cases to penetrate to, expose or break down the deeper pneumatic cells of this locality,” (Sattler). And, lastly, the external incisions, unless we find contra-indications, should be closed by sutures at the time of the operation—*i. e.*, we should not treat the wound as an open one.

Proceedings of Societies, etc.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPÆDIC SURGERY. Meeting of March 15, 1901. George R. Elliott, M. D., Chairman (48 E. 26th Street.)

Dr. Homer Gibney presented a boy, æt. 11 years, who had had *infantile spinal paralysis*. There was *equino-varus* of the left foot with *slight cavus*. According to previous history, *astragalectomy* had been performed five years previously without beneficial results. November last, Dr. Gibney exposed the tarsal bones, curetted the cartilages, sutured the wound and applied a plaster-of-Paris bandage. The result was that the foot was shown at a right angle with slight motion.

Acute Hip Disease.

A second patient, a girl 6 years of age, was shown by Dr. Gibney. She was suffering from acute hip disease when first seen in October, 1899. A brace was applied, and the child put to bed. Her hip became worse; the hip was stretched, and a plaster-of-Paris spica was applied. An abscess developed, and was opened

January, 1900. Improvement followed the incision, but, owing to a profuse discharge, fever, and loss of flesh, the hip was excised April, 1900. The child improved rapidly after the operation; a small sinus remained.

Paraplegia Complicating Spinal Caries.

Dr. Gibney presented a third patient, a girl 9 years of age. She was admitted to hospital December, 1900, with the history that her disease followed an attack of diphtheria five years previously. A plaster-of-Paris jacket was worn for six weeks at onset of disease, and then for eighteen months she wore a Taylor brace with head rest attachment. In 1897, she had an attack of paraplegia, which lasted six months. One year ago, she had a second attack, which persisted at the time of admission into the hospital. There was at that time paraplegia, incontinence of urine, increased reflexes, with marked ankle clonus. December last the child was put to bed wearing a plaster-of-Paris jacket with head extension. The jacket was reapplied January, 1901, with head extension and plaster straps over the shoulders. A third jacket was applied February 21. Improvement was gradual, and child was shown with fairly good voluntary use of legs.

Dr. Royal Whitman said he hardly thought it fair to say that the paraplegia developed while under treatment by the Taylor brace. The child had come under his observation four years before with very slight deformity. The child was under poor control, and had been through many hands, including osteopathy. Recently he had again seen her, and referred her to the hospital for ruptured and crippled. He would suggest that the case was one that illustrated ineffective treatment rather than of mechanical treatment of any form.

Dr. Gibney said he simply showed the patient to demonstrate the effect of a well applied apparatus. As a matter of fact, the paraplegia did develop while the child was wearing a Taylor brace, but was under no one's medical or surgical care. The brace was ill fitting—in fact, worse than useless.

Coxa Vara.

Dr. W. R. Townsend presented a boy 15 years old, who came to the hospital for ruptured and crippled one month ago, with the history that without any apparent cause one year previous he began to have difficulty in walking, and was easily fatigued. The difficulty in locomotion had steadily increased. The limbs were equal in length, and the X-ray revealed a very

marked case of coxa vara. There was limitation of motion, and the great trochanters were one inch above Nélaton's line.

Limitation of motion, especially in flexion and extension, was very great. There was not over 15 degrees of motion on the right side, and none on the left. Standing, the knees could not be separated more than three inches. The patient sat with difficulty. A radiograph was shown. He asked if any member of the Section had seen a case of coxa vara with so much limitation of motion.

Dr. Henry Ling Taylor replied that it was more severe than any he had seen.

Dr. Whitman said that limitation of flexion was always present in these cases, although limitation of abduction was the more marked feature. He stated that some years ago he had presented a patient before the Section with even more marked disability than the present one. In that case, the deformity progressed until the patient was totally disabled. After the acute symptoms subsided, he performed an osteotomy on one femur with so good a result that the operation for the lesser deformity was never made. The man finally recovered perfectly; motion returned as far as flexion and extension were concerned. He believed that operative treatment would completely relieve the condition.

Dr. A. B. Judson asked what was the sequel to such conditions? What became of these patients after they passed from the surgeon's observation?

The Chairman replied that the subject had been rather fully discussed at the last Clinical Meeting of the Section, and the conclusions arrived at were that very marked improvement followed osteotomy properly performed after subsidence of acute symptoms. In the absence of operation, there is more or less permanent disability; condition commonly remained in *statu quo*. He referred Dr. Judson to the report of the Section Proceedings (January 18, 1901).

Spondylose Rhizomelique.

Dr. Townsend presented a man, 35 years old, who, five years ago, began to have stiffness of the back and difficulty in walking. He had two attacks of muscular rheumatism. He had no pain excepting in the upper part of the back and when sitting. These symptoms increased until the present time; he was obliged to use crutches. The thighs were flexed on the pelvis about 20 degrees; extension and flexion were much restricted. He regarded the lesion of the hip joint and the spinal stiff-

ness as typical of spondylose rhizomelique. He suggested a plaster of Paris jacket as of some service.

Dr. George R. Elliott said errors of diagnosis were not infrequently made, and the disease mistaken for one of the varieties of chronic spinal rheumatism; frequently great spinal pain and hyperalgesia accompanied the progress of the disease, subsiding after a while. He mentioned a patient he had seen a few years ago, before the disease had been carefully described, where he examined under an anæsthetic, owing to the great degree of pain present. The pain subsided after three or four years—the marked ankylosis so characteristic of the central type of the disease remaining. This patient was shown before the Neurological Society by Drs. Sachs and Fränkel (October, 1899.)

Dr. Townsend showed two radiographs, one showing union of a fracture of the neck of the femur after use of a long traction hip splint (patient shown before Section January 11, 1901), the other radiograph was of a case of double dislocation of the hip joint which had been treated by the bloodless reduction eight weeks before. The picture was taken through the plaster of Paris splint.

Congenital Club-Foot.

Dr. Judson presented a boy, 5 years old, first seen when there was marked and resistant typical double deformity which had been reduced by the painless, continuous leverage of a simple brace applied with adhesive plaster, and often removed for manipulation of the feet; later a walking brace had been used; all the apparatus used was of a common kind with a single invisible upright. The braces were made of tractable metal, allowing change from the deformity to the normal and later to over-correction. The feet followed these changes through force of adhesive plaster, and later by body weight. At the age of fifteen months the deformity had disappeared. Treatment was resumed after seven months interval, the outer border of the feet having become slightly callous; walking braces were applied and worn for twenty-two months, finally laid aside January 15, 1900. On presentation, the child walked and ran with normal ability and without defect in his gait. The only remaining defects were slightly shortened Achilles tendons, but this was slight as he could even walk on his heels.

In this affection, the following were to be considered as favorable elements:

1st. The certainty of rapid growth.

2nd. The plastic or formative condition of the parts.

3rd. The absence of body weight for eighteen months.

4th. The certain effect of continuous leverage.

5th. The weight of the body applied on the right side of the plane between varus and valgus, in virtue of which the child could stamp his foot straight.

6th. The absence of necessity for haste.

7th. Use of tractable metal. An unfavorable point was the postponement of treatment till the child was two years old.

Dr. T. Halstead Myers congratulated Dr. Judson on his excellent result, and said that when the child could be kept under observation and control such results could be obtained. In all cases, whether tendons were divided or not, subsequent control was necessary for a year or two at least.

Dr. R. A. Hibbs also commented on Dr. Judson's good result and asked if there had been much internal rotation, as that made treatment difficult or otherwise.

Dr. Whitman said that he could not agree with the last speakers that Dr. Judson's case should be considered at all remarkable as to result; it was an average case and average result. It was evident that there was still a slight tendency to varus dependent upon the slight equinus which still persisted. This he thought illustrated the weak point in Dr. Judson's scheme of treatment, that having over-corrected the varus deformity, he depended upon the weight of the body to overcome the residual equinus, whereas this deformity should be as thoroughly over-corrected during active treatment as the varus.

Dr. Judson replied that a further elaboration of the principles of continuous leverage would have secured a normal tendo-Achilles and completely corrected the equinus; while the result was not absolutely perfect, he considered it as supporting the statement that an operation or violence was, in this affection, a confession of failure at some time in the history. In practice, the resistance of tissues was one of the lesser difficulties to be overcome in the management of cases of this kind. Greater obstacles were unreasonable haste to see a result and mistaken reliance on rapid and easy methods.

Dr. Taylor regarded the result very creditable, but did not think that all danger of a relapse was passed. He did not agree with several of Dr. Judson's statements which implied that operations were never indicated; opera-

tive treatment was often unsatisfactory, if not combined with, and followed by mechanical treatment; each method had its proper field and often both were needed. While himself inclining to conservatism, he considered Dr. Judson's remark in disparagement of operative interference much too sweeping.

Funnel Chest.

Dr. Judson presented a man, 71 years old, having a deformity, which, although rare, had been described by a number of observers. It was a curious malformation, entailing no great disability, of uncertain origin and calling for no treatment. From an angular projection at the junction of the manubrium and the gladiolus, there was a continuous depression till the deepest place was reached at the end of the xiphoid appendix. The cartilages of the lower ribs were prominent as usual on each side, and the front of the chest, although somewhat flat, was normal, except for this funnel-like depression which began on each side of the nipple line and was cup shaped at the bottom with a depth of $1\frac{1}{2}$ inches, unchanged by expiration (31 in.), or inspiration (34 in.)

The man said he had always been so and had never known of another person similarly affected in his family. He had eighteen brothers and sisters. He had been fond of athletic sports in his youth, was a shoemaker by occupation, and had enlisted in the military service in 1862. There was no history or sign of rickets or spinal disease. He had been free from notable diseases of the chest or otherwise, although years ago he had been told that he had serious chronic lung disease.

Dr. H. S. Stokes said it was difficult and frequently impossible to make a correct physical diagnosis when chest deformity existed. He cited a case of Pott's disease where the patient had been told four years ago that he had pulmonary tuberculosis and a bad prognosis had been made. He had frequently examined the sputum of this patient with negative results; all signs of lung involvement disappeared. He cited two cases of lateral spinal curvature which had lately come under his notice where errors of diagnosis had been made. In one, the diagnosis of tubercular consolidation was made, which turned out to have been only a slight bronchitis.

Dr. Myers presented a case of polio-myelitis in a boy 13 years old; the disease dated from early infancy; the case was exhibited to show the muscular changes. The right quadriceps was completely paralyzed, and the right ligament patella was one inch long; the left quadri-

ceps was fairly strong, and the ligamentum patella $2\frac{1}{2}$ inches long. Osteotomy had been performed on the right side for a recurring genu valgum which had been caused by the greater power of the external hamstring muscle. The muscle was split and one-half transplanted and given to the internal hamstring and the knock-knee did not recur. He called attention to the marked rotary lateral curvature of the whole dorsal spine with convexity to the left or the stronger side, while concavity was toward the side of paralysis of the lower extremity and erector spinæ muscles. In club-foot due to polio myelitis, the shortening always occurred in the stronger or least paralyzed muscles; by analogy, the erector spinæ muscles on this boy's left side, those least paralyzed should be contracted, and they were. This drew the entire thorax strongly to the left and downwards. To maintain his equilibrium, the boy had thrown his head and shoulders to the right by voluntary effort, inducing the form of curvature present.

Congenital Dislocation of Hip with Fracture of Shaft of Femur.

Dr. Elliott presented a five months' old baby sent to him three weeks previously for diagnosis. He found dislocation of left hip and suspected fracture, both of which were confirmed by an X-ray picture. According to the history, birth of the child had been very difficult—the breech had presented and great difficulty had been experienced and instruments used. No difficulty was anticipated in reducing the dislocation; the fracture of the femur, however, complicated the matter. He said he proposed to attempt reduction under an anæsthetic, and if any great difficulty presented itself, wait till later and do it by the Lorenz non cutting method.

Congenital Dislocation of the Patella.

Dr. Elliott showed a patient—a young man 20 years old—with dislocation of the right patella. His relatives had told him that it was first noticed two days after his birth; he wore apparatus at various times, but nothing since 1888. The patella slipped into place on extension; but on flexion, slid over the external condyle of the femur, even if force was applied to hold it; there was two inches of atrophy of the right thigh; a slight degree of knock-knee existed. All that the patient complained of was a sense of weakness and uncertainty of the leg. The patient wanted to know if the condition could be remedied without leaving him with a stiff knee. He

preferred his present condition of slight disability to a stiff knee.

Dr. Hibbs said that he recalled a case of outward dislocation of both patellæ in a man æt. 35 years. The condition had existed since he was three years of age; there was nothing to suggest the cause save knock-knee, which existed to a marked degree.

Dr. Townsend said he had shown a girl ten years ago who could at will dislocate both patellæ. He advised an operation, which would change the direction of the ligamentum patella at its attachment to the tibial tubercle by moving the tubercle and re-attaching it so that the patella would be kept in the intercondyloid space. Re-attaching some of the fibres of the varus might also be necessary to prevent the pulling of the patella to one side.

Dr. J. P. Fiske suggested correcting the genu valgum present by an external osteotomy above the knee joint, thus converting the knock knee into a mild bow leg. This would not only hyper correct the weight bearing line, but also give the patella and attached muscle a chance to act in a proper line.

A Case of Spondylolsthesis.

Dr. Taylor presented a man 19 years old whose occupation was loading and unloading furniture. Last December he sought treatment for weakness of his back and occasional pains in the lumbar region at night, after hard work. About three years ago, he slipped on the ice and fell heavily on the buttocks. He worked the following day. He experienced no inconvenience for some time, but within a few weeks he noticed a decided projection—lower part of spine—which he still has. He thinks it is less now than formerly.

Examination revealed a marked projection of the fifth lumbar spine and a deep depression above it. At the bottom of this depression could be felt the fourth lumbar vertebral spine one-half inch in front of its normal position. The patient could bend forward and touch the floor, and showed none of the characteristic attitudes of the rigidity of spondylitis.

He was strong and able to work. There were no rectal or bladder symptoms or lower extremity paralysis.

Dr. Whitman said that he did not consider cases of injury to the spine as so uncommon as was generally believed. He cited four cases he had under observation of fracture of the spine, and noted that the case presented was one of traumatic origin.

Dr. Taylor said he did not think it fair to

class the case among ordinary fractures of the spine. This case belonged to a distinct class of rare occurrences, and consisted in a sliding forward of the spinal column at the junction of the fourth and fifth vertebræ. It often occurred between the fifth lumbar vertebra and sacrum. He had seen only two similar cases—both in men, and one non-traumatic. In European literature, the affection had chiefly been studied in women in connection with parturition.

Dr. Whitman said he did not mean to classify this case with those of ordinary fractures which, as a rule, resulted in a kyphosis, but that he considered the case in question one of fracture displacement of traumatic origin.

Dr. Myers remarked that he had seen two cases, both traumatic; they were in women, and in one the pain was greatly exaggerated after the birth of the child; in the other, after lifting. Both were relieved by the constant support of a spinal assistant brace with a broad abdominal band.

Dr. A. E. Gallant showed a model of the triangular, pasteboard *Van Arsdale splint*. He stated that this splint was used in children in fractured femur with excellent results; he had reported thirty three cases himself. It was light, could be adjusted, leaving the child in a comfortable position, and in young infants it was out of the way of soiling. The children were not confined to bed, but could sit up and play without hindrance.

Laxative Antikamnia and Quinine Tablets

Have become justly popular—in fact, one of the standard remedies, particularly in influenza. *Dr. T. D. Crothers*, Superintendent of Walnut Lodge for the treatment of alcoholic and opiate habitues, Hartford, Conn., in the *Quarterly Journal of Inebriety*, January, 1901, writes: "We have never seen a case of addiction to antikamnia; hence we prize it very highly as one of the most valuable remedies for diminishing pain without peril. We have used it with excellent results to quiet the pain following the withdrawal of morphia. The object of the antikamnia in "Laxative Antikamnia and Quinine Tablets," beside its antipyretic and analgesic effect, is the prevention of all griping, nausea, and other unpleasant effects generally produced by purgatives when administered alone."

Book Notices.

Text-Book of Histology *Including Microscopic Technic.* By A. A. BOHM, M. D., and M. von DAVIDOFF, M. D., of the Anatomical Institute in Munich. Edited, with Extensive Additions to both Text and Illustrations. By G. CARL HUBER, M. D., Junior Professor of Anatomy and Director of the Microscopical Laboratory, University of Michigan. *Authorized Translation from the Second Revised German Edition.* By HERBERT H. CUSHING, M. D., Demonstrator of Histology and Embryology, Jefferson Medical College, Philadelphia. With 351 Illustrations. Philadelphia: W. B. Saunders & Company. London: 161, Strand, W. C. 1900. Svo. Pp. 501. Cloth. \$3.50 net.

In the preparation of this American edition, the editor states that he has retained substantially all the subject matter and illustrations of the second German edition, although certain minor changes in the arrangement of the text have seemed desirable. The sections on motor and sensory nerve endings, and on the spinal and sympathetic ganglia, have been greatly expanded, and the innervation of glands and organs has been considered much more fully than in the original. Because of their importance, the glands with internal secretion have also been treated at more length. As now published, it is hard to see how the work can be improved upon, in text or otherwise, unless the size is to be increased. In the arrangement, the contents are divided into three great divisions—1. Introduction to Microscopic Technic; 2. General Histology; 3. Special Histology; each having its own subdivisions. A feature worthy of particular note is the special technic following a description of each of the various tissues. The drawings are clear and numerous, over one hundred illustrations, mostly from original drawings, having been added.

System of Practical Therapeutics. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. *Second Edition. Revised and Largely Rewritten.* Vol. I. *With Illustrations.* Lea Brothers & Co. Philadelphia and New York. 1901. Svo. Pp. 856. Cloth.

The first edition of this System, issued only ten years ago, was up to date, but is now so far behind the times that the therapeutics of many diseases, etc.—(over thirty being named in the preface), had to be re-written. In fact, many new subjects have been introduced, and their arrangement has been materially changed.

The Contents of this Volume I refer to General Therapeutic Considerations, Prescription Writing, Remedial Measures other than Drugs, Preventive Medicine, and the treatment of Diathetic Diseases and Diseases of Nutrition.

After some chapters relating to general sanitation, general exercise, electro-therapeutics, hydrotherapy, climate, mineral waters and their medicinal uses, massage and Swedish movements, disinfection, etc., we find some excellent discussions of nutrition and foods, including the treatment of obesity and leanness, the rest cure for neurasthenia and hysteria. Then we come to the therapeutics of diseases of the thyroid and thymus glands, including myxœdema, cretinism, Graves' disease and obesity; chronic articular rheumatism, rheumatoid arthritis and gout; diabetes mellitus; diseases of the blood; present treatment of syphilis; tuberculosis; scrofulosis; and scurvy and scorbutus. Of the twenty contributors to this volume, only one is from a Western State, and none is from a Southern State. But as all of the contributors are men of distinction in this country and abroad, we may look upon the volume as authoritative teaching. The work is to be completed in four volumes of about equal size. Each volume is well indexed.

Introduction to the Study of Medicine. By G. H. ROGER, M. D., Professor Extraordinary in the Faculty of Medicine of Paris, etc. *Authorized Translation,* by M. S. GABRIEL, M. D. *With Additions by the Author.* New York: D. Appleton & Co. 1901. Cloth. Svo. Pp. 545.

The title of this book tells its own story, and yet it is by no means an elementary work. It is as much for the practitioner as the college student. It is, in brief, an application of the fundamental sciences to clinical procedures—and attempts the explanation of the effects of disease from the causative lesion. For instance, the statement is made that "organic affections are simply cicatrices. Disengaged from their initial cause, they become autonomous, and develop on their own account."

The practitioner of many years may turn almost to any chapter and derive suggestions which help him to understand facts he has often observed, but has not well understood. Of special use to the practitioner are the chapters on Examination of the Sick; the Clinical Application of Scientific Procedures; Questions to be Solved in Complete Diagnosis, and in the Matters of Prognosis; and the last, but not the chapter of least importance is on Therapeutics, wherein doctrines, marked by common sense,

are forcibly impressed. Beside the full Table of Contents, the Index gives great help when one wishes to refer to a particular disease, etc. The publishers have done their part finely.

Systematic Treatise on Materia Medica and Therapeutics. *With Reference to the Most Direct Action of Drugs.* By FINLEY ELLINGWOOD, M. D., Professor of Materia Medica in Bennett Medical College, Chicago, etc. *With a Condensed Consideration of Pharmacy and Pharmacognosy.* By Prof. JOHN URI LLOYD, Ph. D., Late President American Pharmaceutical Association, etc. Published by the Chicago Medical Press Co. 1900. 8vo. Pp. 706. Cloth, \$5; Sheep, \$6.

While conceding a high value to the work under notice, we are unable to find that this edition has any advantage over that of 1898. It appears to be a reprint, without alteration, addition, or revision. In view of the great additions in the past few years to the number of articles used in medicine, it seems to us that some effort ought to have been made by the author to incorporate a section on the most useful of them. The striking feature of this book is the giving of the direct action of each remedy as applicable to distinct conditions of disease—teaching the student a *system of direct medicine*—highly satisfactory to both the inexperienced physician and to the busy practitioner. The book contains a great deal of plain, practical information that is very useful to the doctor at the bedside. We can only repeat our expression as given of the edition of 1898—that it meets the important uses of the profession.

Text-Book Upon the Pathogenic Bacteria By JOSEPH McFARLAND, M. D., Professor of Pathology in the Medical Chirurgical College, Philadelphia, etc. *With 142 Illustrations. Third Edition. Revised and Enlarged.* Philadelphia: W. B. Saunders & Co. 1900. Cloth. 8vo, Pp. 621. \$3.25 net.

This text book needs no introduction to our readers; for, as far as our influence goes, it has become the standard work on the subject "for students of medicine and physicians." Such advances, however, have been made in the various fields of bacteriology within the past four or five years—since the first edition was published—that the author has found it necessary to re-write a number of the chapters, and has, indeed, inserted almost completely whole sections on new subjects. The principal advances have been noted especially under the headings of tuberculosis, diphtheria, tetanus, plague, etc.—subjects of live interest to the American physician. Matters of public health

and industries, the proper source and preparation of water for public use, the protection of the consumer against polluted milk, the protection of canned goods from contamination during manufacture, etc., are all subjects which have received a greater or less degree of attention—as such subjects become related to bacteriology. This third edition is so nearly a new book, well arranged, well illustrated, and attractively issued that all interested in the subject of pathogenic bacteria should secure a copy of this edition to keep "abreast of the times."

Rhinology, Laryngology and Otolaryngology—Their Significance in General Medicine. By E. P. FRIEDRICH, M. D., Privat-docent at the University of Leipzig. *Authorized Translation from the German.* Edited by H. HOLBROOK CURTIS, M. D., Consulting Surgeon to the New York Nose and Throat Hospital, and to the Diphtheria and Scarlet Fever Hospitals. Philadelphia and London: W. B. Saunders & Co. 1900. Cloth. 8vo. Pp. 348. \$2.50 net.

The wonder is that such a book as this has not before been attempted, for it discusses matters precisely along the path wanted by the general practitioner as well as the specialist in Rhinology, Laryngology and Otolaryngology. It is not a text book for students, but is a work of interest and great importance to the practitioner. It treats of the relationship of general diseases to those of the nose, throat and ear—of the symptomatic manifestations of general diseases as they show themselves in the respiratory tract—and of the reflex neuroses of the ear and air-passages, and their diagnostic significance. To get a correct idea of the book requires its reading. And the general practitioner who reads any of its instructive chapters will see that it is the book he has long wished for. The specialist, of course, if he seeks to keep up with the study of the relationship of diseases of the nose, throat and ear to diseases of other organs or parts, or even of such general diseases as typhoid fever, etc., must own the book and thoroughly master it. The price is cheap enough to leave but few with excuse for not having this great book.

Guide to the Instruments and Appliances Required in Various Operations. By A. W. MAYO ROBSON, F. R. C. S., Senior Surgeon to Leeds General Infirmary, etc. *Second Edition.* Cassell & Co., Limited. London, Paris, New York (7 and 9 West 18th Street), and Melbourne. 1900. Cloth. 16mo. Pp. 64. Price, \$1 net.

The compilation of these lists of instru-

ments, etc., required in various operations has been found very useful both in private and hospital work. The surgeon or his assistant need but to refer to this book to get everything ready for a given operation, without taxing his memory each time to see that everything is provided for the operation. It is a good list to have in a hospital, or in a surgeon's office. But in addition to such lists of instruments, etc., Mr. Mayo Robson describes a "reliable method of preparing catgut for sutures or ligatures." He writes that "an extended experience of catgut thus prepared has given me the utmost satisfaction in my surgical work." A very complete Index is appended, which greatly assists ready reference. The price of the book sounds a little high—although it is worth every cent of the published net charge.

The Year-Book of the Nose, Throat and Ear.

The Nose and Throat. Edited by G. P. HEAD, M. D., Professor of Laryngology and Rhinology in the Post-Graduate Medical School of Chicago. *The Ear.* Edited by ALBERT H. ANDREWS, M. D., Professor of Otolaryngology in the Post-Graduate Medical School of Chicago, etc. The Year-Book Publishers, 100 State Street, Chicago. 1901. Cloth. 8vo. Pp. 416. \$2.

The effort is made in this volume to make a fair presentation of the progress made in nose, throat and ear-work for the past year. The collection of such volumes will sooner or later make the series an almost invaluable library for the specialist in these departments. As indicated in the title of this Year-Book, Dr. Head has edited the first 226 pages on the *Nose and Throat*. The remainder of the book—over 120 pages—is on the *Ear*, and is well-edited by Dr. Andrews. The Index is remarkably full, and a great help—both with reference to the subjects and the authors. It is a book for the specialists on nose, throat and ear diseases, etc.

No Yellow Fever in the Philippines.

Dr. F. A. Meacham, President of the Board of Health at Manila, calls attention to a statement in our issue of December 27, 1900, regarding the presence of yellow fever in the Philippine Islands. He writes: "There have been no cases of yellow fever in the Philippines during the year 1900, and from all obtainable information this disease has never gained an entrance to the Archipelago."—(*Boston Med. and Surg. Jour.*, April 11, 1901.)

Editorial.

Osteopathy in Virginia.

Indictment has been brought against two Richmond incomers, signing themselves, "Edwin H. Shackelford, D. O.," and "Geo. E. Faut, D. O.," for violation of the Virginia law "regulating the practice of Medicine and Surgery." These "Doctors of Osteopathy" claim that they are neither physicians nor surgeons, and that they do not offer to practice as such; that they use no drugs or medicines, nor knife or instrument. They claim to be full graduates of a College of Osteopathy and to practice this science [?]; and therefore that no examination by the Virginia State Board of Medical Examiners, nor permit from that Board to secure a license, is required under the law of them. They state that "if, in the opinion of the honorable State Board of Medical Examiners, we come within the provisions of the statute, and there are graduates of Osteopathy among its membership who can properly examine us; and if we pass the examination, the Board will issue a license to us, we will waive any right we may have to pursue our profession without license, and appear for examination upon the science of Osteopathy." The indictment is brought practically by the Virginia State Board of Medical Examiners, through its Examiner for the Third Congressional District, Dr. J. E. Warriner, Brook Hill, Va., and by Dr. Landon B. Edwards, Richmond, representing the Richmond Academy of Medicine. These prosecutors are practically sustained by the Medical Society of Virginia, according to resolutions adopted at the Charlottesville Session, 1900.

"Osteopathy" is, relatively speaking, a new word, defined in Duane's *Medical Dictionary* (edition, 1900), as "a system of medicine which regards all diseases as due to defects in the bones or joints and remediable by manipulation of these parts." "Prof. Thomas Bassett Keyes, M. D., of Chicago, himself an osteopath, in his book on "*Osteopathic Treatment in the Hypnotic State; or, Suggestion Massage*," "entered according to Act of Congress, in the year 1899," etc., gives the following definition: "Osteopathy is the science of treating diseases by manipulating different parts of the body, particularly the nerves of the body." He further states: "While osteopathy is a new name, it was largely practised in Ancient China; and during the period from three to four thousand years before Christ it constituted the most valuable part of the whole system of the healing art."

The Virginia law (as amended by the General Assembly, Session 1899-1900), distinctly says, "Any person shall be regarded as practicing medicine or surgery for compensation within the meaning of this act," * * * "who shall prescribe for the sick or those needing medical aid, and shall receive therefor money or other compensation, directly or indirectly."

These parties claim to be "doctors of osteopathy;" they have a sign on their office door of simply "Drs. Shackleford and Faut"—a misleading term at least, when it is remembered that their office is next to that of reputable physicians of this city. They profess to do something, and it is hardly probable they follow their "profession" without an idea of compensation, either "directly or indirectly." They will not deny, we presume, that they undertake to treat or to cure certain diseases or kinds of diseases—that they use therefore osteopathic treatment—whatever that may be. They recommend this to their patrons—that is, they *prescribe* their system of treatment for the relief of disease.

The regular practitioner, in his rounds of professional duty, oftentimes uses neither drugs nor medicines nor instruments. He may have to *prescribe* only a rest, or a vacation, or exercise, or baths, or massage, or a certain line of diet, etc. And yet, in making such a prescription, he is as truly practicing medicine as when he writes a prescription for a ferruginous tonic. These "osteopaths" do not claim that they are following out the line of treatment prescribed by reputable physicians, such as "kneading," "massage," the application of electricity, the use of baths—Turkish, Russian, etc. For such work they would probably charge by the hour, or according to the expense they may be at—as do the proprietors of gymnasia, of baths, etc., or as do masseurs, etc. Charge for skilled labor is all right; but these men charge for their "*professional services*" in the *treatment* of disease. Presumably they have to make diagnoses, and state their prognoses, and then direct lines of treatment. They are either, according to common understanding, practising a system of medicine of their own selection, or else are limiting their practice to a specialty. They are as amenable to the law as would be an electro-therapist—if one should establish himself in the State. Whether one adopts the eclectic, or the homœopathic, or the regular, or other school or system of practice—it matters not—he has to be tested as to his qualifications to undertake the practice of medicine by the State Board of Examiners. After one has suc-

cessfully passed the examinations of this Board, he may adopt any system of practice he chooses, or limit himself to any specialty he pleases. But we do demand that whoever undertakes such specialties, as above indicated, shall pass the regular examination of the State Board of Medical Examiners.

The case now under indictment, it is to be hoped, will be made a test case of the law of Virginia. If the law is not sufficient, let it be amended; but if it covers the ground intended, then let all violators of the law bear the consequences. It is proposed to push this case to a finish to test the law; for it involves the right of "Christian Scientists" and such fakes to practice medicine in Virginia.

A Preacher who Won't Visit and Pray for the Sick who is Attended by the Physician.

Such a man, according to the newspapers of Richmond, Va., resides in that city, and has charge of a church. He claims that the Bible teaches that when a brother is sick he should send for the elders of the church, who should visit him and anoint him with oil, and pray. He says that when the sick man sends for the doctor he removes himself from promises of the Bible. We respect ministers of the gospel who prove that they are possessed of common sense. But what is to be said of such a preacher or priest as this reputed Richmond minister!

The Richmond Academy of Medicine,

Which has for some years been holding its monthly meetings in *The Jefferson*, since the destruction by fire of this palatial hotel, has changed its meeting place to the parlors of Murphy's Hotel, Broad and Eighth streets, second and fourth Tuesday nights of each month. Under the presidency of Dr. Stuart McGuire, marked interest is being shown in the meetings, which are largely attended.

Oral College Examinations.

The faculty of the Medical College of Virginia have recently decided to examine members of the graduating class by oral, instead of written examinations, as has been the custom until now. The examinations of the other classes will be written as usual.

Medical Society of Virginia.

The Thirty-Second Annual Session of this Society is to convene in Lynchburg, Va., November 5th, 6th, and 7th, 1901. Dr. Chas. E. Busey is Chairman of the local Committee of Arrangements.

Virginia State Boards Oppose Relief Bills in Legislature.

A conference of committees representing the Associations of doctors, dentists, pharmacists, and lawyers, of the State of Virginia, recently met in the office of the clerk of the House of Delegates to take joint action looking to the insertion in the new Constitution of a clause prohibiting the passage of *bills of relief* by the Legislature for persons who desire to evade examinations, as required by the general statutes. This is certainly a move in the right direction. Illegals in one or the other of the above mentioned professions are constantly getting friends among the legislators to have bills "rushed through," removing from them the necessity of having to pass the various Examining Boards. As these acts are usually passed regardless of an applicant's qualifications, it has been like a veritable thorn in the flesh, such exemptions being manifestly unjust to the professions and dangerous to the people.

There were present at the meeting Dr. M. D. Hoge and Dr. H. E. Williams, representing the Medical Society of Virginia; Dr. B. Bridgeforth and Dr. Irving B. Smith, of the State Dental Association; Messrs. T. Ashby Miller and A. G. Briggs, of the Pharmaceutical Board, and Messrs. A. B. Guigon and B. B. Campbell, as committeemen from the State Bar Association.

Mr. T. A. Miller was made Chairman, and Dr. Bridgeforth Secretary. Messrs. Campbell and Guigon were named as a committee to draft suitable resolutions, and to prepare literature on the subject for dissemination.

The committee will meet again when the sub committee is ready for report.

New Hospital at University of Virginia.

The inauguration ceremonies of the administration building of the new hospital at the University of Virginia, Charlottesville, are scheduled to come off Saturday, April 13, 1901. The program for the doctors includes several operations by Drs. Buckmaster and Hedges, followed by inspection of the building and luncheon.

Change of Address.

The Eastern office of the Abbott Alkaloidal Co., in New York City, has been removed to 100 William St. The new quarters are located more conveniently and are much more commodious, and afford better facility for the handling of the rapidly increasing business of this office. Eastern patrons of the Abbott Alkaloidal Co. will kindly note this change of address.

Dr. Charles B. Brock,

Who has for the past four years been assistant surgeon at the Chesapeake and Ohio Hospital, in Clifton Forge, Va., will very shortly associate himself with his father, Dr. C. W. P. Brock, of this city, in the general practice of medicine.

The Hygeia Medical College of Cleveland, Ohio,

Brought suit against the Ohio State Board of Medical Registration and Examination to compel it to recognize its diplomas. The case went on through the several courts of the State until it reached the Supreme Court of Ohio, which, on March 26, threw out the suit as not valid.

Small-Pox

Still prevails in various parts of the country. It is a reflection upon the common intelligence of the victims that they had not previously submitted themselves to vaccination. Every now and then we hear of small-pox breaking out in reputable and well-to-do families, even in this city; and investigation goes to prove that the parties have neglected to avail themselves of the preventive—vaccination.

St. Luke's Hospital, Richmond, Va.,

Has been filled to overflowing most of the winter. It will be remembered that this was Dr. Hunter McGuire's private hospital. Dr. Stuart McGuire, who succeeded his father, has made a remarkably successful record for himself. In conjunction with his duties at St. Luke's Hospital—perhaps the best equipped of private hospitals in the South—he is Professor of the Principles of Surgery and of Clinical Surgery in the University College of Medicine of this city.

Obituary Record.

Mr. William R. Warner,

The well-known manufacturing pharmacist of Philadelphia, Pa., died in that city April 3, 1901. It is stated that Mr. Warner was the first person to manufacture sugar-coated pills, and to introduce liquorice tablets.

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ENDO-CARDIOPATHIES:

With Critical Notes and New Figures.

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Endocardial diseases are usually though not always localized about the valves, and may or may not be inflammatory. Consequently, the word endocarditis,* sometimes used as synonymous with endocardial diseases, is not sufficiently comprehensive. A better word is endocardiopathies, which adequately includes all endocardial affections.

To get a correct conception of these matters, about which a good deal of obscurity still centers, we should try and study them in the clear light of sound evidence. Unfortunately, it is sometimes impossible to distinguish the good from the bad.

But all systematic or encyclopædic writers must face this situation, for they not only have to cover each point in their allotted task, but must use the material that offers; and if they fall into errors of commission and omission, the taste of the day that encourages this particular style of literary work is to be blamed rather than the individuals who write. Though they might be plain spoken, like the distinguished syphilographer Bauemler,† who some years ago, after devoting a good deal of space to Pulmonary Syphilis, intimated that he was not sure he had ever seen a genuine instance of it.

But it is not only that writers may lack the necessary experience; they may also fail to have the faculty of discriminating; for with authenticated facts in the foreground, less certain ones in the middle distance, and in the background, or out of sight the balance, there would, at least, be a proper perspective to the picture.

* Introduced by Bouillard in 1841.

† *Ziemssen's Cyclopædia*, vol. iii; p. 211, *et seq.*

Some have adopted another plan, causing errors of a different sort. Taking a small number of cases as a text, they have elaborated from them generalizations unwarranted by their facts. Some of us would be surprised to know that this last plan has been adopted by men who have written ponderous treatises on Heart Diseases with pathological support even scantier than their clinical.

These remarks are not intended to apply to American writers, but they serve to explain why there are such manifest discrepancies in the rules laid down for the diagnosis of some endocardial diseases. Myths have been accepted as facts, and handed down, either because writers have had a lack of experience, or have not taken time to investigate them. To take an example: The unfortunate student of to-day who undertakes to master the rules for diagnosis of mitral stenosis, by consulting standard books on practice, or physical diagnosis, will pretty certainly find that a confusion of ideas is the result. Cabot tells us that in forty eight cases of mitral stenosis, proved by autopsies at the Mass. Gen. Hospital, only twenty-three, or 47 per cent., were recognized during life (*Physical Diagnosis*, New York, 1900). And yet the Mass. Gen. Hosp. ranks deservedly among the best institutions of the country and its medical men among the foremost anywhere.

Now, there is but one way to evolve order out of such chaos, which is to adopt the plans of Fagge and Balfour, which consist in basing our ideas only on good clinical evidence, supported by equally good pathological data. This method is slow, and no one of us may be able to accomplish it alone satisfactorily, but by a union of forces it can be accomplished; for, undoubtedly there is enough material for the purpose even in this country, if it can be gathered together and sifted.

The present paper is in the line of this plan, giving some of the author's experience in clinical and pathological work. It is based chiefly on sixty-five original cases, each with clinical

and pathological history, taken from records of some of our New York hospitals; so that the material is of the high class that always prevails in these institutions. One hundred and ten other of the author's cases from his private records and public clinics are utilized to a minor extent.

Though endo-cardiopathies were alluded to as early as 1684 by Thomas Willis in his "Practice of Physick," and attracted the attention of Merkel, Senac and John Hunter in the century following, physicians gave the matter little attention until Corvisart exploited it in 1808. During the remainder of the century, however, it was studied from almost every available point of view by such men as Kreyzig, Andral, Corrigan, Bouillard, Virchow, Walhe and Stokes, American physicians contributing in later years very valuable material.

Affections of the endocardium constitute about one half of the total of cardiac diseases, and as the inflammatory differ materially from the inflammatory in etiology, prognosis, and treatment, so we may classify them on this basis; or on the other hand may divide them into primary (*i. e.*, inflammatory), under which fall the vegetative, infiltrative, ulcerative, stenotic or sclerotic varieties, as distinguished from the secondary (*i. e.*, non-inflammatory), where the changes are secondary to the former, such, for example, as are caused by the mechanical stretching of the muscular or fibrous tissues of dilated hearts.

Some have adopted the plan of classifying them as to their alleged causes. Thus Litten (*Phila. Med. Jour.*, May 5th, 1900,) distinguishes a rheumatic, scarlatinal, typhoid and pneumonic endocarditis, etc., but apart from the fact that some of his given causes, such as typhoid, will not be generally accepted as such, we have discovered lately that endocarditis follows a number of diseases of less moment, such as coryza, diseases of the skin, and gastrointestinal disorders. A more simple method is to separate endo-cardiopathies into the acute, sub-acute and chronic, and this is suggested here.

The coincident relations of the various micro-organisms to the endocardial inflammations have been noted frequently, and cultures have produced endocarditis in the rabbit. But the variety of these organisms is confusing. In 1886 Weichselbaum distinguished two varieties, the staphylococcus pyogenes aureus, and the streptococcus. Netter found the diplococcus of Fränkel; others have found the bacterium coli; others the gonococcus of Neisser, etc. Litten attributes the disease in-

variably to the gonococcus, while Michaels (*Phila. Med. Jour.*, May 5th, 1900,) has opened a number of rheumatic joints and found no micro-organisms. But notwithstanding this divergence of opinion there is still a widespread belief that endocarditis is, for the most part, of microbial origin.

Acute rheumatism is generally taken to be the chief cause of endocarditis. In fully 40 per cent. of my cases there was an antecedent history of rheumatism, and as many as one-third of the cases of acute rheumatism were followed by endocarditis. This latter is a conservative estimate in the light of statistics that follow.

And yet, figures do not always have much significance when rheumatism is concerned, because the word, both with the laity and physicians, is loosely applied. However, Latham, whose statistics are often quoted, found that in 136 cases of acute rheumatism the valves were affected in seventy-four, or 54 per cent., Gibson in 184 out of 325 cases, or 56 per cent., (*Gibson's Diseases of the Heart*, 1898, p. 397).

In this connection it is interesting to observe that chorea has a close genetic relation with acute articular rheumatism and that Fagge found few fatal cases of chorea without organic valvular changes, similar to those of rheumatic endocarditis.

There is a manifest relation between the age of a patient and the initial attack of rheumatic endocarditis. For example, when infants or children have an acute attack of rheumatism, they are peculiarly liable to endocarditis, say, in about 70 per cent.; and yet acute rheumatism is rare in infancy and young life, though comparatively common in the decenniums between 30 and 50. After this period it rarely develops.

There is no rule as to the date in which endocarditis appears in acute articular rheumatism. It may occur at any time during the attack, or may precede it. After rheumatism, pneumonia follows as one of the most frequent causes of endocarditis. More recently the diplococcus of croupous pneumonia has been found in the valvular deposits. However, the toxin of the pneumococcus administered to rabbits by Carnot and Fournier (*Arch. de Med. Exp.*, XII, p. 357, Schmidt's Jahrbuch), was followed by acute inflammation of the heart muscles, intestinal hæmorrhages, degeneration and fragmentation of the voluntary muscles, while the valves were not affected.

Gibson, on the other hand (*Edinb. Med. Jour.*, Nov., 1900), reports a case of diplococcal infection resulting in pleuro-pneumonia. At

the autopsy, the aortic segments were ulcerated, and in a thrombus adherent to the aortic valves were found diplococci, leucocytes and fibrin. Endocarditis is quite often found in tuberculosis, but the cause of the disease has in these cases been usually attributed to a streptococcus, staphylococcus, Fränkel's pneumococcus, or Friedlander's capsule bacillus.

Endocarditis is also frequently associated with surgical diseases, such as osteomyelitis, erysipelas, dysentery, pyæmia and septicæmia, puerperal fevers, furunculosis, and the staphylococcus pyogenes aureus has been most frequently found associated with the lesions of these affections. In erysipelas, the endocarditis has been traced to a streptococcus, and with it endocarditis has been produced experimentally by a number of workers. In gonorrhœal endocarditis, Leyden found the gonococcus of Neisser in the deposits in the valves. They had the distinct biscuit form, and were colored satisfactorily by Gram's method.

In scarlatina, endocarditis has been seen to develop by Trousseau* and others. It may occur at any time during the disease or with its sequelæ. But a characteristic micro-organism has not as yet been found in this form. Influenza affects the heart in many ways, but chiefly the muscular substance, through the poisonous influence of the toxins; and although endocarditis has been attributed to influenza, it may have been superinduced by the poisons of the complicating diseases, notably pneumonia, or acute rheumatism, and by them from a further complication of the complicating disease, the chief source of infection being possibly the gastro-intestinal tract. Endocarditis occurs occasionally in variola, but if the primary disease is severe, the cardiac affection is (as often happens in endocarditis) associated with other affections, such as a myopathy or pericarditis. Endocarditis occurs occasionally in measles, but syphilis rarely attacks the valves, though the myocardium is frequently involved. While, as already stated, many different sorts of micro-organisms have been found in the ulcerated valves, the etiological relation they hold to the disease is still doubtful. The problem may eventually be settled by determining whether the micro-organisms are to be found in the initial lesions of the valves. We may find that the poisons are originally developed from the micro organisms or other substances.

There is a close relation between endocarditis and some forms of Bright's disease. Inas-

much, however, as, according to my investigations, lithæmia is a causal factor of Bright's disease in from 50 per cent. to 75 per cent, the close relation between rheumatism and endocarditis is plainly shown.* But Bright's disease is a late phenomenon in endocarditis, usually associated with the failure of compensation in the final stage of fatty degeneration, the most common sequel to endocarditis.

Endocarditis is most frequent after ten and before forty, but there is a manifest relation between the age of the patient and the seat of the disease. In the fœtus, where the right side of the heart does the most work, it is most frequently affected; in the extra-uterine life it is the left heart for similar reasons. Accordingly, age and the amount of work to be done must be considered in estimating the liability to endocarditis. In extra uterine life, disease affects the mitral or aortic, by preference, next the pulmonary and tricuspid valves, these latter in a comparatively small number of instances. There is little difference in the tendency to endocarditis between men and women, though it is generally accepted that mitral disease is more common in women and aortic in men, and my statistics confirm this view.

The beginning of an endocarditis is marked by an invasion of the substance of the valve with toxins, micro organisms and inflammatory exudates, while on its surface the shining endothelium becomes opaque and gives birth to minute rounded flesh colored papillary bodies one or two millimeters in height when first seen, and placed near the free edges of the valves. On the mitral valve they develop on the auricular surface at a distance of 2-3 millimeters from the free edge, while on the aortic they form on the ventricular surface. They are at the point of maximum contact. To these excrescences are attached particles of fibrin from the blood, and these, together with ulcerated portions of the valves, may be carried into the general circulation and cause embolism. There are all degrees of infiltration in these valves with or without ulceration, and the disease may extend and involve the myocardium. But wherever ulceration takes place, there is at the same time a sclerotic change coincident with it, so that destructive and constructive processes go hand in hand, nature attempting to repair as disease destroys.

Pathologically, the changes consist first in a thickening of the small vessels, with hyaline degeneration and perhaps partial sclerosis of

*Trousseau—*Clin. Med.*, Vol., p. 188, 1869.

*N. Y. *Med. Rec.*, March 7, 1889.

the smaller arteries followed by small-celled infiltration and proliferation of connective tissue, with eventual destruction of muscle cells. The process may be so extensive that the greater portion of a valve is destroyed or even converted into an aneurismal sac. I have seen an example of the latter accident.

In the chronic forms, there is a deposit of the salts of lime in the valves, or along their attached margins, and the process extends down over the chordæ tendinæ, contracting and stiffening them, while the papillary muscles are also apt to undergo fatty and calcareous degeneration. Such stiffened portions of the endocardium occasionally rupture.

Endocarditis develops insidiously as a rule. It may not be discovered unless looked for, and years often pass before it is recognized. Much depends on the situation. If confined to the walls of the heart, it seldom shows any signs. I have seen a few such cases.

It is interesting to observe exactly what is found in valvular diseases at autopsies, and the tables of Sperling prepared from the Records of the Berlin Pathological Institute between 1868-'70, are the best I have met with. They may profitably be compared with my own tables arranged on the same plan.

SPEHLING'S TABLES.*

300 Cases of *Endocarditis*. 1868-70,

268 cases = 89 per cent. left side of heart.
3 cases = 1 per cent. right side of heart.
29 cases = 10 per cent. both sides of heart.

300 100

Affections of One Valve Only.

200 cases = 66.7 per cent.

Mitral valve only 157 cases = 78.5 per ct.
Aortic valve only 40 cases = 20. per ct.
Tricuspid valve only 3 cases = 1.5 per ct.
Pulmonary valve only 0 cases = 0.0 per ct.

200 100.0 per ct.

Combined Valvular Lesions.

100 cases = 33.3 per cent.

Mitral and aortic— 71 cases = 71 per ct.
Mitral and tricuspid— 9 cases = 9 per ct.
Mitral and pulmonary— 2 cases = 2 per ct.
Aortic and pulmonary— 1 case = 1 per ct.
Aortic and tricuspid— 0 case = 0 per ct.
Mitral, aortic and tricuspid, 16 cases = 16 per ct.
Mitral, aortic and pulmonary, 0 case = 0 per ct.

Tricuspid, pulmonary, mitral, 0 case = 0 per ct.
Tricuspid, pulmonary, aortic, 0 case = 0 per ct.
All four valves, 1 case = 1 per ct.
100 100 per ct.

Embolism.

84 cases = 28 per cent.

76 with left disease—8 with right side disease.

Kidney, 57.
Spleen, 39.
Brain, 15.
Digestive organs, 5.
Skin, 4.

AUTHOR'S TABLES.

65 Cases of *Endocarditis*. 1872-1888.

56 cases = 86 per ct. left side alone affected.
0 cases = 0 per ct. right side alone affected.
9 cases = 14 per ct. both sides affected.

65 100 per ct.

Affections of One Valve Only.

18 cases = 27 per cent.

Mitral valve only 6 cases = 33.33 per ct.
Aortic valve only 12 cases = 66.67 per ct.
(Including diseases ascending portion of arch.)

Tricuspid valve, 0 case = 0.0 per ct.
Pulmonary valve, 0 case = 0.0 per ct.
18 100.0 per ct.

Combined Valvular Lesions.

44 cases = 67 per cent.

Mitral and aortic— 31 cases = 70.5 per ct.
Mitral and tricuspid— 2 cases = 4.5 per ct.
Mitral and pulmonary, —0 cases = 0.0 per ct.
Aortic and pulmonary, —0 cases = 0.0 per ct.
Aortic and tricuspid— 2 cases = 4.5 per ct.
Mitral, aortic and tricuspid, —4 cases = 9.4 per ct.
Mitral, aortic and pulmonary, —1 case = 2.2 per ct.
Tricuspid, pulmonary, mitral, —1 case = 2.2 per ct.
Tricuspid, pulmonary, aortic, —0 case = 0.0 per ct.
All four valves, —1 case = 2.2 per ct.
Pulmonary and tricuspid, —2 cases = 4.5 per ct.

44 100. per ct.

* Gibson's *Dis. of the Heart*. 1898.

Embolism.

11 cases = 16 per cent.

All occurred in connection with left side disease and as follows:

Kidney, 6 times.
Spleen, 4 "
Brain, 1 "
Liver, twice.

It will be noticed that there is a general agreement between the two tables except as to the comparative frequency of aortic and mitral diseases. Perhaps in my tables a larger number of cases might have altered this relation.

If, however, in my 65 cases we throw out the affections of the first part of the aorta, the incidence upon the valves stands as follows:

1. Aortic insufficiency,	49 times.
2. Aortic stenosis,	39 "
3. Mitral insufficiency,	38 "
4. Mitral stenosis,	33 "
5. Tricuspid insufficiency,	8 "
6. Tricuspid stenosis,	4 "
7. Pulmonary insufficiency,	4 "
	—
	175

Inasmuch, however, as single valve lesions were rare, the total foots up 175, an average of from two to three valve-lesions in each case. The following is the order of frequency, as recorded in my office cases:

Aortic disease,	56 per ct.
Mitral, "	35 per ct.
Tricuspid, "	6 per ct.
Pulmonary, "	3 per ct.
	—

100 per cent.

On the other hand, in 50 cases from my clinic, as taken by myself and assistants (not verified by post-mortems), the incidence was put down as follows:

1. Mitral insufficiency.
2. Aortic insufficiency.
3. Aortic stenosis.
4. Mitral stenosis.
5. Tricuspid insufficiency.
6. Pulmonary insufficiency.

And this is not very unlike the order of Walshe (*Diseases of the Heart*, London, 1873, p. 105), which is—

1. Mitral insufficiency.
2. Aortic stenosis.
3. Aortic insufficiency.
4. Mitral stenosis.
5. Tricuspid regurgitation.
6. Pulmonary incompetency.
7. Tricuspid stenosis.

Dr. George S. Middleton,* of Glasgow, puts the order of frequency from his dispensary cases (unsupported by post-mortems) as—

1. Mitral insufficiency.
2. Mitral stenosis.
3. Aortic incompetency.
4. Aortic stenosis.
5. Tricuspid disease.
6. Pulmonary disease.

And yet I should prefer not to take any purely clinical evidence as a basis of statistics, for the following reasons:

In my 65 cases with clinical histories and post-mortems, while endocardial disease was recognized by those who had charge of the patients in 95 per cent., 37 cases of aortic disease were only noted in 23, or 62 per cent.; while in 31 cases of mitral disease it was only detected in 19, or 61 per cent. In other words, there was a positive failure to locate in 39 per cent. of actual lesions. Now, although experience in auscultation, together with a comprehensive consideration of all the associated symptoms, is leading to greater accuracy in diagnosis, and progress is being steadily made in this direction, there is a limit to the possibilities, and it is expecting too much of any physician to demand that every valvular lesion be differentiated at the bed-side. As the best clinician often fails to recognize them now, so they will continue to do so for all time. The reasons are threefold. Many times they give no sign, or if they do, attendant circumstances prevent them from being appreciated. I have even heard a distinguished diagnostician say that a diagnosis made at a first examination had little value. In fact, it is often impracticable to make a complete diagnosis at such time.

As Stokes said, in 1855, "The difficulties of special diagnosis are still infinitely greater than many might be led to expect." And yet we shall gradually overcome some of these difficulties as we frame better rules for diagnosis.

On the other hand, the diagnosis of endocardial disease at the post-mortem table is comparatively easy, and rarely liable to misinterpretation, though clinicians do not all take this view. The chief difficulty lies in determining whether or not valves are sufficient. However, the ordinary water test is, I think, satisfactory, if applied by an experienced pathologist; and he also can determine whether the valve affected has been the seat of inflammation or has been dilated or distorted by muscular action, etc.; in other words, whether the endocardial disease is primary or secondary.

* *Lancet*, October 26, 1889.

The symptoms of acute benign endocarditis are variable and inconstant, and it may escape observation. On the other hand, it may be announced with unmistakable signs. A patient is seized with intense precordial pain, dyspnoea, or arrhythmia or rapid pulse, perhaps with some fever or even cyanosis, and the ear applied to the chest detects a rough, loud or harsh murmur. Occasionally, the suspicion that the patient may be having an acute exacerbation of the chronic disease leads us to apply the ear. More rarely a sudden strain will rupture a valve that has been previously softened by infiltration, or made brittle by atheroma or senile changes. Such an event is usually announced by a musical murmur. This condition will be more readily detected by keeping in mind the various affections, just enumerated, that appear to cause endocarditis. In the acute septic form there are irregular chills and sweats, with fever. Other signs have already been noted as belonging to the benign form, to which should be added pretty uniform tenderness and enlargement of the spleen, with similar conditions of the liver and kidneys. In addition, the urine should be dark colored; *i. e.*, bloody, if a kidney develops an infarct.

According to my hospital tables, as I have said, endocarditis has recognizable murmurs in 95 per cent. of the cases, and the three most prominent signs following the auscultatory were dyspnoea in about 50 per cent., palpitation in about 25 per cent., and præcordial pain in about 10 per cent. Other less constant symptoms were cough, weak or irregular action of the heart, dizziness, epigastric pulsation, orthopnoea, cyanosis, delirium and oedema. In only 5 per cent. were there no characteristic signs during life. But it is one thing to be able to distinguish endocarditis, or in fact any endocardiopathy, inflammatory or not, and quite another to locate the lesion accurately, as has been shown.

Of the endocardial murmurs there are two kinds. First, the organic; second, the functional. The former are heard when there is a mechanical hindrance to the flow of the blood from ulceration, sclerosis or rupture of the valve. The functional murmurs are due first to relative—*i. e.*, muscular insufficiency, which occurs when the orifice is dilated so that the valve margins do not come together accurately; or, when from degeneration or weakness of the papillary muscles, the valves are not held in place. Also in anæmia, especially in convalescence from long continued illness, where there is an alteration in the composi-

tion of the blood. An irregular pulse with precordial pain and dyspnoea, or even a systolic murmur at the apex, do not necessarily indicate that the murmur is due to organic disease, but a systolic murmur at the base is likely to be functional if it is limited to the left side of the sternum, and there is no thrill.

Organic murmurs during the development of the endocarditis are usually harsh and loud. The French talk about the sawing murmurs (*Bruit du scie*), the rasping murmur (*Bruit du rape*) or musical murmur (*Bruit d'oboe*). The bellows murmur (*Bruit du soufflé*). These are usually organic; functional murmurs are low, soft and systolic. But a single examination may not suffice to distinguish between the two. The organic murmur will be apt, however, to remain, for a while at least, while the functional will disappear under tonic treatment or rest. The point of greatest intensity of a murmur is somewhere in the course of the blood current beyond the obstruction, and is usually due to the breaking up of the current. Just as in the stream of water flowing through a narrow orifice, it is not at the point of greatest obstruction that the noise is loudest, but where the water expands beyond the obstruction and is broken up into diverse currents. When the vibration of the vessel is felt it is called the "thrill" (*fremissement cataire*), being like the purring "thrill" felt by the hand pressing on a purring cat.

In endocarditis we do not need to be alarmed if there is chronic tachycardia or bradycardia. Neither condition should be treated as diseases. A pulse of 50 or 60 may be characteristic of the man, and so a pulse of 100 or perhaps 120. It is not at all a rare thing to find a patient with an average pulse of 60. It is much more uncommon to find a pulse of 100 or more. We should first inquire if these abnormal rates of the pulse are not individual or family characteristics. I have known the most serious mistakes to be made in such cases. A man with a pulse of 50 to 60, or even 120, may not realize that there is anything peculiar about the action of his heart, and may be quite as able to do his daily work as the next man. And yet physicians are quite apt to treat these conditions so as to try and bring the rate to the recognized average of seventy-two. In such cases, drugs should be the last remedies resorted to.

The rhythm is usually affected in endocardiopathies both in the acute and chronic forms, and always in broken compensation. If the pulse is large, it generally indicates cardiac hypertrophy; the hard pulse, rolling under

the fingers, means arterio-sclerosis, the feeble pulse is found in the fatty heart, the soft pulse in anemia and in fevers. Pulsation of the jugulars suggests tricuspid regurgitation. The capillary pulse aortic regurgitation. The pulse may be unequal—that is, more easily felt in one radial than in the other—but this peculiarity may be congenital or due to arterio-sclerosis.

The sphygmograph is a pretty instrument, but is less used than formerly, because it is apt, to mislead. At best, when in the hand of an experienced person, it has comparatively little value. Few clinicians rely on it in this country.

In endocarditis there are not infrequently attacks of tumultuous action, with distressing palpitation, the impact extending over a considerable area. In the intervals between these attacks, the action of the heart may be quite regular, the apex beat inappreciable to the finger, and a "thrill," which was distinctly felt, may disappear.

Auscultation yields the most important information. Supposing a valve, say the mitral, is obstructed to any considerable extent, so that it cannot close perfectly, the blood will necessarily leak back into the left auricle, during the contraction of the left ventricle. And the first sound, which is due partly to the closure of the mitral valve and partly to muscular action, is replaced by a murmur caused by the leaking or regurgitant blood passing through the obstructed opening, and this sound is best heard at the apex, where it is conveyed by the blood current, the heart tissue, or the bony walls of the chest. If the new deposits in the valve are soft and smooth, the murmur is soft; if rough or irregular, it will be loud or harsh. This is providing the heart's action is strong; if it is weak, the murmur or the first sound may be inaudible. Sometimes a harsh murmur suddenly disappears while the action of the heart continues the same. Some portion of the obstruction has then been swept away. There are not the hard and fast areas in which to hear the several murmurs, as laid down in some books, and there is quite a little difference as to the locality of these areas between the teachers of physical diagnosis. The truth is that the point of maximum intensity for determining mitral regurgitation is at the apex, and if the sound is conveyed to the left, even a few inches, the diagnosis is pretty certain; but in mitral stenosis, the point of maximum intensity extends from the apex upwards and downwards perhaps as much as an inch or more and a less distance to the right. In

aortic obstruction, the obstructive murmur is heard best either at the junction of the second right interspace with the sternum, or even over as far as the corresponding space on the left side, or half way down to the apex, while the aortic regurgitant may be well heard along a broad line from the aortic area to the apex, or down to the ensiform appendix. As the point of maximum intensity for the tricuspid is located at the junction of the left fifth interspace with the sternum, it is not far from the mitral area, and its murmurs may be conveyed to that area, hence other than auscultatory sounds will have to be considered in making a diagnosis between these two lesions. Pulmonary lesions are so rare that they are curiosities, and usually due to congenital malformation of the heart.

Percussion is at first negative, but, as endocarditis progresses, the contour of the heart gets larger and more ovoid. This enlargement is the most important sign of organic heart disease, because it is unequivocal.

The heart swings like a pendulum in the cavity of the chest suspended by its great vessels, so that the apex is carried well outside the nipple in some cases, as in most cases of lateral curvature, where the spinal concavity is to the left. It is also displaced in various ways, as by fluid in the chest, and, to some extent, by a dilated stomach, or by lying on the side. Still, as we examine only in the standing position, or lying on the back, it is relatively fixed, and we find the apex in the fifth space, the left border of the heart the breadth of a rib inside of the nipple, and about twice that distance below the nipple. The right auricle is about the only part of the heart outside the right border of the sternum, and two-fifths of the heart is to the left of the median line. The new method of mapping out the heart by percussion can be acquired by experience, and is practicable in the great majority of cases. The older method, still employed by some, of only demarcating the area of flatness, has comparatively little value. A source of error in examination of the heart is the faulty positions, size and contour given in the older text-books and some of the newer ones.

Angina pectoris is not uncommon in endo-cardiopathies. Both forms, which are best classified as the mild and the severe, are usually brought on by mental or moral excitement, indigestion, over-exertion, and a number of minor causes, especially by those that influence the special senses, and are always, in my experience, capable of being controlled by suit-

able remedies, though drugs may prove ineffectual, when rest, massage, electricity, or a change of scene will do so.

Endocarditis gives rise to various symptoms in other organs, for there may be hyperæmia of the lungs, embarrassed respiration, engorgement of the kidney and chylopoëtic tract, and even general dropsy.

A distinct picture is produced in these cases by embolism, where particles detached from the diseased endocardium or clots formed about the valves, auricular appendages and papillary muscles are carried to distant organs. These accidents may cause few symptoms, or may involve the brain, causing alarming results, and even sudden death. But if the collateral circulation is rapidly established, little or no functional disturbance may be produced, but terminal arteries are found in the brain, lungs, spleen, kidneys and heart, and the occlusion of the large vessels in these organs is apt to be followed by severe symptoms, such as chills, vomiting, pain, hæmorrhage, and arrest of function. Benign emboli may only cause arrest of function, but the malignant or septic will certainly produce abscesses that will, in turn, furnish foci for further abscesses. Embolism of the brain occurs most frequently along the line of the branches of the left carotid, whose trunk lies directly in the course of the circulation. The embolic masses find their way through this carotid to a branch of the sylvian artery, and if there is occlusion of a large branch, loss of consciousness, hemiplegia and aphasia usually follow.

In young or middle life, embolism is the rule; in advanced life, apoplexy. Embolism of the lungs has characteristic features. If a vessel of any considerable size gets plugged, there is apt to be pain, vomiting, cough, dyspnoea, hæmorrhages, and expectoration of frothy mucus, perhaps cyanosis, suffocation and syncope. Embolism of the liver may be ushered in with chills, pain, swelling, tenderness and icterus. Embolism of the spleen also shows itself with a chill, fever, and severe pain in the spleen, which should be enlarged and tender to the touch. Embolism of the kidneys similarly may be ushered in by chills, pain, and fever, albumin and bloody urine. Embolism of the mesenteric arteries is revealed by colicky pain in the abdomen, diarrhœa and discharges of black blood. Embolism of the retina is sometimes seen with the ophthalmoscope. If septic, it causes inflammation and destruction of the globe. Embolism of the skin may cause purpura and gangrene.

In fact, embolism arrests the functions of

the part where the infarct is lodged, and if septic, produces an abscess.

But even when compensation is imperfect, we find certain other established conditions; for whenever the heart begins to labor, there is immediately congestion of the veins and capillaries of the lungs, and then the bronchial mucous membrane, alveoli, and passages become swollen and œdematous, with eventual desquamation of epithelium and transudation of mucus, serum and blood. Hence embarrassment of respiration, which is heightened by the increased efforts of the lungs to ærate the abnormal quantity of blood in the pulmonary vessels. Such a condition may at first be temporary; if it become chronic, the character of the lung is changed, for the long continued venous engorgement, followed by deposits of pigment matter, leads to what is known as *brown induration* of the lungs, and even to rupture of pulmonary vessels; for pulmonary hæmorrhage is not uncommon in chronic heart disease.

The liver also becomes enlarged from a similar cause, and is pigmented for a similar reason. In fact, there is a congestion of the entire chylopoëtic system, which continues as long as the heart is embarrassed; and realization of the fact should keep us on our guard in meeting by proper treatment the indigestion that is associated with uncompensated heart disease.

For a similar reason the kidneys become swollen, and later tough and firm. The urine is diminished, but the specific gravity is increased; it may contain blood, and usually a little albumin; sometimes a little sugar, varying from $\frac{1}{2}$ to 2 $\frac{1}{2}$ per cent. Œdema, due to prolonged distention of the veins of the peripheral system, hepatic or renal implications, deserves attentive consideration. But all cases of œdema about the ankles, hands or face need not alarm us. They may occur from lack of exercise or anæmia, or temporary lack of compensation, and will disappear under appropriate treatment; but accumulations of fluid in the abdominal cavity or œdema ascending gradually from the ankles to the trunk are very serious matters, pointing to a fatal issue at an early date.

In conclusion: I have called attention to the fact that the word endocarditis as descriptive of endocardial diseases is incorrect, and that endo-cardiopathies is a better word. But I want to impress another fact with more force, and it is that the diagnosis of valvular diseases is still a great stumbling-block for physicians, mitral stenosis and tricuspid regurgitation giving the greatest difficulties. And the source

of the trouble is that we have erroneous ideas as to the size, position and shape of the heart in life, and have accepted erroneous rules for diagnosis. What we need, then, first, is correct ideas as to these anatomical relations; and secondly, a closer study of symptoms as related to post-mortem regulations. There should be in this country an abundance of the material necessary to frame correct rules for diagnosis, if we only will utilize the records of the best hospitals in our large cities.

7 East Eightieth Street.

STATE MEDICINE.*

By JAMES EVANS, M. D., Florence, S. C.,

Ex-President South Carolina State Medical Association; Secretary South Carolina State Board of Health, etc.

Three decades have scarcely passed since the first recognition of the importance of State or preventive medicine. In those countries in which it has been most cultivated and which have evinced a just appreciation of the incalculable benefits of vigorous health and long lives in advancing their material wealth and prosperity, a strange apathy and indifference has been manifested by the greater number of the medical profession to this particular branch of medicine.

It is singular that the efficacy of preventive measures in controlling and restricting disease, and the brilliant possibilities which they foreshadow in the future, have not made a deeper impression on a larger number of physicians and induced them to engage in its pursuit and cultivation.

Preventive medicine cannot offer the inducement of frequent opportunities for the display of brilliant technique in the performance of surgical operations, or of the exhibition of great skill in the treatment of disease, but it nevertheless has a greater future before it than any other branch of medicine, and before the close of the present century it will be universally recognized as the chief and determining factor which enabled the then ruling nation of the world in winning its position of supremacy. Even now, at the very beginning of the twentieth century, it is evident to every thoughtful and reflective mind that, in strenuous effort in the varied activities of life, in international strife, in keen and intelligent competition and struggle for supremacy, the present century will surpass any that has ever preceded it. If we

accept the declaration of Herbert Spencer, that "the first condition of national prosperity is to be a nation of healthy animals," it is the patriotic duty of every medical man, no matter what specialty he has hitherto devoted himself, to be sufficiently informed in the laws of health to be able to point out and direct every person in the immediate community in which he lives in the proper course to pursue to secure a sound body and mind and a good education. Huxley says that the "masses should be educated because they are men and women of infinite capacities of being, doing, and suffering, and that it is true now as ever that the people perish for the like of knowledge." And it is peculiarly the province of the medical man to disseminate this knowledge, to point out the conditions which promote health and suppress those which are the cause of disease, to convert the unhealthy citizen into the healthy one, to increase his powers of resistance to disease, to surround him with the conditions of life which will insure a physical development capable of sustained and prolonged effort, of great powers of endurance, educated, intelligent, resourceful, and endowed with a vigorous intellect which will brave anything, and not be dismayed by difficulties—such a being as will readily be recognized as belonging to the imperial race, which, in the future, will rule the world.

The development of public hygiene to its present state of excellence and efficiency has been due almost exclusively to the interest taken in the subject by the large maritime cities in this country and Europe. The appalling destruction of human life by the great epidemic diseases which successfully invaded the continent of Europe in the seventeenth and eighteenth centuries deeply impressed the public mind with the necessity that the nature of those diseases and the peculiar conditions accompanying their invasion should be ascertained.

Naturally it led to the study of etiology of the prime cause of these, and the means best adapted to protect each unit of the population from the contagion, placing an effective barrier to its further spread in the community and assuming the dimensions of an epidemic. This led to the establishment of quarantine to prevent the introduction from other countries of those diseases so eminently contagious, prevailing as great and widespread epidemics and causing such frightful loss of life. Many of the sanitary regulations enforced at this time were found equally as efficacious in this prevention of other and more familiar diseases, which were always present, and which in a number of years

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were the cause of more deaths than those which prevailed as great epidemics. It is these diseases which are ever present with us, silently, stealthily and surely performing this deadly work, claiming here and there a victim, and chiefly for this reason exciting no comment, that must be credited with the greatest number of deaths, not at long intervals of years, and confined oftentimes to very few countries, like the former, but every day, week, month and year, in every city, village and hamlet are they busy with tireless energy carrying sorrow and mourning to thousands of happy homes. And it is a sad reflection that most of these diseases which are so destructive to human life are far more preventable and under the control of proper sanitary precautions than those that are usually designated pestilential.

The large cities in every country were the centres of wealth, education and refinement. While the conditions and environment of city life in them were incomparably inferior from a sanitary point of view to a residence in the country, pure air, water and food, the great essentials to vigorous and robust health, were not as plentiful and accessible to the denizen of the city as it was to persons living in the rural districts. In most of the large cities the death rate exceeded the birth rate. This was eminently true of London a century ago, and had it not been for the continual large drafts of people from the rural portions of England that were annually made she would evidently have become depopulated. This great mortality will not excite surprise when we consider the deplorable sanitary condition of the city at this time, the intemperate habits of the people in regard to food and drinks, and the utter disregard in their daily life of everything pertaining to health. Only the greater thoroughfares were paved, and even these were not provided with drains, and the streets were flooded with water after rains. There was no public water supply; the inhabitants were forced to use wells located near cesspools, which were continually overflowing and polluting the water; the wealthy used water brought from the springs in Hampstead. The bath-room was not known in London at this time; the better classes indulged in the foot bath, while it was said that the only two occasions at which one of the laboring classes was washed all over was after he was born and after he had died. It was an age of immoderate indulgence in eating and excessive use of alcoholic beverages of every description. The tables were overburdened with dishes containing food enough for four times the number of

guests. Mr. Walker says: "As tables are now arranged, one is never at peace from an arm continually taking or sitting on a side dish or reaching over a wine cooler in the centre. Then comes the more laborious changes of courses, with the leaning right and left to admit a host of dishes to be set on only to be taken off again, after being declined in succession by each of the guests to whom they are handed around." Thackeray, in his lectures on the Georges, says that it was no disgrace for even persons occupying the highest social or political position to be seen drunk on the street. It was said of Dundas, Pitt and Fox, that each of them would hide three quarts of portwine under their vests before they would arise from the dinner-table to attend Parliament, and it was related much to the credit of Pitt, who was Prime Minister at the time, that he was only seen once drunk in Parliament. The closing scenes of these evening entertainments are admirably depicted with life like fidelity by Hogart in some of his sketches of the period.

It became apparent to the more thoughtful citizen that radical reform and changes had to be made to secure the benefits and advantages enjoyed by the inhabitants of the country districts, and that these measures were essential to the wealth and prosperity of the city, and the preservation of the lives of her people.

Every opportunity was embraced to secure an abundance of pure air by widening the streets, laying out parks of many acres in every part of the city where it was practical, preventing contamination of the soil by the proper construction of drains for the discharge of waste water and sewerage, providing an abundant supply of pure water for domestic use, and in the construction of dwellings with improved facilities for heating and ventilation. During the last half of the past century, sanitary science had been studied and developed in the cities and towns to such an extent that the urban population enjoyed quite as good health as that in the rural districts, with an increased birth rate and diminished death rate, and a wonderful increase in the average duration of life. Less than a century ago, the death rate in London was 80 per thousand—largely in excess of the birth rate. During the last quarter of the past year the death rate was 16 per thousand and the birth rate 26.6 per thousand, showing a steady, natural increase in the population of the largest city in the world, notwithstanding the fact that the poor number 800,000, and are crowded in tenement houses. Although the birth rate was

2.9 per thousand less than the average for the ten preceding years 1890-99, the death rate, 16 per thousand, was less in the last quarter of the three preceding years, and 3.2 per thousand less than the average for the ten years 1890-99. In many sanitary areas of this great city the death rate was as low as 10.4 per thousand—the same as that of the most careful small provincial towns, and less than the average of the rural districts. The death rate from zymotic diseases during the last quarter of 1900 was 1.50 against an average of 2.24 per thousand for the preceding ten years. Great attention is paid to everything pertaining to sanitation. The sewerage, amounting to 200,000,000 gallons per day, is carried fifteen miles below the city and emptied in the Thames and so treated previously as not to become a nuisance to the people who reside near the river at this point. During six months of the year 1899, 15,000 vessels were inspected and 1,000 ordered to be cleaned. No less important is the work of her numerous bacteriological laboratories in the speedy recognition of disease and the examination of food products. That 4,500,000 frozen carcasses of sheep were examined in 1899, will give some idea of the magnitude of the work in this direction.

The facilities and advantages of acquiring either a literary or industrial education, to live in more comfort and enjoy greater social advantages, are powerful inducements for the countrymen to abandon agricultural pursuits and remove to the towns and cities. This movement of the rural population has been quite as marked and pronounced in Europe as in this country. The total population of England and Wales in 1801 was 8,892,536, and of this number, 4,721,252 lived in the country—that is, more than half. In 1891, the population of England and Wales was 29,002,525, and of this number, 5,534,000 lived in the rural districts—not quite one-fifth. Country interests, instead of being paramount in 1891, were less than that of one-fifth of the population of the country at large.

In the United States, the tendency of population in the same direction cannot have escaped the most casual observer. Notwithstanding the large emigration from foreign countries, the towns and cities have rapidly increased in population, chiefly at the expense of the rural districts; and the agricultural interests of the country at large would have been surprisingly crippled for want of necessary labor in the fields had it not been compensated, in large measure, by so many new labor-saving machines. Greater New York, in 1800,

had not more than 122,000 in population; in 1900, nearly 2,000,000.

Other cities in the Union have increased in like ratio; and one of the marvels of the nineteenth century is the rapid growth of large cities in the far West, in a section of country that, in the recollection of men now living, was a vast wilderness only visited by man for the purpose of hunting wild animals. London, in 1801, had 922,000; in 1900, 4,580,129, or nearly equal to the number of inhabitants in the rural districts of England and Wales in the beginning of the nineteenth century. As before mentioned, such was the insanitary condition of this great city one hundred years ago that the death rate exceeded the birth rate, and only the continual accession of the inhabitants from the rural districts prevented its depopulation. The London of that day was conspicuous for the absence of everything pertaining to sanitation. At the present time, no city in the world excels it in the cultivation and development of public hygiene, and in the practical application of its principles for the preservation of the health and protection of the lives of its citizens. An examination of the Registrar-General's Report for the last quarter of 1900 is strikingly impressive, and shows the wonderful results obtained by improved sanitation in this—the largest city in the world. The health officer, Mr. Murphy, in an interesting table, draws out the "life capital" for the period of 1891-9, and shows that, compared with the decennium of 1881-90, there has been a mean annual saving of 4,095 lives; and where the number of years representing the mean future lifetime are applied to the number of lives gained or lost at each age group, the 4,095 lives saved represent a mean annual saving of 172,763 years of "life capital," as against 161,330 for the period 1881-90.

The mortality will be still further reduced as soon as some provision is made to prevent overcrowding in tenement houses, as disease usually prevails in those areas in which there is the greatest room density.

I regret that similar statistics in the United States are not accessible at present. It is doubtful, however, if the recent census taken in 1900 will show any greater difference in the birth and death rates of this country than have been shown in England.

In the quinquennium from December, 1885, to November 30, 1900, in the city of Chicago the death rate was only 14.95 per thousand, showing the excellent work of its very able and efficient Board of Health. This is the lowest death rate of any large city in the

world, and is due to the active and intelligent work of the health authorities of this great city in medical school inspection, in enforcing isolation, notification and disinfection of contagious disease, in the supervision of food products, and in the provision of a bountiful supply of pure water, and in the removal of its large amount of sewerage. It is not difficult to enforce sanitary measures in a city in which the citizens have always manifested such a lively and intelligent interest in everything pertaining to sanitary science.

The organs and tissues of the body, in the performance of their functions, evolve force. While some of this force is expanded in the ordinary manifestations of life, another part is used in the preparation and supply of the material for its generation. Health may be defined as the equilibration of these forces. The slightest departure from it in either direction creates disturbance, and this may affect the nutrition of the body and produce other changes, which, if not the actual cause of disease, may be the contributing agency in its production. Everybody is daily, and for an indefinite period of the time, exposed to the disease-producing germs, and it is only by the maintenance of this equilibrium of forces that they are enabled to resist them; if, however, any disturbance occurs, it may become the chief factor in creating a susceptibility to the particular infection, and enable it to exert its baneful effects on the economy. It is the peculiar province of preventive medicine to maintain and preserve this exact balance of the forces of the body and ward off disease by increasing its powers of resistance. The measures which have hitherto been employed in the restriction and suppression of infectious diseases have not had any sensible effect in weakening the infection on which they depend. Infection is a force which may at any time gain admittance, but oftener, it is a force altogether omnipresent, gains no admittance without contributing agencies, and in this way, in the vast majority of instances, is the cause of disease.

At the last meeting of the British Medical Association, an interesting paper was read by Sir H. R. Beever on the constancy of the infection of phthisis in eighteen of the rural districts of the country of Norfolk, in England, which is sparsely inhabited, and located so far from the lines of travel, commerce and manufacture, that the people had few inducements to change residence, and the population had become stationary. These districts were alike in environment, in climate, air, water, and the

food and its preparation on which the people subsisted. The statistics include only persons between the ages of twenty-five and forty-five, the period of life at which the greatest incidence of phthisis occurs, and embraces a period of three decades from 1860 to 1890. The deaths from phthisis in these eighteen rural districts for the three decades, have a uniform rate, alike in each decade but unlike from one decade to another. The rate for Forehoe for the three decades was 4.31, 2.92, 2.28; for 1860 to 1890, 3.1; for Honstead from same period, was 3.76, 3.43, 1.86, making an average from 1860 to 1890 of 4.0. The little rural districts in Norfolk, although sparsely inhabited, "had the same experience common to all parts of England during the same generation, an experience becoming increasingly favorable," in having a uniform phthisis death rate, which has fallen 20 per cent. from the prior decade. "This uniformity," Sir Beever argues, "in the history of rural phthisis, strikes me as most cogent evidence of the insignificance of case to case infection; the rates are far too regular for so varying a factor to be the determining factor."

The powers of resistance in most persons are so great as to render them insusceptible to disease, notwithstanding daily exposure to the contagion for considerable periods of time. What impairs vitality may be considered the assisting or contributing cause of any disease, and inasmuch as they were indirect and far more potent in the development and prevalence of it than the immediate one, the infection, they should have far more prominence in the consideration of any measures for its restrictions and suppression. These conditions would include poor drainage, over-crowding and infected food, and in the last category may be added food which, although pure and unobjectionable in other respects, is deficient in those ingredients on which the proper nourishment of the body depends. The researches of Buchanan in England, and Boroditch in this country, have shown that consumption was most prevalent in those localities in which the subsoil was impervious to water. If the municipal authorities in our towns and cities realized the influence of dampness arising from an improperly drained subsoil on the health of the people, they would require the streets to be paved with asphalt and the foundations of dwellings covered with some material that was impermeable to moisture, then the mortality from all diseases, and especially phthisis, would be notably diminished. These pavements are of inestimable value likewise in

facilitating the collection and removal of dirt and dust from the streets, and vastly curtail the amount of respiratory impurities floating in the atmosphere of our cities.

It is well known that consumption is far more frequent and the mortality greater among the negroes since emancipation than it was during the period of slavery. The removal by emancipation of all restraint on the movement of the negro, allowing free and unrestricted intercourse between town and country, was a circumstance peculiarly favorable to the introduction and dissemination among them of syphilis, which, although a mild disease usually among negroes, nevertheless impaired their vitality to a sufficient extent to render them very susceptible to tubercular infection, and with so little power of resistance as to fall an easy prey to its ravages. Several years ago I had occasion to investigate the increased incidence of consumption among negroes, and in making inquiries of a large number of planters in the coast counties of South Carolina, who were the owners of a great many slaves, I learned that the disease was so rare among them that only a few of those gentlemen had ever seen a case of this affection among slaves. In 1860, the death rate in Charleston, S. C., was only 12 per thousand, the same as it was with the whites. They were well fed, warmly clad, not overcrowded in their houses, free from care and anxiety, and, under the strict police regulations of the plantation, their habits were regular, and all the conditions of life were such as to ensure vigorous and robust health. The death rate of the colored man in Charleston at the present time far exceeds that of the white, and, in regard to this particular disease, is nearly three times as great. This excessive mortality of the negro is not due to his exposure to a stronger and more violent infection, but to his changed habits of life, which have lowered his vitality and diminished his powers of resistance, and it is these contributing agencies which have rendered him an easy prey to this disease.

Antiseptic surgery was the brilliant conception of Lord Lister, and was based on the idea that suppuration in all wounds was due to a living germ which gained admittance at the point of injury or division of the tissues, and to prevent this was the first and most important duty of the surgeon. And if infection of the wound follows, it is usually due to lack of knowledge and cleanliness—the contributing agents to it. This modern treatment of wounds is preventive medicine, but I wish to direct your attention also to the antiseptic treatment

of diseases in contradistinction to antiseptic surgery. M. Granches recently read an interesting paper on this subject before the Academie de Medecine, and gave statistics of the cases of infectious diseases treated according to this method in the Children's Hospital in Paris during the last ten years. The means employed are very simple, consisting merely in having the floor around the bed covered with oil cloth and surrounded by a small screen.

As he pointed out, the object of the screen was chiefly to prevent other children in the ward coming in contact with the patient, and it was, at the same time, a reminder to physician and nurse of the precaution that should always be observed before going behind the screen—such as donning a gown moistened with 1 to 1,000 solution of corrosive sublimate, and washing their hands also in the same solution before coming in contact with the patient. It was likewise required that the floor be washed twice a day and the walls of the screen two or three times a week with bichloride solution. The vessels used for taking meals were sterilized in boiling water, the clothes, bed, bedding, and everything in contact with the patient subjected to sterilization by steam, and the patient frequently sponged and the skin kept clean. This procedure was daily carried out on the supposition that the poison or infection was not vaporized and intimately mixed and floating in the air, but something powderable, heavy, and pertinaciously clinging to the hands, face, secretions of the mouth, nose, bowels, and kidneys, and to everything in contact with the body of the patient. In other words, isolation is entirely subsidiary to antiseptis. In some diseases, like phthisis and diphtheria, the infection in the act of coughing is intimately mixed with the secretions of the throat and lungs, and when expelled in this manner fills the air, but, being heavy, quickly falls to the ground or on a soiled floor, and may there maintain its vitality for an indefinite time, and become a source of infection. The infectious entity is not an intangible gas easily mixing with the air, but is a heavier body which falls quickly to the floor, and then drying, may arise with the dust, and in this way propagate disease, but this can never take place under ordinary circumstances in a hospital where any attention is paid to cleanliness. During the ten years in which this antiseptic treatment was followed, the incidence of measles was reduced two thirds, scarlet fever and diphtheria from an average of 24 per annum to nothing, 357 cases of whooping-cough to 7,

mumps from 23 to 1, and broncho pneumonia from 240 cases to one infection.

The progress of sanitary science will effect some radical changes in the near future in all the towns and cities of civilized countries. The ground on which they are built will be thoroughly underdrained, preventing the ground water from ascending above a certain height, and affecting the temperature and moisture of the surface of the ground. The houses will rest on foundations impervious to moisture, warm, commodious, with automatic ventilation, well supplied with pure air and water from rural districts remote from human habitation, and every convenience for the speedy removal of waste matter and sewerage and its rapid destruction. The streets will be wide, paved with some water-proof material, swept and washed daily, and freed from dust and dirt. No animals will be allowed on the streets or housed in the city. Automobiles will take the place of drays and carriages for the transportation of persons and merchandise. Some disposition will be made of the smoke and gases from larger industrial and manufacturing establishments to prevent contamination of the air. Large areas will be reserved for parks and hospitals, and sanitariums—large, commodious, and fitted up and furnished with every convenience and luxury—will be built at convenient and accessible points over the city, and no one of whatever station in life will be treated at his residence for any disease. Emergency stations will be established at every block, communicating with a central station, where notification of every case of sickness is received and steps immediately taken for its transportation to hospital. It will be possible for any city or town, with such an organization of its Health Department and these conveniences for the treatment of diseases, to have under perfect control all contagious and infectious diseases within their limits, and to prevent the great loss of life due to these causes.

Fundamental Pathological Ultimates.

As a foundation for rational therapy in gout and rheumatism, it must be borne in mind that in these disturbances we have to deal with a faulty condition of metabolism as the underlying cause, and symptoms vary as to the tissue or organ affected; defective elimination is an important factor in both—the skin, digestive organs and kidneys being at fault. These ultimate facts can be controlled by the mixed treatment suggested in the formula of Tri-Iodides, Henry, which contain all the constituents required a an eliminant.—*Med. Essays.*

INTRAVENOUS INFUSION OF THE NORMAL SALT SOLUTION.*

By VALENTINE TALIAFERRO, M. D., Richmond, Va.

My chief object in contributing this article is for the purpose of calling your attention and soliciting your interest in a means of saving life which in certain instances proves the most powerful, the quickest, and often the only means capable of accomplishing any good.

The intravenous injection of the normal salt solution has largely taken the place of direct blood transfusion in the treatment of many conditions in which blood was formerly used, and has proven equally as efficacious. Being decidedly less dangerous in its use, and more easily procured in such quantities as are desired, it is practically free from the objections urged against transfusion of blood.

The dangers and difficulties of this operation have been greatly overestimated, and it is perhaps on this account that many are deterred from its use, where it is plainly indicated. Even though it were dangerous and difficult, we should not fear to use it in those extreme cases where heroic measures are justifiable.

So many and so brilliant have been the results obtained by this method, literally bringing back into life those dying from great hemorrhage, or profound shock, that it must no longer be looked upon as a curious experiment, but as an established therapeutic measure of power and certainty.

After one has bled to death, over one-half of the blood still remains in the vessels, which is sufficient to sustain life if it can be kept in circulation. Where blood is lost the vaso-motor nerves cause the vessels to contract in proportion to the amount lost, thereby keeping up the normal pressure. Beyond a certain point this compensation fails with great suddenness. By increasing the bulk of the circulating fluid sufficiently to produce the proper tension in the vessels, the heart will resume and continue its work. The hot saline solution will powerfully stimulate the heart and contract the arteries. In pronounced shock without hemorrhage, the blood accumulates in the dilated veins, principally of the abdomen, the arterial pressure being lowered in the same way as in hemorrhage, the salt solution acting as in hemorrhage.

It is chiefly in the treatment of profuse hemorrhage and profound shock that the salines have their greatest field of usefulness, acting

* Read before the Tri-State Medical Society of the Carolinas and Virginia during the session held in Richmond, Va., February, 1901.

here with truly magical effect. Success so surely follows this method in hemorrhages from any cause, which are so profuse as to immediately threaten life, that he is guilty of gross neglect who fails to offer this chance of recovery to any who are in extremis.

It is the obstetrician and the gynecologist who is so often called upon to combat those sudden, profuse and rapidly fatal hemorrhages, to whom this life saving means should most strongly appeal. How many poor women have bled to death! I dare say there is not one among us who has not seen such an ending. Standing in the presence of this grim and deadly enemy, who has not felt powerless to loosen its dreaded grasp? With the means now at our command we can fill and contract the emptied vessels, stimulate the heart, keep up the circulation, stop the bleeding, and restore to safety those who are in imminent peril.

In prolonged surgical operations and accidents, it is usually not the hemorrhage which we dread, for this can generally be controlled; but it is the inevitable shock which is so often rapidly fatal. There is nothing known to us which is so potent in its relief, so rapid in its action, or so certain in its effect as large infusions of hot salt solution.

Some other grave and interesting conditions which are amenable to saline infusion, I will briefly mention. A usually fatal complication or termination of diabetes mellitus is diabetic coma. More than one half the cases of diabetes terminate fatally in this condition. The coma is generally brought about suddenly by excessive exertion, great mental strain or nerve depression. The two theories most generally accepted upon which this symptom is immediately dependent are the want of alkalinity of the blood, and the absorption from the alimentary canal of toxic substances. The presence of acetone in the blood is, perhaps, another cause. But setting theory aside, certain it is that in the coma of diabetics there is great decrease in the alkalinity of the blood, and by correcting this abnormal condition we are favoring, to the best of our ability, a prolongation of life. By restoring to consciousness and staying the advent of death, which the infusion will always do, even for a short while, sufficient time may possibly be gained to re-establish renal activity, and thereby avoid a fatal termination. Here it is the saline infusion, upon which we must depend, acting both as a local and systemic diuretic, and increasing the alkalinity of the blood. In profound diabetic coma we can hope for but little permanent good from this measure, but even here we can bring our

patients into a state of consciousness, lasting from a few minutes to hours, and, occasionally, with permanent benefit. It is in coma of milder degree, and especially in threatened coma, that the saline acts most satisfactorily, but it must be used early and in large and repeated quantities.

In the recent epidemics of cholera, in those cases of rapid waste and collapse from exhaustive diarrhœa, saline infusions have been extensively used and with great benefit. In excessive diarrhœa, persistent vomiting and acute anæmia, infusion, if not deferred too long, offers every hope of success.

Recently, in France, great interest has been revived in this procedure by the experiments of M. Claisse, Lejars, Duret and others. By what is known as "lavage of the blood," it is claimed that toxic principles can be rapidly removed from the circulating fluid and grave septic conditions successfully combated. Certain infectious diseases are being treated by this method. We await their further reports with great interest.

The best method of performing infusion is of no little importance. There are many methods and instruments now in use for which superior advantage are claimed. The simplest and safest is the one which deserves our attention, the one to which we should give preference. The Aveling apparatus I find the best for both transfusion of blood and infusion of salt. Dr. Aveling invented his simple instrument in 1864, and with little modification it has remained the best to the present day. It consists of a rubber syringe similar to the Davidson, but made in one piece without valves or joints. Each end is provided with a silver canula and stop-cock. By knowing the capacity of the bulb the amount of fluid infused can be easily estimated. With this instrument the speed with which the fluid is introduced can be accurately regulated and the tension of the circulation readily determined. All of these are important points, and with no other instrument can they be so precisely regulated.

A prominent vein at the bend of the arm, preferably the median basilic, is usually chosen, though I prefer to go below the elbow, thus allowing the patient to bend the arm at will after the operation without pain or danger to the incision. Through an incision half an inch in length, the vein can be sufficiently exposed. Great care should be taken not to lose any of the patient's blood, and to prevent this a ligature is passed around the distal end of the vein and tied in a *single knot*. But one ligature is necessary, the valves preventing the

backward flow of the blood. A longitudinal incision is made with a sharp pointed bistoury into the vein, in proportion to the size of the canula used; I prefer this to the V-shaped incision, as there is less danger of entirely severing the collapsed vein and the incision is more easily united. The syringe should be completely filled before introducing it into the vein, and every precaution taken to prevent the entrance of air. Where the canula is removed a continuous suture closes the skin. Before the stitches are tightened, the ligature, which is tied in only one knot, is easily slipped off.

When we remember that with a saline solution the volume of blood can be increased to six times its normal amount without producing death from plethora, it should encourage us to use, without fear, a sufficient quantity of fluid to at least fill the depleted vessels. Four or five pints at a time are required in the worst cases, rarely less than two. A few ounces are of no avail, but the quantity must be determined at the time of the operation by the effect produced. By the resistance to the fluid infuses, the tension of the circulation is communicated to the hand which presses the bulb, enabling us in this way to avoid over distension. The pulse also affords valuable information, and should be carefully observed during the operation.

Plain water, even when in small quantities, quickly exerts a very deleterious action upon the whole of the circulating fluid, and will rapidly produce death. By this means the blood plasma is diluted and soon loses its normal alkalinity. By its physical action on the corpuscles they become swollen and pale, the hemoglobin is dissolved out, and their vitality lost. One drachm of sodium chloride to the pint of sterilized water, which has been strained, boiled and cooled to 110° or 115° F., is all that is necessary. The heat is an important factor, and should never be omitted.

I have performed this operation ten times, have assisted in several other operations, and have not yet seen an evil result follow. Nor have I seen a single case where the remedy failed to accomplish some good. Like many other measures which are considered difficult in their administration, or dangerous in their use, it is often delayed until too late to hope for success. If used in time, before the vital functions are damaged beyond repair, we can in the great majority of cases be assured of success.

I could detail, without end, cases of hemorrhage and shock reported by our ablest sur-

geons, which have been saved from certain death by the prompt infusion of the salt solution. Those who have tried it are unanimous in giving their hearty support. My own experience has been most gratifying, and I rely upon it when all else fails.

THE SIGNIFICANCE OF "RUNNING EARS." Treatment by the General Practitioner.*

By D. A. KUYK, M. D., Richmond, Va.,

Lecturer on Diseases of the Throat and Nose in Medical College of Virginia, etc.

No apology is, I hope, needed for a paper on so hackneyed a subject, for the idea is, even to-day, all too prevalent that a "running ear" is healthy—to check it is dangerous.

The ear should not be considered merely as "a hole in the head to hear through." Its delicate, intricate mechanism, its complex physiologic function, the vast importance of contiguous anatomical structures, entitle it to more careful study, more thoughtful consideration than is usually given by the general practitioner.

A suppurating ear is a condition usually considered far too trivial to receive attention by men who deal with the issues of life as occurring in diseases of the greater organs. Little do they think what a suppurating ear signifies, especially if allowed to pursue the destructive tenor of its way.

It signifies, by the disgusting offensiveness of a discharge, a most mortifying and unbearable existence for the patient, anything but a pleasant companion for his family and friends, but this is the least of all evils.

It signifies deafness, partial or total. The patient is thus debarred from many of the usual enjoyments of life; quite frequently the ambitions of youth are thwarted, often the means of earning a livelihood are thereby jeopardized.

It signifies by extension of the disease implication of the mastoid antrum, caries and necrosis of any or all parts of the temporal bone, and by perforation of this bone and escape of the pent-up pus, brain abscess, thrombosis of the lateral sinus, or of the internal jugular vein, pyæmia, and embolism in other organs than the brain, and perhaps death.

A very considerable percentage of the great mortality of infant and child-life is directly attributable to chronic aural suppuration and

* Read before the session of the Tri State Medical Society of the Carolinas and Virginia, during its session held in Richmond, February, 1901.

complications, and is also responsible for the death of many adults.

The subject then is of sufficient importance to demand attention and to invite study.

To whom do these unfortunates usually first apply for relief? Not to the specialist, but to the family physician; and it is he of all men who should be prepared intelligently to advise, if he does not care to treat the patient, and not to dismiss the case with a casual or random direction to wash the "ear with a little castile soap water," and thus satisfy his conscience and lull the patient into a soothing sense of false security, only to allow the disease to progress on its march of sure destruction, doing damage irreparable. He need not necessarily possess exact knowledge of the intricate anatomy of the internal or middle ear, or of its contiguous structures; only let him remember the serious results of an aural suppuration and then set actively and honestly to work.

He needs no expensive or extensive armamentarium, only a few simple instruments, whose use, with a little practice, is easily mastered.

A head mirror; one or two ear speculæ; a small tympanic knife; a fountain syringe; a nasal speculum; a tongue depressor; he might also, though not necessarily, have a tonsillotome, two sizes, small and large, and one or two adenoid currettes.

Of all the cases of chronic aural suppuration, adenoid enlargement causes about 70 per cent.; enlarged tonsils, 10 per cent.; various forms of nasal disease, 5 per cent.; the exanthematous fevers, foreign bodies, and all other conditions, 15 per cent.

One need not, therefore, search very deep nor very long to ascertain the cause.

Two conditions must be borne in mind, for each is in its own way most important.

First, an alternating or intermitting suppuration; this means insufficient drainage, simply because the perforation is high up in the drum-membrane and very small when we get merely the overflow, then the pus escapes until the cavity empties itself; there is a cessation until the cavity again fills up.

The perforation is so small that but a minute quantity of pus can escape; this quickly dies and offensive smelling particles come from the ear, or the pus accumulates in the canal until it fills, when, by a movement of the head, it escapes, occasionally the pressure becomes so great that the pus is forced out until it is relieved, then, for a time, there is no more discharge.

These are the treacherous cases that are likely to lead one astray, but they are also the most dangerous, for it is just in these that we are most likely to have mastoid involvement, or at least necrosis of the ossicles or of the surrounding bone walls.

Secondly, Pain, swelling and tenderness, either in the auditory canal, its upper and posterior portion, or directly back of it over the mastoid process.

This is most significant, for it indicates mastoid involvement and demands immediate and radical treatment.

Delay treatment or use improper treatment and the patient's life is imperiled. Treatment begun early in the course of the affection is usually most effective and gratifying.

The first step in the treatment should be directed toward removal of the cause, but even if the practitioner is unable to do so, active treatment of the ear should be at once instituted and persistently continued, for by so doing the sequelæ will be, if not entirely prevented, very much modified.

Cleanliness here is next to removal of cause.

The fountain syringe for this purpose is most useful, because the force of the flow can be so easily and exactly regulated; the flow is so constant that no shock, even to infants, is produced. Water and plenty of it (a pint for each ear is none too much) as warm as can be comfortably borne, rendered alkaline with borax, is the best agent for general use.

Repeat the washings frequently so that no pus may possibly stagnate in the auditory canal.

Don't forget the little manœuvre of pulling the tragus upwards and backward for youths and adults, downward in infants and children, thus straightening the auditory canal; forget this and you will get but little water into the canal, and though gallons of it be used, the ear will never be cleansed.

The ear drum can now be examined.

The perforation, whether high or low, if very small, should be enlarged; free drainage must be maintained. A few drops of a 20 per cent. solution of cocain in contact with the perforated drum for a few minutes produces often very considerable anesthesia; if a very young child or infant is the patient, general anesthesia will be necessary.

Enlarge the perforation, better have it a little too large than too small, it will, perhaps, any way heal over all too quickly.

Turn the patient on the diseased side for a few minutes for the sake of drainage; now wash out the ear thoroughly, and it is ready for medicament.

The range from which to select is very wide and the drugs numerous. As a rule the insufflation of powder, a practice much in vogue a few years ago, should not be used.

Saturated solution of boric acid and alcohol (95 per cent.) of each equal parts:

Mercuric bichlorid 1-2000 and alcohol (95 per cent.) of each equal parts: and

Nitrate of silver, 15 to 30 grains to the ounce, are each one of them in some cases most useful.

Astringents are sometimes of decided value; zinc sulphate, 10 to 15 grains to the ounce; zinc chlorid, 5 to 10 grains to the ounce.

A preparation named enzymol, made by the Fairchilds, has proven most beneficial in some of my most rebellious cases. These are only a few of the host of drugs and combinations of drugs that may be used, and occasionally one meets with obstinate cases, in which the whole list must be run through before relief is obtained.

As a rule the medication should not be too quickly changed; a pathological condition that has been months, perhaps years, in forming cannot be altered in a week or ten days.

Promptitude, patience and perseverance are the watchwords to be observed, if we would treat "running ears" to the satisfaction of the patient and with credit to ourselves.

FARADIC ANÆSTHESIA, OR SEDATION AND GALVANIZATION USED SIMULTANEOUSLY.

By ALEXANDER IRVINE, M. D., Cooper, W. Va.,

Late Superintendent "Sheltering Arms" Hospital, Kanawha, W. Va.; Associate Physician Flat Top Coalfields, Cooper, W. Va.

I wish to suggest this method in the treatment of certain uterine diseases by electric currents. It has been found necessary in inflammatory diseases of the uterus and *adnexa*, to produce faradic anæsthesia or sedation by high tension induced coils, both before and after the use of the galvanic current. By the simultaneous use of both currents, you are enabled to use a much stronger galvanic current, as the anæsthesia is kept up all the time.

My method of using it is as follows: First introduce a bi polar vaginal electrode (use high tension coil) and produce anæsthesia, then withdraw bi polar vaginal electrode and introduce vaginal speculum, then introduce positive or negative uterine electrode as the pathological indications call for, withdraw your speculum, leaving the uterine electro *in situ*. This is

done easily, by steadying the electrode with one hand, so as to keep it from slipping out of the uterus, while with other hand you remove speculum; you then reintroduce the bi polar vaginal electrode and current, with high tension faradic coil, turn on current as in start, so as to keep up the anæsthesia. You have both galvanic and faradic machines going at the same time. The faradic anæsthesia is kept up all the time. This will prevent almost all pain from the use of the galvanic current; of course, the uterine electrode is thoroughly insulated, except the part contained in the uterine cavity. In pelvic adhesions, the carbon-ball electrode can be used at the same time with the bi polar electrode connected with high tension faradic coil. Simply introduce an insulated tube into the vagina, you introduce the carbon ball electrode through the tube, large size rubber tube can be used. This method is of great value in increasing both the vaginal and intra uterine tolerance of the galvanic current. In many cases, bi polar rectal anæsthesia will very much increase the vaginal and uterine tolerance to the galvanic current.

Analyses, Selections, etc.

Localization of Brain Tumors.

In a valuable paper by Dr. Chas. K. Mills, of Philadelphia, read before the Philadelphia Neurological Society January 28, 1901 (*Phila. Med. Jour.*, April 20, 1901), the author states that "during a little more than a year past, I have examined and given opinion as to the site of lesion in five cases of brain tumor, and in a sixth case which proved to be one of softening and degeneration, but in which the diagnosis of tumor was considered probable." "All of these cases were operated upon by Dr. W. W. Keen, and one by Dr. W. J. Taylor. The operation in each case revealed the lesion in the location previously indicated."

In CASE I—*Tumor of the superior parietal convolution (parietal convolution of Wilder). Localizing Symptoms.*—Impairment of cutaneous sensibility, loss of muscular sense, astereognosis, ataxia, paresis and ultimately paralysis—the localization of the lesion in the parietal region was decided upon chiefly by a study of the sensory symptoms. Almost all the sensory elements which go to make up the stereognostic sense were more or less impaired in the comparatively early history of the case. True motor paralysis was at this stage absent, although it not only ensued, but became a prom-

inent and masking feature as time progressed, and as the tumor encroached more and more upon the motor region. The paresis was at first undoubtedly a pressure manifestation; later, the Rolandic subcortex and, to some extent, even the cortex, became implicated. After fourteen months since the operation by Dr. Keen—conducted with the view of uncovering the superior parietal convolution as the central point of procedure—the patient remains in good general health, and improves as regards the use of his upper extremity.

In CASE II—Tumor of superior parietal and middle portions of the central convolutions. Localizing Symptoms.—Impaired cutaneous sensibility; loss of muscular sense; astereognosis, ataxia and late paralysis. The diagnosis of a lesion, in large part, postero-parietal, was based chiefly on the presence of sensory phenomena. Six days before operation the patient had a severe attack of tonic spasm in the right arm, which lasted fifteen minutes. This symptom was probably indicative of invasion or irritation of that portion of the motor subcortex related to the arm centre. It was long since pointed out by Seguin and the writer that paresis, with predominance of tonic spasm, pointed to a subcortical lesion in the motor zone.

In CASE III—Tumor of superior parietal convolutions. Localizing Symptoms.—Impairment of muscular sense, astereognosis, ataxia, paresis. Operation showed a sarcoma of the right cerebral hemisphere with practically the same location and extensions as in the two previous cases. Recovery. Dr. Mills believes that, in a cerebral case, with impairment or loss of cutaneous and muscular sensibility with astereognosis, we can with certainty look for the lesion or that portion of it which causes these symptoms, in that part of the brain which lies between the post-central and occipital convolutions, and especially in the superior parietal convolutions.

It is probable that the recognition of the various forms of sensation and the stereognostic sense may not be as highly developed in the right hemisphere as in the left, although their centres of representation are present in both hemispheres in the same locations. Just as the left half of the brain is the leading half for such highly evolved and differentiated faculties, as speech, writing, righthandedness, word-hearing and word-seeing, so it is probable that the stereognostic sense and the elements which enter into it have their higher evolution in the left hemisphere. If this be the case, a

lesion of the right hemisphere might not give symptoms referable to these senses of so decided a character as lesions of the left hemisphere.

Psychical symptoms of a definite character are usually present in lesions, especially destructive lesions, of the region anterior to the motor zone. "Investigators have found more or less mental degradation to be the result of ablation or partial ablation of these (prefrontal) lobes—the animals losing the faculty of close attention and intelligent observation; and undoubtedly impairment and disturbance of a peculiar character occur both in the lower animals and in man from lesions in this portion of the brain. The higher and more complicated mental processes—those which involve such faculties as attention, judgment, comparison—are always affected. Inhibition is impaired. Destruction of these lobes causes disintegration of the personality and incapacity to form serially groups of images or representations—more or less psychical dissolution occurring according to the extent of the lesion. Hesitation, uncertainty, fear, lack of force, weakness of the highest faculties, and motor disquietude, due to loss of control, may be present."

The mental change in Case III showed itself rather as irritability, emotionality and lack of continuous effort which come from a painful and nagging intra cranial lesion than in the signs of psychical dissolution.

In CASE IV—Necrotic and degenerated area, main focus probably about junction of inferior parietal (subparietal) and first convolutions. Localizing Symptoms.—Astereognosis, diminution in pain and temperature senses, word deafness, word blindness, amnesic aphasia, lateral homonymous hemianopsia and late hemiparesis. Both before and after the operation, there was a distinct amount of albumin in the urine, and at times hyaline casts. Right-sided paralysis was at first almost total, as also aphasia, and the auditory, visual, sensory and other defects studied before the operation. The hemiplegia improved after operation so that the patient became an office patient.

Two other cases are more briefly and less systematically reported. From a study of all six of the cases, the author draws the following conclusions:

The diagnosis of the existence of a brain tumor can sometimes be made even in the absence of most of the general symptoms, such as optic neuritis, headache, vertigo, and vomiting, chiefly by the close study of localizing and invasion symptoms.

Emotional states, even hysterical stigma, are

sometimes present in cases of brain tumor, and must not be given too much weight in differential diagnosis.

Tumors of the posteroparietal region, and especially of the superior parietal lobule (parietal of Wilder), give as their most important localizing symptoms disorders of cutaneous and muscular sensibility, and especially astereognosis; other symptoms often present in such cases are the result of compression or invasion of adjoining regions.

Tumors and other lesions implicating the angular gyri and the regions adjoining (the subparietal, first temporal and mediooccipital convolutions), give as their main localizing symptoms word deafness and word blindness, with the usually accompanying speech disturbances, lateral homonymous hemianopsias and disorders of cutaneous and muscular sensibility, including astereognosis. Although it is possible that these disorders of sensibility in the case cited may have been dependent upon invasion of the superior parietal lobule.

Just as the centres for hearing, vision and speech are more highly differentiated in the left hemisphere, so it is probable that the stereognostic sense is more highly evolved in this hemisphere.

A tumor strictly confined to the motor regions does not give objective sensory phenomena of a persisting character; the localizing symptoms of a growth so situated are motor, chiefly paralysis and monospasm, with also exaggerated deep and superficial reflexes.

In tumors of the motor subcortex tonic spasticity is usually a marked symptom. Paresis or paralysis, and exaggerated reflexes, with monospasm or unilateral convulsions, may also be present.

Tumors of the prefrontal region, by which is meant the region entirely cephalad of the motor zone, chiefly give psychical symptoms of an especial character; when the tumor is situated on the left side, motor agraphia (or orthographia) and motor aphasia are usually present because of the compression or invasion of the posterior portion of the second frontal and of the third frontal convolutions; paralysis and other motor symptoms are often present late because of encroachments upon the motor region.

Yellow Fever, Like Malarial Fever, Spread Probably Exclusively by the Mosquito.

An *Associated Press Dispatch* from Washington, D. C., dated April 17, 1901, states:

Surgeon-General Sternberg has just given

his approval, without reservation, to the report of the special board, composed of Surgeons Reed, Carroll, and Agramonte, upon the "Etiology of Yellow Fever," in which the conclusion was reached that the mosquito is responsible for the transmission of this fell disease.

Moreover, the medical department of the army is moving energetically to put into practical operation methods of treatment for the prevention of yellow fever, involving a radical reversal of existing methods which form the basis of the report.

To-day Surgeon-General Sternberg formally approved a circular prepared by Chief Surgeon Havard, at Havana, with this endorsement: "In my opinion, the present state of our knowledge fully justifies the publication of this circular."

The general orders provide for the liberal use of coal oil to prevent the hatching out of mosquito eggs. The circular says:

The recent experiments made in Havana by the medical department of the army having proved that yellow fever, like malarial fever, is conveyed chiefly, and probably exclusively, by the bite of infected mosquitoes, important changes in the measures used for the prevention and treatment of this disease have been found necessary.

So far as yellow fever is concerned, infection of a room or building simply means that it contains mosquitoes which have been fed on yellow fever patients. Therefore the means of prevention must be the destruction of these mosquitoes. The most effective of the measures is fumigation, either with sulphur, formaldehyde, or insect powder.

The washing of walls, floors, ceilings, and furniture with disinfectants is unnecessary.

Persons taking care of yellow fever patients need not be isolated; they can attend other patients and associate with non-immunes with perfect safety to the garrison.

Malarial fever, like yellow fever, is communicated by mosquito bites, and therefore requires the same measures of protection against mosquitoes. On the assumption that mosquitoes remain in the vicinity of their breeding-places, or never travel far, the presence of malarial fever at a post would indicate want of proper care and diligence on the part of the surgeon and commanding officer.

Book Notices.

Diseases of the Eye. By KENT O. FOLTZ, M. D., Professor of Ophthalmology, Otology, Rhinology and Laryngology in the Eclectic Medical Institute, Cincinnati, etc. With 193 Illustrations and 4 Plates in Colors, and Chromo-Lithographic Frontispiece. Cincinnati: The Scudder Brothers Co. 1900. Cloth. 12mo. Pp. 566. \$2.50.

We are told on the title-page that this is "a handbook of ophthalmic practice for students and practitioners, in which particular attention is given the treatment of diseases of the eye by eclectic medication." It is a good book for the practitioner, and there is very little in it that is not recognized as good practice by the regular physician. Indeed, unless one read the title-page, he would not know but that he was reading good advice as to diagnosis, treatment, etc., as in the works by authors in the regular profession. Almost without exception, in the standard books on the eye, little attention is given to internal medication in the treatment of eye diseases; and yet drug action is the same in ocular lesions as in diseases of other organs of the body. This fact, however, is too much ignored by the usual run of specialists of to-day. The publishers have issued the book in a neat style, with clear type, etc.

Panama and the Sierras—A Doctor's Wander Days By G. FRANK LYDSTON, M. D., Illustrated from the Author's Original Photographs. The River-ton Press, Chicago. 1900. 12mo. Pp. 283. Cloth. \$1.75, prepaid.

Dr. Lydston made for himself quite a name in general literature by his venture, entitled "The Tales of a Talkative Doctor." In the profession his reputation has been widely extended because of his contribution to medical literature, and his professional ability. The present book is essentially a sketch book of travel in a part of the American continents which is always full of interest. It is devoid of the dry, unessential data and description that characterize most books of travel. The author has made three trips across the Isthmus of Panama which furnish him an intimate and familiar understanding of this most picturesque region. Every page is entertaining and instructive. The book is divided into short sections, and numerous illustrations, and a steady reading of a few hours would complete it. Anecdotes, facts, descriptions, even pathos at times, fill the pages.

Diseases of the Heart: Diagnosis and Treatment.

By ALBERT ABRAMS, A. M., M. D. (Heidelberg), F. R. M. S., Consulting Physician for Diseases of the Chest, Mt. Zion Hospital and the French Hospital, San Francisco. Chicago: G. P. Engelhard & Co. 1900. Cloth. 12mo. Pp. 170-viii. \$1.00 net.

This is a really valuable book—dealing with the subject of diseases of the heart entirely from a practical aspect. The author's methods of diagnosis are all simple and clearly stated, so that the student, as well as the graduate, may use the book with equal advantage. The therapeutics recommended is such as has the approval of experience and observation. An excellence of the book is the amount of plain common sense it contains. The article by Dr. Satterthwaite in the current issue of this journal may well be read with this book. As simple as it appears, we have seen any number of errors made in diagnosing heart diseases, simply because the examiner exhibited no system in his examination. If the examiner follows the directions so plainly stated in this little monograph, he is not apt to be led into error, or at least will avoid some of the ludicrous diagnoses which the consultant has to explain away in a delicate manner. The illustrations are original and well bring out the points desired. In all future issues of scientific works, which sometimes have to be consulted in a hurry, we would be glad to see the old style of leaving leaves uncut by the binder abolished. It saves time of the doctor, and adds nothing to the expense of the issue. So good a book as this ought not to be marred by the rough edges of the leaves due to their being cut by the owner.

Urinary Diagnosis and Treatment. By JOHN W. WAINWRIGHT, M. D., Member American Medical Association, etc. Chicago: G. P. Engelhard & Co. 1900. Cloth. 12mo. Pp. 138. \$1.00 net.

This is another one of those uncut page books. Otherwise the publisher has issued the work in a most attractive style. It is embellished by sixteen full-page colored-plates, illustrating various microscopic conditions of the urine and bladder debris, or that coming from the ureters, kidneys, etc. These plates are especially well-drawn and satisfactory. A number of engravings are also scattered through the pages. "This book gives not only all the usual methods of urinary examinations, but introduces also a new feature in works of this character, viz.: a discussion of the clinical significance of the urinary findings and their practical application in treat-

ing the diseases of which they are symptomatic."

Physical Diagnosis in Obstetrics. By EDWARD A. AYERS, M. D., Professor of Obstetrics in the New York Polyclinic, etc. With Illustrations. New York: E. B. Treat & Co. 1901. Cloth. 8vo. Pp. 276. Price, \$2.00.

This is a new book, although it has been published serially in *Obstetrics*. The author has been a teacher of obstetrics for eighteen years. He has found need for a book guide which follows the same order in its treatment of obstetric bed-side study as is pursued by institutions devoted to this work; hence this publication. It is intended as a "guide in antepartum, partum, and postpartum examinations for the use of physicians and undergraduates." It is a *clinical* book—consisting chiefly of diagnosis and treatment. It is interesting to note the changes in obstetric practice and teaching in the last twenty years or so. Everything nowadays of course is antiseptic or aseptic. Antepartum examinations are now required in all good clinical teachings. And yet even "middle aged men of to-day are living witnesses to the practice that consisted mainly in seeing women for the first time only when in labor." It appears to us a great oversight that such a book as this referring to so many odds and ends of information should have been allowed to go out from the press without an index. The table of contents is not sufficient to materially assist the doctor in haste to inform himself about a point he knows he has read in the work. We trust this oversight will be remedied when the next edition is called for.

Editorial.

The Parasite of Cancer.

During the meeting of the Johns Hopkins Hospital Medical Society, April 15, 1901, Dr. Harvey R. Gaylord, of Buffalo, N. Y., Professor of Surgical Pathology, University of Buffalo, and Chief of Clinic of Buffalo General Hospital, by invitation, delivered an address recounting his recent discovery of the parasite of cancer. He is Director of the New York State Pathological Laboratory, and Professor of Surgical Pathology in the University of Buffalo.

Through the assiduous energy of Dr. Roswell Park alone, the New York Legislature appropriates a yearly amount for the support at

Buffalo of the only laboratory in the world devoted exclusively to cancer. Dr. Park believed that cancer was caused by a parasite; hence, he was convinced of the great benefit which might ultimately spring from a State Cancer Laboratory. Three years ago, Dr. Gaylord was called to take charge of the scientific part of the work for the investigation of cancer. Dr. Gaylord goes on to say:

"The fresh cancerous tissue removed from a female patient of Dr. Roswell Park was inoculated into the jugular vein of a dog. Twenty-two days after the inoculation, the animal died. An autopsy was performed and a distinct cancer was found in the lung.

"The fact that San Felice, at this time, arrived at the same result and succeeded in cultivating an yeast as the cause directed us to his work. Drs. Russell and Plimmer, of England, also cultivated an yeast, which, injected into a dog, caused a growth resembling a cancer. But Dr. Plimmer has written to me only lately that neither he nor San Felice, who has inoculated 70 dogs at two different times, making 140 in all, have succeeded again in forming this growth.

"In the summer of 1899, I was sent to Europe by the State to examine the results of Plimmer, San Felice and another physician in Paris whom both Dr. Thayer, of the Johns Hopkins, and myself visited, and whose claims are unfounded. The bodies which Dr. Plimmer and Dr. San Felice examined, I am convinced are the protozoon which I shall describe to night. Unfortunately, in the one case they succeeded in cultivating an yeast contamination.

"Upon my return, I was diverted long enough to repeat all of their experiments, with the result that I have succeeded in proving the difference between their yeasts and the real cause of cancer.

"It is only fair to state that Prof. L. Pfeiffer, of Weimer, Germany, described this protozoon as the cause of cancer as far back as 1891. In fact, Prof. Welch yesterday showed me a second contribution to this subject, only recently written by Pfeiffer, which describes results precisely similar to mine. The existence of this second volume of Pfeiffer's was entirely unknown to me until shown to me by Prof. Welch. He reaches the same results by, of course, different methods.

"In January of last year, Dr. Sjoebing, of Lund, Sweden, sent us a copy of an article in which he stated observations precisely like ours.

"Now, the organism of cancer has a distinct

cycle of development analogous in slight degree to the malarial plasmodium, but precisely as far as we can at present determine, like the organisms which occurs in vaccine lymph. That is, it passes through seven stages. In its early stage it is a fine minute form, like the coccus of bacteria.

"In its highest form it appears like a white blood corpuscle, except it has a number of hyaline bodies in it which resemble fat.

"If fresh cancer is examined, a number of the intermediate forms are found by placing some of the tissues in a hanging drop, when the hyaline forms will rise to the top by their low specific gravity and the cells and other parts of the tissue sink to the bottom.

"These are distinguished from fat by not dissolving in ether or staining in osmic acid as fat does.

"By using the method of Prof. Funk and injecting the vaccine bodies into the cornea of a rabbit, I was able to show that vaccine bodies developed just as the cancer protozoon does, but the latter develops more slowly.

"Dr. Eisen, of San Francisco, observed one of the intermediate forms in cancer cells, which he called amœbe, because they send out little projections of protoplasm. He is a biologist, and therefore did not pursue his researches along medical lines.

"Now, the method which I pursued in experimenting, was to take the fluid from the abdominal cavity from patients operated on for cancer. This gave a practically pure culture of the cancer organism, mostly in its hyaline form. One cubic centimeter or two of this fluid was inoculated into one hundred animals, dogs, rabbits, guinea-pigs and mice, and these same organisms were recovered from the various organisms of the animals in every case examined. In twelve of the animals distinct cancers were formed. It is my idea that the amount of infectious material was too great for the animals in the other cases and they died from acute cancerous infection. Bacteriological examinations were made in every case with negative results.

"Dr. Sjoebing, of Sweden, has succeeded in making a medium of human fat upon which the cancer protozoon will grow, and when inoculated into animals causes cancer.

"Toward the death of a person with cancer these bodies were found by us in the blood. When they are injected into animals they may be recovered from the animal and reinjected indefinitely.

"In a piece of cancer dried for four months in our laboratory, infection from the protozoon resulted when it was injected.

"Pfeiffer, Plimmer, San Felice, Sjoebing, Funk, Eisen and others are deserving of as much credit as any one. I do not claim to advance this as my own work alone."

Dr. Gaylord exhibited a number of lantern pictures illustrating the various stages of the parasite.

Subarachnoid Spinal Cocainization.

During the session of the Florida State Medical Association, held in Jacksonville, April 10 and 11, 1901, Dr. Edward N. Liell, of Jacksonville, Fla., read a paper on this subject, an original synopsis of which has been kindly furnished this journal.

Dr. Liell presented the results of his personal work and observation in this new field of surgical anesthesia. By this procedure complete insensibility to pain usually results from the umbilicus and even from the axilla to the toes—patients retaining their full mental faculties. Operations upon the lower extremities, the genito urinary tract, the abdominal and pelvic organs, the kidneys and bladder, all seem specially well adapted to this procedure. True anesthesia is not produced, but complete analgesia only, lasting for a sufficient length of time, however, to admit of the performance of any operation below the regions stated.

After a historical research referring to the work of Corning, Tuffier, Kreis, Marx, Goldman and others, Dr. Liell reports two cases of his own in which he used the method, each with complete success. One was for curettage of the uterus, the patient having 20 minims of a 2 per cent. solution of cocaine hydrochlorate. Anesthesia was complete in twelve minutes and lasting one hour and twelve minutes. The second case was one in which he performed three operations: Curettage of the uterus, trachelorrhaphy and perineorrhaphy—all at one sitting. In this case also 20 minims of a 2 per cent. solution was injected, anesthesia being of one hour and a half duration.

Vomiting and headache was present in both cases, but not severe. In each case the pulse rate and temperature was increased—the former rising in the second patient to 116 and the temperature to 100.5°, but disappearing within twenty four hours. The essentials of technique include a thorough asepsis as to needle, syringe, and preparation of the area over the seat of puncture. The author prefers boiling the cocaine solution one minute. Two minutes should be taken to complete the injection, 20 minims of a 2 per cent. solution being used to commence with. If no analgesia results after waiting fifteen minutes, a second injection is to be given.

The skin at the seat of puncture should be anesthetized with cocaine or by ether spray, preliminary to introduction of the gold needle, the latter being from three to three and a half inches in length. The escape of cerebro-spinal fluid, drop by drop, marks the entrance of the needle into the subarachnoid space or spinal canal.

The point of puncture is one of election as to interspinous space, either the second, third, or fourth lumbar space commending itself.

As a guide to the seat of puncture, a point midway between the spinous processes and about one-half inch to the right or left of the median line can be taken. Some patients are readily influenced by small doses, others requiring considerably more; the hyperæsthetic and nervous person being a type of the latter. Disappointments—either partial anæsthesia or absolute failure—have been met with occasionally by various operators, necessitating resorting to general anæsthesia. These may result from inert cocaine solution, idiosyncrasy, faulty technique, etc. Disagreeable features or post-operative symptoms usually met with, are headache, vomiting, vertigo, temporary rise in pulse, temperature, etc.

St. Vincent's Hospital, Norfolk, Va.,

Was formally opened to the public with appropriate exercises Thursday afternoon, April 18, 1901. There were speeches by the Mayor of the city and others, including Dr. R. L. Payne, of Norfolk, Va. St. Vincent's was in great part destroyed by fire over a year ago, at which time eight lives were lost. We notice that still another fire—due to a defective flue—occurred on the night before the re-opening. However, this time the blaze was extinguished with practically no loss. It is reported that the cost of rebuilding the hospital since the fire in the winter of 1899 has been nearly a quarter of a million of dollars.

To Honor Dr. James B. McCaw.

On the night of April 25, 1901, a banquet will be tendered Dr. James B. McCaw at the Commonwealth Club of Richmond, Va., by the profession of this city. Dr. McCaw graduated in medicine from the University of the City of New York in 1843, and has led a remarkably active and useful life in the profession. In 1860, he was elected Professor of Chemistry in the Medical College of Virginia, which chair he filled for twelve consecutive years. Then he was chosen Dean of the College and Professor of Practice of Medicine, which positions he held for sixteen years—being elected Emeritus

Professor in 1888. During the war between the States he served the Confederacy as medical director of the five Chimborazo hospitals at Richmond—having under his charge during that period 71,000 patients. From 1853 to 1861, he was editor of the *Virginia Medical and Surgical Journal*—long ago extinct—and during the War he edited the *Confederate States Medical and Surgical Journal*. He was a Charter Fellow of the Medical Society, and was chairman of the convention of doctors of the State when, in 1870, it was organized. For years he has been a Resident Honorary Fellow. He took active interest in the local medical societies—always receiving their honors. Dr. McCaw has been identified with many public interests of the city and States.

Birth After Death—A Medico-Legal Question.

A curious case is being investigated in the courts of one of the southwestern counties of Virginia, according to newspaper reports. A wife who was pregnant died and was buried. Some days afterwards suspicion of murder by the husband was so strong that the body was exhumed for examination. On opening the coffin an infant was found between the thighs of the dead woman, as if it had been born after death. It is stated by those who had charge of her body preparatory for the burial that the infant was not there before the coffin was sealed. Such sensational statements are being made about the case in the newspapers as we go to press that we are not prepared to vouch for the facts. Various hypotheses have been suggested in explanation of a birth after death. But we are not willing to commit ourselves to an opinion until a more definite and reliable statement is made. In the few medico-legal volumes that we have had opportunity to examine in haste, we find no allusion to such a case. Is this something entirely unique, or are newspaper reports of the case reliable?

Dr. A. S. Priddy, Keysville, Va.,

For several years the able representative of Charlotte county in the Virginia Legislature, has recently been elected Assistant Superintendent at the Southwestern State Hospital, Marion, Va. So often has Dr. Priddy come to the rescue and been the champion in our State Legislature for advanced medical laws, advocated by the Medical Examining Board, State Board of Health, and Medical Society of Virginia, that—although we must congratulate the Southwestern Hospital upon the selection made—we necessarily feel the loss of his valuable services, and ask, "Whither shall we go for aid?"

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INSECTS AS DISSEMINATORS OF DISEASE.*

By CH. WARDELL STILES, Ph. D., Washington, D. C.
Zoologist United States Bureau of Animal Industry.

It is sometimes charged that scientists make public too many facts concerning microbes, and that at the present rate, the laity will soon either become disgusted with hygienic research or will come to the belief that death lurks in everything we eat, drink, touch, or breathe.

That wild hygienic theories and speculations have at times been launched upon the public cannot be denied, and some men have undoubtedly laid themselves open to censure by rushing into print with unjustified conclusions based upon scientific dreams. Let us recall, however, that until the cause and method of dissemination of a given disease are known, the hygienist whose duty it is to guard against that malady must take into consideration all imaginable possibilities. When, on the other hand, the cause and source are once matters of positive knowledge, effort may be intelligently concentrated, and the preventive measure given a definite direction.

The case is much the same as in military operations. If you know either from information obtained by your scouts or from a technical military or geographic knowledge, that your enemy must take a certain route, your plan of campaign is much easier than if the opposing force may arrive by any one of twenty different roads.

Individual workers in the medical sciences are the nation's scouts in hygienic matters, to determine by exactly what route our microbial enemies arrive, just as military scouts learn the enemy's movements or as the traveling sales-

man and government consuls are the scouts for a nation's trade. Some erroneous reports are occasionally brought in, and not every Funston captures his Aginaldo, but boards of health and other sanitary organizations form clearing houses for the scattered investigations; the reports are tested; some are verified, others disproved, and the general plan of campaign against the disease is determined.

When it is definitely proved by what route our microbial enemies arrive, it is clearly proper to lay the matter before the public—not for the purpose of causing alarm, but in order to enlist co-operation in fighting disease, thus protecting human life and both local and national prosperity.

That some of the hygienic measures recommended to the public do not meet with immediate popular approval or even credulity need not cause surprise, for many of the views advanced are so—shall I say—*romantic* in character, that even experienced scientists call for a confirmatory demonstration of the claims advanced before they are willing to accept them.

This evening I invite your attention to a few of these biologic romances in connection with the subject of disease.

Insects must be looked upon as among our best friends and worst enemies. Some insects are instrumental in the spread of the pollen by which certain plants are fertilized, and they are thus important factors, not only in beautifying our surroundings, but also in the economies of the country; destroy all of the bees and you will destroy one of the important forage plants—namely, clover. Other insects are injurious to plants or animals; it is estimated, for instance, that certain flies cause an annual loss of about \$50,000,000 to the cattle industry of the United States. Still other insects are active in the dissemination of disease germs; a certain mosquito in Italy is the normal carrier of a malady which causes that country 15,000 deaths and about

* Annual Toner Lecture, delivered at Georgetown University, April 12, 1901.

3,000,000 cases of disease per year. When we consider the aggregate human suffering involved and the economic loss brought about by this mosquito, our imagination is almost staggered. Assume, for instance, that these 3,000,000 patients average a loss of one dollar—surely a very low estimate—in time taken from work, in doctors' bills, in drugs, funeral expenses, etc., etc., and we obtain the total of \$3,000,000, in addition to the pain endured, and the economic loss through death.

The insects which come more especially into consideration in connection with the diseases of man are mosquitoes, flies, and fleas; and when we turn to the diseases of animals, we must add to this list the ticks and crustaceans, two groups of arthropods closely related to insects.

Let us now distinguish between two general classes of diseases—first, those which must necessarily be transmitted by insects; and secondly, those in which insects are only accidental though in many cases important factors. Thus, malaria is normally transmitted by mosquitoes, and is dependent upon them; kill off mosquitoes and malaria will disappear. Typhoid fever, on the other hand, may be transmitted by flies, yet it is not dependent upon them; kill off all flies and you will undoubtedly decrease typhoid; but since insects are only accidental and not necessary spreaders of this malady, such measures will not eradicate it.

We may lay down two general biologic rules, which, I believe, are enunciated to-night for the first time: *The first rule, to which at present a few exceptions are known, is that diseases which are accidentally spread by insects are caused by parasitic plants, particularly by bacteria. The second, to which no exceptions are as yet known, is that those diseases which are dependent upon insects or other arthropods for their dissemination and transmission are caused by parasitic animals, particularly by sporozoa and worms.*

Let us now turn to the germs which cause certain diseases, and follow their transmission.

You have all heard that during the recent war with Spain many cases of typhoid fever occurred among our troops, particularly in certain camps, and you have read that the germs were spread by flies. For nearly thirteen years it has been known that if the typhoid bacillus is fed to flies, virulent germs can be found in the fly specks. This fact has been demonstrated by experiment. We do not, however, have to as-

sume that the insects must swallow germs in order to disseminate them, for by simply lighting upon typhoid discharges they soil their feet and mouth parts with the bacilli; then flying to the kitchen, the pantry, or dining room, and lighting upon food, insects can spread typhoid to articles of diet, and thus disseminate the disease. There can, in fact, be scarcely any reasonable room for doubt that typhoid was spread among the troops in this manner.

Likewise the germs of tuberculosis have been fed to flies, and twenty-four hours later the bacilli have been found in the fly specks. Insects can also carry the bacilli on their feet and mouth parts after feeding on tubercular sputum.

Among the other diseases which may be disseminated in this way, we may mention in particular Egyptian ophthalmia, Florida "sore-eye," and Asiatic cholera. For the first two maladies, the evidence is based on observation, but the facts at hand are so complete that they can scarcely be doubted. In case of Asiatic cholera, however, the bacillus which causes the disease has actually been found in flies caught in a room where post-mortem examinations on cholera cadavers were being made.

What now are the practical lessons which we should draw from these facts—practical lessons not only for the medical fraternity, but also for the laity, and especially for the housewife? A moment's thought will show that they are: *First*, prevent flies from breeding; *second*, keep them away from diseased material; *third*, keep them away from our food—three propositions which at first thought may appear purely theoretical, but which, nevertheless, are thoroughly feasible.

You have all heard of anthrax or malignant pustule, which affects both man and live stock. It is quite generally supposed that this malady is transmitted by the bite of flies and mosquitoes. There is not, however, very much evidence in support of this view, and all the experimental evidence as yet available is contrary to it. It would, in fact, appear that the danger involved has probably been greatly exaggerated. If, indeed, anthrax were normally transmitted in this manner, we should expect to find it much more general than the malady really is, for biting insects are common around live stock, and they do not confine themselves to one animal, but fly from one to another. If, therefore, a case of anthrax appeared in a herd, the probabilities are that within a few hours, or a few days at most,

practically the entire herd, as well as the people in the vicinity, would be suffering from this disease. At present, we must admit that it is possible that anthrax may be disseminated in this manner, but at the same time it would appear that such transmission is probably the exception rather than the rule. It seems probable that one of the common methods of keeping this disease alive is the leaving of carcasses of anthrax animals on the fields. Cattle later chew the bones, and thus expose themselves to infection with anthrax spores. That biting insects would undoubtedly swallow the germs of this disease while sucking the blood of a sick animal, and thus disseminate the bacilli through their droppings, is, of course, possible; but all experimental evidence thus far accessible indicates that the germs rapidly lose their virulence in the insects' intestines.

Similarly it has been maintained that bubonic plague, erysipelas, and leprosy are transmitted by the bite of insects, but this theory cannot at present be admitted as of general application. Much more probable does it seem that insects may transmit these diseases in another manner. Suppose a flea, infected with bubonic plague, succeeds in reaching a healthy person, and the latter, in an attempt to allay the irritation caused by his unwelcome visitor, scratches himself and at the same time crushes the flea. The possibility is present that some of the germs from the intestine of the insect will be rubbed into the fresh scratch, and thus bring about the disease; or, since fleas deposit their excreta on the skin of their victims, the possibility is present that the germs enter the system by way of the wound caused by the flea bites, instead of by the act of biting on the part of the flea. From experimental evidence before us, these two possibilities must undoubtedly be admitted, not only in connection with fleas, but also with the itch mite. We must also admit the very high probability that flies transmit bubonic plague accidentally to the food, after lighting upon plague discharges. Finally, we cannot deny that even ants, which have fed on rats dying from plague, may perhaps spread the disease.

None of these facts or possibilities should frighten us or lead us to ridicule science for taking them into consideration, but all of them should induce us to take every precaution possible, especially in cases of bacterial diseases, to have the sick room scrupulously clean and free from insects of all kinds.

Let us now turn from bacterial diseases, the spread of which by insects is possible, to some of the diseases caused by animal parasites, and for the dissemination of which insects and closely allied arthropods are necessary.

Mosquitoes are positively proved to be necessary for the spread of at least two diseases in man, known as malaria and filaria disease, or Arabian elephant foot. Thanks to the efforts of two of our fellow-townsmen, Drs. Reed and Carroll, and their army colleagues, the present indications are that mosquitoes are necessary for the spread of yellow fever also. Now a curious, but from a biologic standpoint not an unnatural, fact is that each of these diseases requires a certain kind of mosquito.

Malaria is caused by a microscopic protozoan, which lives in the blood. In the common type of the malady it takes this parasite just forty-eight hours to complete its development, and every forty-eighth hour, corresponding to the time when your chill begins, each germ breaks up into about fifteen young germs. Assuming that you have only one of these minute parasites in your blood to-day, you may at this rate be the happy possessor of about 576,000,000,000 wriggling parasites after twenty days, each germ destroying a blood cell. This is compound interest with a vengeance, and leaves in the shade any Wall street accumulation as yet recorded.

If this rapid increase were to continue, every person who is once attacked with malaria would soon become skin, bones, and germs, and every case of malaria would inevitably be fatal. *Fortunately, however, it is a more or less common biologic law that protozoa which thus increase in geometrical ratio, by asexual reproduction, soon reach a point where further multiplication is impossible until the organisms pass through asexual stage. It is this law (the explanation of which is not entirely clear) more than all the doctors in the world combined which accounts for the comparatively low death rate of malaria.*

After a number of generations of asexual forms, male and female parasites appear in the blood, and these cannot reproduce further until they enter the body of a mosquito belonging to the genus *Anopheles*. The next generation forms in the mosquito, and the young parasites then reach the insects' salivary glands and are introduced into the blood of the next person bitten.

The insect which disseminates malaria in this

way is a small dapple-winged mosquito, with long antennæ; in a resting position its body is straight, and is likely to assume a posture at nearly right angles to the wall; and while screedingly it sings about four tones lower than does the ordinary mosquito glee club. The female lays from forty to one hundred boat-shaped eggs, which float around on the water, and in three days' time hatch out into larvæ. The latter swim around in the water, coming to the surface to breathe and feed; they assume a position nearly parallel to the surface, and being possessed of a "rubber neck," they can turn their head half way around so that the mouth appears to be on the back; after about sixteen days they turn into peculiar pupæ, which have very large heads and bear a more or less close resemblance to a lobster salad night-mare. Five days of fasting in this stage, and the adult winged mosquito issues and is ready to spread malaria, if conditions are favorable.

Another disease transmitted by mosquitoes, and more interesting to the biologist than to the patient, is known as filaria disease. This malady is caused by a worm. The adult parasite lives in the lymphatic system, while the embryonic worms swim around in the blood. Curious to relate, these embryos are found in the peripheral circulation only at night, or more properly speaking, during the hours of sleep. If certain mosquitoes, while sucking blood, swallow these embryos, the young parasites undergo a series of changes in the insect, and finally reach the salivary glands; from there they pass down the proboscis, and are inoculated into the body of another person.

In this instance the guilty mosquito is different from the one which spreads malaria. It possesses short antennæ, and belongs to the genus *Culex*. I have no illustration of this species (*Culex ciliaris*) here this evening, but can present to you its American first cousin, which sings tenor, and is rather likely to hold its hump-backed body more or less parallel to the wall when in a resting position. Instead of laying boat-shaped eggs, it deposits two hundred to four hundred ova, which are fastened together. Having become very proficient in the trick so long practiced by Columbus, the eggs are all placed on end and remain perpendicular. The larvæ hangs downward in the water, and the pupæ have smaller heads than we saw in *Anopheles*.

You have all heard of the important work

which General Sternberg's yellow fever commission is accomplishing in connection with this much-dreaded disease. I cannot show you the germ which causes this malady, for it is not definitely determined as yet. The mosquito in question is known as *Stegomyia fasciata*; it was formerly called *Culex fasciatus*, and is closely related to the form which transmits filaria disease. It possesses banded legs, and has conspicuous silver stripes on the thorax and abdomen. It breeds in standing water, and its larvæ and pupæ are much like the same stages of *Culex*.

It has thus far been shown that this insect, if it has fed on the blood of a yellow fever patient, may, after about twelve days, transmit the disease by means of its bite to a healthy and non-immune person. This discovery is of extreme value, and we may all well be proud that we can count the discoverers among our personal friends. It is, however, to be expected that until the germ which causes the disease is recognized, scientific men in general will be somewhat conservative in giving to this discovery its full apparent value from a standpoint of public hygiene. The fact that yellow fever is transmitted by the bite of the mosquito not until a considerable time—namely, twelve days after the insect has sucked blood, indicates very strongly that yellow fever is caused, not by a bacterium, but by a sporozoan. If this latter supposition can be demonstrated, then the conclusion will, from analogy, be warranted that mosquitoes, and probably only mosquitoes, can transmit this disease. If, on the other hand, the disease should be proved to be bacterial in nature, analogy would not at present warrant us in concluding that mosquitoes are either necessary to its transmission or that they are the only transmitters. As already stated, however, analogy at present points very strongly to a sporozoan as casual agent; and if this can only be proved, the importance of the discoveries already made by our friends will be far greater than is at present recognized.

The facts brought forward in connection with the last three diseases mentioned should convince us of the necessity of a public campaign against the mosquito. Practical zoologists and sanitarians see the possibility of killing off these insects and thus eradicating the diseases in question. This cannot, of course, be done all at once, but it can be done with comparatively little expense in all well-settled communities.

Viewed purely from the standpoint of dollars and cents, it would be an excellent business investment for malarial districts to eradicate mosquitoes.

In the Southern States there exists among the cattle a disease known as Texas fever. Its economic importance may be partially appreciated when we recall that a quarantine line runs across this country from the Atlantic to the Pacific, and that except during a few weeks in winter it is permitted only under stringent regulations to ship cattle from places south of that line to the northern markets, while driving the animals to northern pastures is prohibited. This disease is quite similar to malaria, being caused by a minute parasite in the blood. So-called cattle ticks act as transmitters of the malady. When ticks have filled themselves with blood, they drop to the ground and lay their eggs. The young of the next generation, although they have not been in contact with an infected steer, seem to have taken the disease from their mother, for they can transmit it to healthy cattle.

Another disease which may be mentioned in this connection is found among the live stock in certain parts of Africa, and is one of the most serious drawbacks to the country. It is caused by a minute parasite in the blood, and is transmitted by the so-called tse-tse fly. If these flies bite a horse it may be dead in a few days.

The last disease I will mention is one of considerable historic interest, and is among the oldest maladies known. It is caused by a worm, which is, or at least by some persons it is supposed to be, the fiery serpent of the Children of Israel. This fiery serpent, or dragon, is a worm about a yard long, which is found under the skin, where it produces a painful tumor. The life history of the parasite is not yet completely demonstrated, but it is established that the worm spends a part of its life in small crustaceans of the genus *Cyclops*, and is probably taken in by man in the drinking water. Fortunately the Children of Israel who have come to this country did not bring the fiery serpent with them. It has, however, been found on an island off the coast of South America, where it was introduced with negroes from Africa. The malady it causes is primarily a tropical disease, and we have little to fear from it in this country.

It may interest you to know something regarding the scientists who have been active in investigating this important subject of the

spread of diseases by insects and other arthropods. While a number of European, Asiatic, and African authors have published exceedingly valuable and important contributions in this line of work, it will perhaps be of particular interest to you to know what Americans are engaged in this research. Several of the Americans in question are, or have been, Washington men, and are known to you personally. I will mention the names in alphabetical order. While not pretending to give a complete list, we may recall the following names:

Dr. Aristodes Agramonte, one of our Cuban colleagues, is a member of the yellow fever commission.

Dr. James Carroll, also acting assistant surgeon of the United States army, has been engaged in the work on yellow fever. He gave the disease to himself by allowing an infected mosquito to bite him, and he came near losing his life in the experiment. For several days he lingered between life and death, but he fortunately recovered, and is to-day in Washington.

Dr. Carlos Finley was one of the first persons to experiment with mosquitoes in connection with yellow fever.

Dr. L. O. Howard, entomologist of the United States Department of Agriculture, has been particularly active in studying the various kinds of mosquitoes which come into consideration, working out their life history and suggesting practical measures for their eradication. He has also made a careful study of the various insects which come into consideration in connection with typhoid and other bacterial diseases.

Dr. A. F. A. King, of this city, was the first person to give a scientific summary of the arguments in favor of the mosquito theory of malaria.

Dr. G. M. Kober, of this city, deserves credit for his early and frequent reference to flies as spreaders of typhoid, particularly from box privies.

The late Dr. Jesse W. Lazear, acting assistant surgeon, United States army, was associated with Drs. Reed and Carroll in their yellow fever work. He contracted the disease and died of it after an illness of a few days.

The late Professor Joseph Leidy, of Philadelphia, was one of the first to point out the dissemination of gangrene among wounded soldiers by the agency of flies.

Dr. George H. F. Nuttall, of California, at present in Cambridge, England, has been ac-

tively engaged in experimental work with bubonic plague and anthrax, and their transmission by insects. His recently published summary of the general question of insects as transmitters of disease is the most extensive paper as yet issued on the subject.

Dr. Nott, of New Orleans, was apparently the first to suggest the possibility of the transmission of yellow fever by means of mosquitoes.

The late Dr. Shakespeare, of Philadelphia, has rendered valuable service in connection with the investigation of the spread of typhoid among troops.

Dr. Walter Reed, of the United States army, is at the head of the yellow fever commission, to which we owe the brilliant results already mentioned.

Dr. Theobald Smith, formerly of the United States Bureau of Animal Industry, now of Harvard University, discovered the cause of Texas fever, and demonstrated its transmission by means of the tick. His publication on the subject represents one of the finest pieces of pathological work ever issued by an American author.

Surgeon-General Sternberg, of this city, has repeatedly insisted upon the necessity of keeping flies away from infectious material.

Drs. Vaughan and Veeder, the former of this city, were both actively engaged in the investigation of the spread of typhoid among our troops by means of flies.

In conclusion, ladies and gentlemen, I hope that my remarks this evening will not prejudice you against insects in general. Being a zoologist by profession, I have more or less of an affection for these winged creatures, and should dislike to see you become too antagonistic toward them. I find myself somewhat in the same position as one of our American entomologists—you all know his name: One day a lady who was about to visit the German Rhine applied to him for advice relative to protecting herself against the fleas; he replied that he could not aid her, since, being a zoologist, his sympathies were entirely with the fleas. Not every germ is dangerous, and not every insect disseminates disease. Many germs and many insects are positively useful to us. The dangerous germs and the insects which transmit them should, however, be guarded against and destroyed, and although the Washington Humane Society is placing itself on record as opposing the protection of life and property by the de-

horning of cattle, we may confidently hope that that active and well-intending body of esteemed fellow-citizens will still permit us to kill mosquitoes, flies, fleas, and bedbugs, not only in order to increase our comfort, but in order to save human life.

SCARLET FEVER IN THE DISTRICT OF COLUMBIA.*

By J. E. WALSH, M. D., Washington, D. C.

I feel that an apology is due you for daring to present to your notice such an old and often written of subject as the one I have chosen for my paper this evening. My excuse is, that to me it is a very interesting one, and scarlatina being a preventable disease, I desire to bring to your attention particularly the type now prevailing here, hoping thereby to secure your aid in producing a decrease in the number of cases.

Since 1897, when only 160 cases were reported to the Health Department for the whole year, the number of cases has been on the increase, so that it behooves us practitioners, having the health of the community in mind, to diagnose correctly the eruptions which may come under our care in order to reduce the prevalence of scarlet fever to a minimum.

Although the character of the disease has been very mild, it may at any time take on a more virulent nature and produce a correspondingly greater mortality.

In 1897 the death rate was 6 per cent., in 1898 2.9 per cent., in 1899 2.11 per cent., and 1900 2.57 per cent. It will be noticed that there has been a gradual increase in the mortality, not a great one, it is true, but enough to fly the warning signal and cause us to examine more closely the cases of eruption brought to our notice, and not dismiss them as rashes due to indigestion, heat, and other things than the true condition. I have seen many patients who received their infection from children whose cases had been diagnosed by physicians as due to these causes.

I have in mind now a family of five children, all of whom caught the disease from a younger child, whose case had been pronounced measles

*Read March 14, 1901, Medical and Surgical Society, District of Columbia.

by the attending physician! How any one could mistake measles for scarlet fever is more than I can tell, but it is done very often, not by the recent graduate alone, but by men who have been in active practice for years, and apparently ought to know. They have in mind the typical scarlatinal picture, and if the case in hand does not present all these symptoms they ascribe the rash to other things.

Now, I do not presume that any member of this honorable Society would make such mistakes, but realizing your power for good as a means for calling the attention of our professional brethren to existing evils, I bring the matter to your attention, hoping thereby, as I said before, to secure the end aimed at.

Scarlatina is a disease that has existed probably since ancient times, but was, according to Smith, first thoroughly studied and its nature more fully understood during the seventeenth century, when Sydenham and his contemporaries witnessed epidemics of and described it. It was first introduced into North America about 1733, and has prevailed to a greater or less extent ever since, oftentimes epidemically, with mortalities ranging from five to thirty per cent.

A typical case is ushered in with perhaps a slight rigor, though this is often absent, and an immediate rise of temperature, reaching in the first twenty-four hours from 103 to 105 degrees. The eruption usually appears in from twenty to thirty hours on the chest, and, spreading rapidly, reaches its height in from twenty-four to thirty-six hours.

The eruption varies in intensity, but has certain well-defined characteristics. It is uniform all over the body, showing no normal skin except in rare instances. Oftentimes the face is not affected. It varies from a pinkish shade of red to bright scarlet, and when examined closely is seen to be made up of very fine red points, whose bases, coalescing, produce the solid color.

The pulse ranges from 120 to 150, and with the rise of temperature the respirations are somewhat accelerated. The tongue is furred at the margins. The enlarged papillæ projecting through the coating gives the tongue the strawberry appearance, which some claim to be peculiar to this disease. But I have seen it in other conditions. It clears off in a few days, leaving the tongue very red.

The throat symptoms vary from a very simple pharyngitis to severe inflammation of all the

soft tissues about the fauces with sometimes a heavy deposit of membrane on the tonsils, which often causes the medical attendant to imagine he has diphtheria as a complication.

There are glandular enlargements about the neck which in severe cases may suppurate.

The temperature does not vary much from morning to evening, but continues nearly stationary for from three to five days, and then begins to subside with the fading of the rash. Sometimes there are some nervous disturbances, such as headache or slight delirium, but in ordinary cases this does not persist very long.

The rash usually disappears in about a week when desquamation begins. The amount of exfoliation and the duration of this stage vary with the severity of the dermatitis. In cases where the rash is not very pronounced, the desquamation is not noticed at all about the body, where it is rubbed off in very fine granular scales by the clothing, but is always seen about the hands from the twelfth to the sixteenth day. The period of desquamation is from three to six weeks, and sometimes longer.

The most common complications of the disease are nephritis, adenitis, otitis, sometimes followed by mastoiditis and arthritis. This is the general characteristic picture of the disease, which presents all degrees of variation, from mild to very severe and malignant forms.

I will say nothing as to the specific causes of the disease, as nothing is known regarding it. It is thought to be due to a form of streptococci, but I do not think it has been isolated yet.

Now as to the disease as seen here:

As regards the conveyance of the contagion, it is for the most part carried in the clothing of those who have been exposed to it, and by cases coming in contact with other persons. In one instance I was called to see a case, and on making inquiry as to the probable source of the infection, was informed that it was brought from Europe in a letter. Just five days before the child was taken sick the mother had received a letter from a family in Scotland, among whom there were six cases. After reading the letter, the mother gave it to the child to play with, and just within the period of incubation the child came down with the disease. It may seem that the probability of such a source of infection is very remote, but I know of no reason why this could not be the origin. The milk supply was another means of disseminating the contagion. In two instances during the past couple of years

outbreaks of the disease have been traced to certain dairymen. In one case sixty-one cases were affected, and in the other thirty-three.

In the first instance, the origin of the infection was a child of the dairyman, who was suffering from an undiagnosed case of the disease, and in the second, it was due to a case which was thought to be diphtheria until a bacteriological examination proved otherwise. It was then regarded as a case of tonsillitis, and the patient allowed to go about. Later on desquamation took place while the man was at work in a dairy filling milk bottles, etc. These outbreaks were only stopped by a thorough disinfection of the dairies and utensils.

The period of the incubation in the few cases in which it was possible to fix the time was from three to five days.

As to susceptibility, some families seem particularly vulnerable to the infective principle of this disease, as well as that of diphtheria. Any number of instances have come under my observation of children who have had one disease, and at a later period the other. I have now under my care a little girl about five years old recovering from diphtheria, who was less than two months ago discharged from quarantine for scarlatina.

Some children, although rarely, are so susceptible that they have a second attack of the disease within a short space of time. I have in mind particularly two cases, one treated by Dr. J. W. Bayne, and the other by Dr. J. R. Nevitt, who suffered from recurrent attacks. That this condition is very rare is shown by the fact that they are the only two in nearly twenty-eight hundred cases which have come under my observation. In Dr. Nevitt's case, there was an interval of two months between the attacks. The symptoms were identical with those of the first attack—viz., sudden onset of the disease with slight chill, gastric disturbance, rise of temperature, rash appearing the following day, and slight sore throat. The rash gradually fading and desquamation beginning and continuing for four weeks. In Dr. Bayne's case the patient was taken with the second attack twenty days after exfoliation was completed in the first. In these attacks the symptoms were also identical, the desquamation in the second being completed in about a month.

As to race, the colored do not seem to be so susceptible as the whites. Of course, the color of their skin and the fact that they do not call in

medical aid in many cases may give rise to this idea, but aside from this I do not think they are so prone to the disease. Nor do the poorer classes of whites suffer as much as the well-to-do. You may recall that in a paper read before this Society some time ago, I made the statement that diphtheria does not prevail among the poor who live in dirty, squalid, unsanitary dwellings, with deficient or no plumbing arrangements, to so great an extent as among the middle class and well-to-do portion of our population. This holds true of scarlet fever also, as at the time I made my investigation only 10 per cent. of all the cases of these diseases were among the poor.

Of 2,790 cases observed during the past five years, only 232 were colored, so allowing for difficulty in making a diagnosis, etc., it still leaves the number so much less than the white that we must believe that they are less vulnerable.

As regards sex, although most authorities hold that males and females are attacked equally, our experience is that females are slightly in excess. Of the number of cases mentioned (2,790) the female exceeded the males by twenty-one per cent. That is to say the number of females cases was 1,529, and the males 1,261.

As to age, I presume on account of the less danger to exposure, infants are not so often affected. I have in mind one case where an infant only a few days old was taken with the disease, having caught it from its mother, who contracted it from a child she was nursing at the time of her confinement. The mother died, and in about ten days the infant also succumbed. This and the twenty-five other cases noted in the table below refutes the statement made by many that infants do not have the disease.

The number of those affected by it increases with the age until twelve years, and then decreases. Although no age is exempt, the greatest number of cases occurred between the ages of three and twelve years. Of the 2,790 cases 1,225, or 43.9 per cent., occurred between six and twelve years of age, and 1,988, or 70.9 per cent., between three and twelve years of age. As a matter of interest the following table of ages is submitted:

Under 1 year	26 cases.
Between 1 and 3 years	270 cases.
Between 3 and 6 years	763 cases.
Between 6 and 12 years	1,225 cases.
Between 12 and 18 years	310 cases.

Between 18 and 25 years..... 116 cases.
 Over 25 years..... 80 cases.

Total2,790 cases.

The character of the disease has been of a mild nature, fully 80 per cent. of the cases having symptoms so benign that they really required very little treatment except isolation.

In these cases there was very little rise of temperature, returning to normal in a few days; very little or no inflammation about the pharynx, and no complications or sequelæ.

The rash was not characteristic in being diffused all over the body, but departing from the clinical picture before mentioned occurred in patches. In many cases it occurred very slightly on the chest, about the groins, slightly on the forearms and legs, with none on the face, back, hands, and other parts of the body. The eruption fades in a couple of days. The desquamation is not noticed immediately, because it is so fine that it comes off in almost imperceptible scales. But in about the twelfth to the sixteenth day it will be noticed on the hands and feet. On these parts it begins by a roughing of the dried skin at the ends of the fingers and toes, and gradually extends over the whole member. This is the test of scarlet fever. Every case desquamates, especially about the fingers and toes, even if the eruption does not occur or is not noticed on those parts. The only cases where there may be no exfoliation following is in those which occur without eruptions, two cases of which have come under my care.

The period of desquamation is from three to four weeks, making the duration of the disease from four to six weeks.

The remaining 20 per cent of the cases were of the moderately severe, severe, and the malignant forms. It is these cases which have been followed by nephritis and other complications, and sometimes by the death of the patients.

As to the mortality, the death rate varies with the care the individual receives in ordinary cases. The general mortality among all the cases mentioned was 2.5 per cent. Among the males, owing to their not being so tractable and easily controlled, it is higher than among the females—3.33 per cent. for the former and 1.9 per cent. for the latter. For the same reason and because after the first symptoms disappear, very little attention is paid them, the colored cases succumbed at the rate of 5.2 per cent.

As to treatment, aside from isolation, little is

required, being altogether symptomatic. After recovery, proper and thorough disinfection is essential.

REPORT OF CASES—I., ECZEMA SQUAMOSUM; II., AMBULATORY TYPHOID FEVER; III., LACERATED CERVIX UTERI, CERVICAL ENDOMETRITIS; PROLAPSED AND SUBINVOLUTED UTERUS—OPERATION UNDER COCAINE HYPODERMICALLY—REMARKS ON BRIGHT'S DISEASE AND OXALURIA; IV., HEMORRHOIDS REMOVED WITH ANGIOTRIPE; V., RECURRENT APPENDICITIS TREATED WITHOUT KNIFE.

By BITTLE C. KEISTER, A. M., M. D., Roanoke, Va.

If you will kindly allow me space, I will give a short account of some of my experience since locating in the magic city of Roanoke, Va. No doubt every doctor can give some rare and interesting data concerning his first few months' experience in his new field.

I landed in Roanoke on the 1st day of November, 1900, after spending a vacation of five months travelling and sojournng in Europe. I wish to report some of my most interesting cases since I have been here.

Case I. Eczema Squamosum.—Mr. H. S. T., a prominent banker, called at my office on the 11th day of November, 1900, and requested me to examine his hands for some form of chronic skin disease that he had been suffering from for more than five years. On examination, I found that he had a very bad eczema squamosum on the back of each hand, located mainly over the knuckle joints, causing him much pain and worry when the knuckles were bent, or when any kind of manual labor was attempted. Examination of the urine indicated an excessive amount of uric acid. The patient's average weight was 252 pounds, and he was of a gouty diathesis. I at once prescribed a course of saline laxatives and diuretics, with a full supply of Kissengen and Viehy water, to be taken for three months. This course of treatment acted quite nicely in neutralizing the uric acid diathesis, as well as reducing his fat. At the same time, I prescribed a restricted diet, excluding all meats and stimulants. In conjunction with the above, I used electricity by the cataphoric method with formaldehyd and iodine. I made two applications each week, always careful to precede each with a few drops of a 10 per cent.

solution of cocaine. The patient was under treatment just four weeks, and all symptoms of the disease entirely disappeared. While I do not think it impossible for chronic squamous eczema to be cured in so short a space of time, yet the patient thinks he is entirely well.

Case II. Ambulatory Typhoid Fever.—A young lady teacher, Miss G., called at my office suffering from headache and malaise. Examination revealed that she was suffering from ambulatory typhoid fever. I directed patient to return to her home at once and go to bed. I called the next morning, and found that she was recovering from a slight hemorrhage from the bowels. On the eighteenth day of her illness she had a second hemorrhage, due in part to getting out of bed and walking to a sofa in the room to rest until her bed could be changed. This conduct, of course, was in violation of my specified orders, and I at once had a trained nurse to take charge of the nursing. On the forty-first day of the patient's illness, that bad complication—meteorism—set in, causing the abdomen to distend to fully twice its normal size. Symptoms of perforation were strongly indicated when I called Dr. Gale in consultation, who agreed with my diagnosis in apprehending perforation. The patient complained very much of pain in the left side in the region of the sigmoid flexure. On careful examination, I found that there was impaction of feces in the rectum, due, in my judgment, to the milk diet that I had prescribed as endorsed by our text-book writers.

To relieve this complication, I ordered an enema of eight ounces of olive oil (warmed) with one teaspoonful of oil of turpentine every eight hours. I also ordered a high enema of warm salt water through a rectal tube, allowing the tube to remain in the rectum for several hours after each enema. This was repeated daily until all the gas and abdominal distention disappeared.

The most interesting features connected with this case was the *low temperature*, which never reached above 101 degrees during the entire course. The average temperature in the month was 99.2-5 degrees, while in the rectum it ranged from 100 to 101 degrees, at no time rising above this. Another interesting feature was the long course of the fever (eight weeks). The patient made a good recovery, notwithstanding the complications of two hemorrhages, meteorism, and eight weeks in bed. The diagnosis was made clear by the microscope. The bacillus of Eberth

was found in the urine, as well as in the feces. Widal's reaction test was also made. The course of the fever was not characterized by the usual temperature curve of typhoid, but was quite atypical. The treatment consisted mainly of good nursing and tepid sponge bathing in creolin water (1 to 1,000), aided by such medicines as the symptoms indicated.

Case III. Lacerated Cervix Uteri; Cervical Endometritis; Prolapsed and Subinvolted Uterus.—Mrs. G. This lady called at my office on the 18th of November, 1900, to be examined for some uterine trouble, stating that she had been under the treatment of four or five of the leading physicians of the city, and had received only temporary relief. On examination with the speculum, I discovered a badly lacerated cervix, prolapsed and subinvolted uterus, with cervical endometritis. I advised curettement and operation for lacerated cervix. The patient readily assented, and engaged a room at my private sanitarium. The time was set for the operation, but the day previous to the time set for operating, I made an analysis of the patient's urine, and found it laden with albumen and casts. This, of course, changed the aspects of things very considerably. I decided to postpone operative measures until the kidneys could be put in better condition. After two weeks' treatment, consisting of saline diuretics and laxatives, combined with rest and an exclusive milk diet, her condition was very much improved. After two more days' preparatory treatment, I operated without chloroform, making a thorough curettement of the uterus, and, followed this with Emmet's operation for lacerated cervix. Before ennetting, I administered, hypodermically, half a grain of morphia, with one-fiftieth of a grain of atropia in the lumbar region, which acted quite satisfactorily for the curettement. Before operating for the lacerated cervix, and after a careful irrigation of the uterus with a warm solution of bi-chloride (1 to 1,000), I injected 2 1-2 grains of a 4 per cent. solution of hydrochlorate of cocaine into the neck of the uterus just immediately behind the external os in three separate places. I waited about six minutes before proceeding to operate, and was not interrupted during the entire operation except when I made the last suture in sewing up the cervix, which caused the patient only slight pain. I performed the entire operation in sixteen minutes; this did not include the after treatment of irrigating and packing the uterus and vagina.

The most interesting points connected with this case are that primary union took place in the cervix, and that there was very slight hemorrhage, considering the patient was a victim of Bright's disease. The blood vessels in Bright's disease are usually in a necrosed condition, and very apt to bleed freely from the slightest cause. This patient was of a large plethoric build, weighing about 200 pounds, and had a very weak heart. She made a very good recovery from the operation, but is still under observation on account of her kidneys.

This recalls to my mind the fact that I have at this time under treatment twelve other cases of typical Bright's disease. I am somewhat at a loss to know what it means, but I am informed that there are more cases of Bright's disease in this city than any other city of its size in the United States. I am thinking of making some special investigations along this line to ascertain the cause of the prevalence of this dread disease here.

I found oxaluria also very common here, which may be caused by the large percentage of lime in the water in this section. I am strongly inclined to believe that there is a geological factor in this immediate section that has something to do in producing this trouble.

I find very little data in our modern text-books on the etiology and treatment of this disease. Where I find a simple functional albuminuria, I at once prescribe a short course of saline laxatives, with mild diuretics, which gives pretty quick relief, provided the patient will go to bed and live on fluids for a few weeks. But when I am called to a typical case of Bright's disease, with all the different varieties of casts, weak but fast heart sounds, uræmic symptoms, and all the symptoms of nervous prostration, such as evil forebodings, fever, etc., I am almost at a loss to know just where to begin and where to end. While we may not have uræmic poisoning in all our cases, yet I find it a very common accompaniment of genuine Bright's disease, as well as the most serious of all complications to treat. We have no specific form of treatment for it as yet, and, strange to say, our modern text-book writers are almost dumb on this subject. While one author advocates the administration of iron in some form, another boldly denounces its use.

In my judgment, the best treatment for all serious cases is a complete rest in bed for from three to six months, with an exclusive milk diet, at the same time keeping the bowels and pores

of the skin in as normal a condition as possible. If our text-book writers would devote more attention to the etiology and prevention of this disease, our State hospitals would not be so overcrowded with mental wrecks.

My better acquaintance with the microscope of late years convinces me that a very large percentage of the inmates of our State hospitals are suffering from brain and nerve poison, due in great part to bad sewerage or defective elimination on the part of the kidneys. But for the time it takes to do so, I would like to cite a few instances that have come under my observation during the past sixteen years of active experience.

Case IV. Hemorrhoids Removed With Angiotribe.—Mrs. Maj. D., wife of a prominent capitalist of this city, called at my office with her husband, and requested an examination for some form of rectal trouble, from which she had been suffering for the past nine years, and which had become much worse during the past few months. On examination, I found one large hemorrhoid about the size and shape of a medium-sized tomato, one long rectal fissure caused by an old badly healed fistula that had been operated upon nine years previously, and a badly constructed anus about the size of that of a six-year-old lad. I at once advised an operation. After two days' preparatory treatment, and with the assistance of Dr. B. C. Moomaw, of this city, I operated as follows: After complete anesthesia with chloroform and a careful cleansing of the entire field of operation and surrounding parts with synol soap, followed by diluted alcohol, I proceeded to divide the sphincter muscles with my two thumbs in the usual way. After thorough division, I brought the rectum down in full view and proceeded to dissect the hard floor of the fistula by making two parallel incisions along the entire tract of the old fistula, extending three and a half inches above the inner side of the internal sphincter ani muscle. After this I removed the entire mass with a pair of curved scissors, then attached the edges of the mucous membrane by a few interrupted sutures. After completing this part of the operation, I proceeded to remove the hemorrhoid by the angiotribe. After carefully nicking the edges of the mucous membrane surrounding the hemorrhoidal mass, I adjusted the angiotribe, and proceeded to turn on the pressure until about two thousand pounds were on. After waiting a few minutes at different intervals, I turned on the full capacity of the instrument, which is about

three thousand pounds. This whole procedure required only about twelve minutes to complete. After removing the angiotribe, I found but little else to do except to adjust the mucous membrane and dress the parts—no secondary hemorrhage, no tying of blood vessels, no sutures. After douching entire field with bi-chloride solution (1 to 1,000), I packed the rectum and outside with 10 per cent. vitogen gauze. On the fourth day I removed all the dressing, and was not surprised to find everything in a pure and healthy condition. I administered a Seidlitz powder half hour before removing the dressing, which had the desired effect in causing a copious movement on the bowels immediately after removing the dressing. After washing the rectum thoroughly with a 1 to 1,000 hot bi-chloride solution, I applied a similar dressing to the first, except in this instance I inserted a rubber tube wrapped with gauze, to allow the escape of gas. I made a similar dressing about every four days, until the parts were entirely healed, dismissing patient cured at the expiration of three weeks.

This patient was operated upon the 6th of March, and I am glad to say she is now, six weeks later, entirely well and free from pain. Her husband informed me last week that his wife is now attending to her usual home duties without suffering, which pleasure she has not had for the previous nine years.

The main points of interest in this case are—first, the age of the patient (56 years), and getting such a splendid result from the operation after nine years of suffering from an unhealed fistula and a badly constructed anus, saying nothing of the large hemorrhoid. I also wish to emphasize the importance of the angiotribe in operating for hemorrhoids, both internal and external. There was not a single drop of blood lost in removing this large hemorrhoid. This being my first personal experience with the angiotribe, I feel it but a duty to report it to the profession. Dr. Moomaw, of this city, can testify as to the unusual success when this instrument was used. I had witnessed only two previous operations with the angiotribe; these were in the hands of Dr. Gusserow, of the University of Berlin, and Dr. Morris, of the Post-Graduate Medical College of New York. So delighted was I with the splendid results obtained that I think I shall never have occasion to regret my outlay of \$15 for this invaluable instrument.

I have a varicocele to operate upon next week, and I think I shall use the angiotribe in crush-

ing the blood vessels, instead of the knife and ligatures. I can see no very great reason for not using it in removing a non-sloughing appendix, instead of using the ligatures and scissors—just as the Germans are doing in removing the tubes and ovaries in ovariectomy.

Case V. Recurrent Appendicitis.—This brings to mind the fact of my having just dismissed a case of recurrent appendicitis. It was a very typical case, and may be of some interest to my fellow-practitioners to know that this case was treated without a radical surgical operation. Methinks I hear the rumbling noise of *stones*, the enchanting warnings of my good friends, Taylor, Johnston & Co., and a host of other good surgeons of our large cities, decrying our modern methods of treating appendicitis without the knife. I do not mean to say that all cases should be treated without the knife, nor do I mean to say that all cases should be treated with the knife. I think the key-note lies in being able to make an early differential diagnosis of your case; and it does seem to me that any practitioner of two years' experience certainly should be able to do this at this advanced age of so common a disease. An *all round educated* general practitioner should be a better diagnostician than a surgeon in such cases, and he should not fail to call a surgeon in due time when he finds it necessary to have his assistance. When he has done this, he has the consolation of shifting the responsibility from his own shoulders to those of the surgeon—this rids the general practitioner of the too common malediction of which he is so often accused by the surgeon of late years: "*Did not call the surgeon in time.*"

The case above referred to was a young man nineteen years old, by trade a draughtsman, in the employ of the N. & W. R. R. Co. I was sent for in haste to relieve him of a supposed cramp colic. On arriving at his bedside I found him suffering from excruciating pain in the right side of the abdomen, with considerable swelling. The patient had a fever of 101 degrees, and pulse 108 degrees. I gave the patient an eighth of a grain of morphine, and after waiting a few minutes for it to act, I proceeded to administer a high enema of two ounces of Epsom salts in half a gallon of warm water through a long, soft rubber tube, which I inserted through the rectum, thence the transverse colon to lower portion of the ascending colon near the upper part of the cecum. After doing this in the most careful manner, I proceeded, with the assistance of the young man's room-mate, to attach the flow from

a fountain syringe to the rectal tube, and after allowing half of the quantity of the solution to flow into the ascending colon, I withdrew the tube to the transverse colon, and allowed the remaining half to flow in the neighborhood of the sigmoid flexure. On withdrawing the tube, the distended abdomen began to reduce at once on account of the escape of gas. Half an hour later the patient's bowels began to move very freely, and continued to move for about two hours. I called the next morning, and found the patient very much relieved in every way, but he still had some acute pain in the region of the cecum and appendix. I ordered an ice bag to be applied to the seat of the pain, which gave immediate relief during the time it was applied. The patient began to show a great deal of anxiety about himself, fearing that he would have to undergo an operation. I had informed him of my diagnosis, and gave him the liberty of choosing between *operative* and *non-operative* treatment. His knowledge of the results of all operated cases in this city caused him to decide to be treated by the non-operative method. Hence I went to work in earnest on the modern method of treating his case, and I am glad to be able to say the patient made a good recovery, and is out at his usual duties at this writing. The main part of the treatment consisted in daily irrigation of the entire colon with warm saline solution, massage, and a fluid diet for ten days, keeping the patient on his back and as quiet as possible. The diet consisted of liquid beef peptonoids with creosote, alternating with Valentine's meat juice. No other food was allowed during the time except a cream toddy before breakfast after the fourth day, when the temperature was below normal in the early morning. The massage was given by a trained nurse every eight hours. The medicines used for this massage were diluted alcohol, followed with equal parts of lanolin and camphorated oil. No medicines were administered by mouth except 1-4 grain of calomel and soda every hour until 1 grain of each had been given. This was repeated every fourth day, and followed twelve hours later with a Seidlitz powder. The excessive vomiting during the first twenty-four hours was relieved by the first saline injection. The pain in the right side was controlled by the ice bag, and disappeared after the sixth day. The saline injections consisted of two tablespoonfuls of clean salt (chloride sodium) dissolved in half a gallon of warm distilled water injected through a soft rubber tube, which ex-

tended to the cecum, repeated daily for ten days. This method of irrigating the bowels has the effect of draining the peritoneum of any septic material as well as preventing and rendering sterile any pus forming elements that may be located in any part of the alimentary canal. If this treatment were instituted in the early stage of 50 per cent. of the cases of ordinary recurrent appendicitis, I verily believe we would have fewer cutting operations, hence fewer deaths from this disease. This treatment is highly extolled by the Germans, and it is largely practiced throughout Germany by the ablest medical men in that country. I do not claim any originality or honor for adopting this mode of treating ordinary recurrent appendicitis, but inasmuch as it acted nicely in bringing this patient through without subjecting him to the knife and other inconveniences, I feel no hesitancy in recommending the treatment to my fellow-practitioners for what it may be worth. I feel quite sure that if this patient had fallen into the hands of some of my enthusiastic colleagues, nothing short of a radical operation would have satisfied their ardor.

In conclusion, I desire to make the statement that thirty-three cases of appendicitis out of every hundred should not be operated upon, and according to the signs of the time and from the way the finger board points, I am strongly inclined to believe that the time is not far distant when 50 per cent. of all cases of appendicitis will be treated and cured without operative measures. The profession should make haste *slowly* in adopting the radical views of some of our late journal writers, who advance the opinion that all cases of appendicitis should be operated upon without distinction or classification. I beg leave to differ widely from these distinguished gentlemen, both in sentiment and in practice.

22 Seventh avenue.

Book Notices.

International Clinics. *Volume IV. Tenth Series, 1901.*
 Edited by HENRY W. CATTELL, A. M., M. D.
 Philadelphia, U. S. A. *With the Collaboration of
 Leading Members of the Medical Profession throughout
 the World, with Regular Correspondents in Mont-
 reuil, London, Paris, Leipzig, and Vienna.* Phila-
 delphia: J. B. Lippincott Co. 1901. Cloth, 8vo.

Pp. 312. \$2 per Vol.; half leather, \$2.25. (Sold by subscription only).

This is a "quarterly of clinical lectures and especially prepared articles on medicine, neurology, surgery, therapeutics, obstetrics, pediatrics, pathology, dermatology, diseases of the eye, ear, nose, and throat, and other topics of interest to students and practitioners." It is just that kind of publication that, however well we may think of the issue in hand, the next one seems to be better. It covers all departments of medical science, either by lectures or specially prepared articles on live issues of the day, or else by epitomizing the most advanced suggestions or discoveries or demonstrations. This volume is simply filled with good things for the doctor. The practitioner who consults his own interests does well who becomes a regular subscriber and reader of the quarterly issues.

Medico-Legal Manual. By WILLIAM W. KEYSOR, Lecturer on Medical Jurisprudence in the Omaha Medical College, and Judge of the District Court, Omaha, Neb. Omaha: Burkley Printing Co. 1901. Cloth. 12mo. Pp. 316. Price, \$2.

Judge Keyser is specially gifted as the author of a much-needed book on medical jurisprudence. His eminence in the legal profession gives weight to his definition of legal terms and enunciation of principles which the doctor "ought to know and comprehend in order to acquit himself creditably as an expert witness." Physicians have in their libraries authorities enough on such subjects as signs of pregnancy, definition of wounds, poisons, etc., which are not dwelt upon in this *Manual*, except in their legal aspects. As the preface claims, this book furnishes "a variety of useful information on legal topics of particular importance to medical practitioners." Dentists and pharmacists will also find this *Manual* helpful, for the law relating to contracts for professional services, witness fees, evidence, negligence, and malpractice suits is the same for all classes of the medical profession."

Prophetic Medicine. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to the Out-patient Medical Department of the Jefferson Medical College Hospital. Vol. I. March, 1901. Lea Brothers & Co., Philadelphia and New York. 1901. Cloth. 8vo. Pp. 440.

This volume of "quarterly digest of advances,

discoveries, and improvements in the medical and surgical sciences" is taken up with advances in surgery of the head, neck, and chest; infectious diseases, including acute rheumatism, croupous pneumonia, and influenza; diseases of children, pathology, laryngology, and rhinology, otology. It will be remembered that it was to *Progressive Medicine* that was awarded the grand prize during the Paris Exposition of 1900, thus indicating the merit of this *quarterly* as compared with competitors.

American Year-Book of Medicine and Surgery, 1901. Collected and Arranged with Critical Comments by Thirteen Eminent Authors. Under the General Editorial Charge of GEORGE M. GOULD, M. D. In two Volumes. Vol. I., *General Medicine*; Vol. II., *General Surgery*. 8vo. Pp. in the two Volumes, 1,291. *Illustrated*. Philadelphia and London: W. B. Saunders & Co. 1901. Per Volume, cloth, \$3 net; half Morocco, \$3.75 net.

The *American Year-Book* contains a "yearly digest of scientific progress and authoritative opinion in all branches of medicine and surgery, drawn from journals, monographs and textbooks of the leading American and foreign authors and investigators." Until last year, the work was in one volume—heavy and too large to be wieldy. Then the *Year-Book* for 1900 was issued in two volumes, which met with such favor that the publishers decided to follow the same plan with the *Year-Book* for 1901, so that the doctor may procure either the medical or surgical volume as he prefers, or both, if he wishes. The titles of the respective volumes indicate their contents, except that matters pertaining to obstetrics are contained in the surgical volume. In the effort of each contributor to make his section appear well, he has collected and systematized for the reader very excellent matter of instructive value to the practitioner. We most cordially recommend this *Year-Book* to the practicing physician and surgeon. Keeping a year ahead of text-books as they issue from the press, the doctor who systematically subscribes to it, and reads it, will find that there is but little new for him to gather from the pages of the text-book. All departments usually understood as belonging to medicine or surgery are to be found in one or the other of these volumes.

Infant Feeding in Its Relations to Health and Disease. By LOUIS FISCHER, M. D., Attending Physician to Children's Service of New York German Poliklinik; Professor of Diseases of Children in New York

School of Clinical Medicine, etc. *Containing 52 Illustrations, with 23 Charts and Tables, Mostly Original.* Philadelphia, Chicago: F. A. Davis Co. 1901. Large 12mo. Pp. 356. Cloth. \$1.50 net.

This book comes in good season to be of service to many practitioners. It shows careful study of books and experience on the part of the author, who has made a most useful publication in the interests of helpless infants and affectionate parents or guardians. It is an up-to-date work—every page being filled with useful information as to taking care of the infant. We wish every conscientious nurse would read this book and make note of its teachings, so as to carry the lessons into practice in the nursery. While the language used is thoroughly scientific, it is yet such that the doctor or nurse possessed of only a moderate degree of technical information may read with ease and profit. A good index is added to assist in reference to subjects. A few blank memoranda sheets are also added, which the owner may conveniently use for making such notes as he may desire.

Editorial.

Osteopaths Declared to be Not Physicians. Will That Decision Stand?

An indictment was issued against a "Dr. Charles Peters," proprietor of a sanitarium near South Boston, Va., for practicing medicine in Virginia without having obtained the license of the Medical Examining Board of Virginia, as required by law. In the trial of the case before the Halifax County Court, presided over by Judge Barksdale, Peters was represented by Attorneys Guthrie and Hill, and the Commonwealth by Attorney William Leigh. Peters claimed that he did not practice medicine or surgery in the common acceptance of those terms, but resorted to osteopathy and hydrotherapy for the relief of his patients—using no drugs or medicines, but instead used baths, massage, and dieting; and the evidence was that nearly all his patients had been greatly benefited by his treatment.

After argument, Judge Barksdale instructed the jury to render a verdict of "not guilty." In rendering his opinion, the Judge cited decisions construing statutes similar to the Virginia law

from Ohio, New York, and Kentucky, in which it was held that one using osteopathy, and using neither drugs nor medicine, was not a physician, and was not amenable to the penalties of the statute in Virginia against a physician or surgeon practicing without license.

The question is an interesting one, as it has never been passed on by the Virginia Court of Appeals. The Illinois Court of Appeals has, however, held that an osteopath is a practitioner of medicine, and must be duly licensed in order to practice lawfully. (*Eastman vs. People*, 7 Ill. App. 236; see *Keysor Medico-Legal Manual*, pp. 13-14.)

It sounds curious to regular practitioners to hear the definitions given by learned judges of the law to the words "practice of medicine." Many an excellent practitioner oftentimes sees it best for his patient to prescribe simply a course of dieting, of rest, of exercise, of hydrotherapy, of massage, etc., without the use of a single drug; and yet that doctor is as assuredly *practicing medicine* as if he were dosing his patient with elixirs, or tinctures, or powders, or capsules, or pills, or stimulants in the form of whiskey, or wines, etc. Many of the most potent prescriptions of the good doctor are such things as inspire hope in the despondent, as in the diagnosis of an innocent condition where the patient had been "faked" into the fear that a fatal disease had seized him.

But the Virginia law says: "*Any person shall be regarded as practicing medicine or surgery for compensation within the meaning of this act who shall profess publicly to be a physician or surgeon, and shall offer for practice as such, or who shall prescribe for the sick or those needing medical aid, and shall receive therefor money or other compensation, directly or indirectly.*"

It does not appear to the medical profession of the State that the learned Judge in this case has properly informed himself as to the meaning of the words "medicine," or "practice of medicine," in the sense that doctors use the terms. To practice in a large field of medicine does not necessarily involve the idea of the use of drugs. It is a very contracted view to take of the subject. There is, for instance, a large specialty in electro-therapeutics, and yet these specialties rarely prescribe drugs.

In the case of Dr. Peters, we have the statement that he resorts to "osteopathy and hydrotherapy for the relief of his patients, using no drugs or medicines, but instead uses baths, mas-

sage, and dieting." Now, the question is, does he *prescribe* these things for his patients? If so, does he *receive compensation* for such or not?

It is not probable that only the well go to "Dr. Peters;" for "the evidence was that all or nearly all his patients had been greatly benefited by the treatment." It is more than probable that some, if not "nearly all, his patients," were sick, or believed themselves to be sick, and went to him to seek his advice as to treatment, and that he advised (or prescribed) "baths, massage, and dieting," and for such advice (or prescription) he received compensation according to the ability of his patient.

This so-called "Dr. Peters" must have hit upon a peculiar set of persons if he has not had occasion to prescribe for some of them water, hot or cold; saline, acid or neutral, or other agent to relieve constipation or torpid bowels, or something of that sort.

The practice of medicine, in the sense in which the term is used, implies diagnosis. Does the osteopath recklessly prescribe—not drugs or medicines, but "baths, massage, and dieting" in heart disease conditions without first ausculting or percussing to find out the condition he is about to treat? Suppose a patient is injured or killed under his treatment, can the osteopath be sued for malpractice, or must he be tried for murder? Is he responsible to the law for nothing he does? Is he to be set free upon the community as a destroyer of health or life by permission of the courts? Such propositions are absurd.

Such a person undoubtedly should be brought within the meaning of the law relating to the practice. He should be tested by some tribunal within the State of Virginia where others who have to deal with questions relating to health and life are tried, before the appointed examining board before they can offer for practice.

Some way should be devised to let the important questions raised by Judge Barksdale go on up to the Court of Appeals of Virginia. For, if the law as it now stands is not prohibitive of osteopaths and such like practicing within the State of Virginia until their knowledge of anatomy, physiology, pathology, etc., etc., then the law should be made satisfactory. We understand that these osteopaths do not even pay a license.

We will watch the progress of the case now pending in the Hustings Court of Richmond, Va., to which we referred in the first April num-

ber, which case was postponed until the May term of court.

University College of Medicine, Richmond, Va., Commencement.

During the commencement exercises of the University College of Medicine, held at the Academy of Medicine in this city, the *Degree of Doctor of Medicine* was conferred upon the following gentlemen, named in alphabetical order:

- Abernathy, Eric A., Beaufort, N. C.
 Allen, Joseph Augustus, Poindexter, N. C.
 Angle, Saul E., Richmond, Va.
 Arbuckle, John A., Lewisburg, W. Va.
 Arbuckle, Julian D., Lewisburg, W. Va.
 Baggarly, Carroll M., Washington, Va.
 Branscome, E. Lee, Snake Creek, Va.
 Brawley, R. V., Mooresville, N. C.
 Burton, George Marshall, Stribling Springs, Va.
 Cannaday, John E., Christiansburg, Va.
 Colley, T. J., Praise, Ky.
 Copeland, G. L., Dobbin, W. Va.
 Copeland, H. F., Dobbin, W. Va.
 Covington, Lewis Clyde, Crewe, Va.
 Cringan, Jr., John W., Richmond, Va.
 Crossman, Victor W., Brooklvn, N. Y.
 Darden, Julius Caesar, Suffolk, Va.
 Deyerle, James Henry, Rock Mount, Va.
 Dicks, J. F., Walkertown, N. C.
 Early, J. L., Hillsville, Va.
 Fearing, Zenas, Elizabeth City, N. C.
 Farrer, D. Atwell, Red Hill, Va.
 Gills, William J., Farnville, Va.
 Givens, R. T., Looney, Va.
 Goley, W. R., East Durham, N. C.
 Harrison, Gwynne P., Millwood, Va.
 Hemminger, R. J., Rockwood, Pa.
 Highsmith, Seavy, Parkersburg, N. C.
 Innes, William James, Bayonne, N. J.
 Irvine, H. G. B., Evington, Va.
 Jones, Arthur Lee, Silas Creek, N. C.
 Kober, Jr., A. F., Charles City, Iowa.
 Kyger, William A., Port Republic, Va.
 Leake, J. J., Francisco, N. C.
 Lucas, W. A., Patterson, Va.
 Mabry, Jesse H., Tallahassee, Fla.
 Mahood, Charles E., Oak Hill, W. Va.
 Meadows, Elijah Brodie, Oxford, N. C.
 Moran, McCandlish M., Moran, Va.
 Murrell, Thomas Whitehead, Richmond, Va.
 McBryde, Malcom H., Little River Academy, N. C.
 McFadyen, Paul, Clarkton, N. C.
 Nelson, W. W., Worth, Va.

Nevitte, R. R., Richmond, Va.
 Nicholson, Nathaniel Albert, Pleasant Ridge,
 Va.

Parker, John Rainey, Laws, N. C.
 Peteler, Alois, Jersey City, N. J.
 Pine, John S., Gainesboro, Va.
 Price, R. C., Moorefield, W. Va.
 Quaintance, Rupert W., Slate Mills, Va.
 Roberts, Solomon P., Parkersburg, W. Va.
 Rose, Augustus S., Fayetteville, N. C.
 Schmidt, J. W. A., Hoboken, N. J.
 Scott, Charles M., Princeton, W. Va.
 Self, L. Lester, Lincolnton, N. C.
 Shaddinger, J. W., Gardensville, Pa.
 Sharp, J. Tobias, Frankford, W. Va.
 Sherrill, Albert, Lenoir, N. C.
 Shields, Randolph T., Lexington, Va.
 Stretch, James, Meriden, Conn.
 Underhill, H. P., Schma, N. C.
 Vaden, Garland M., Portsmouth, Va.
 Valentine, Thomas H., Valentine, Va.
 Wailes, Henry S., Salisbury, Md.
 Wallace, Harry Moore, Spotswood, Va.
 Webb, Frederick Bostick, Roanoke, Va.
 Weymouth, Samuel E., Lodge, Va.
 White, R. J., Norfolk, Va.
 Wilkinson, William W., Nebletts, Va.
 Willeox, Daniel Dodson, James River, Va.
 Womack, J. Hobson, Nyle, Va.
 Young, John W., Belona, Va.

The *Degree of Doctor of Dental Surgery* was conferred upon the following-named gentlemen, alphabetically arranged:

Costenbader, Frank L., Potomac Mills, Va.
 Fleming, William, Warrenton, N. C.
 Palmer, Charles L., Fitzhugh, Va.
 Wilson, David G., Mineral City, Va.

The *Degree of Graduate in Pharmacy* was conferred upon the following gentlemen, named alphabetically:

Aldhizer, H. H., Broadway, Va.
 Driver, W. F., Timberville, Va.
 Lane, B. D., Leggett, N. C.
 Strole, J. L., Grove Hill, Va.
 Williamson, J. I., Richmond, Va.

The following *Hospital Appointments* were announced:

Virginia Hospital, Richmond, Va.—Dr. R. V. Brawley, Mooresville, N. C.; Dr. J. H. Dey-erle, Rocky Mount, Va. *Alternates*—Drs. H. G. B. Irvine, Evinston, Va., and J. H. Mabry, Tallahassee, Fla.

St. Luke's Hospital, Richmond, Va.—Dr. J. E. Cannaday, Christiansburg, Va. *Alternate*—Dr. W. W. Wilkinson, Nebletts, Va.

Retreat for the Sick, Richmond, Va.—Dr. R. W. Quaintance, Slate Mills, Va. *Alternate*—Dr. W. J. Gills, Farmville, Va.

Richmond Eye, Ear and Throat Infirmary.—Dr. C. M. Baggary, Washington, Va.

Virginia Home for Incurables, Richmond, Va.—Dr. S. E. Weymouth, Lodge, Va.

Richmond City Almshouse Hospital.—Dr. Thomas W. Murrell, Richmond, Va.; Dr. G. P. Harrison, Millwood, Va.

Hospital St. Vincent de Paul, Norfolk, Va.—Dr. R. J. White, Norfolk, Va. *Alternate*—Dr. J. C. Darden, Suffolk, Va.

United States Marine Hospital, Boston, Mass.—Dr. W. A. Lucas, Patterson, Va.; Dr. C. Covington, Creve, Va.

Commencement Exercises of the Medical College of Virginia

Took place at the Academy of Music, in this city, Thursday night, May 9, 1901. Forty-five men received diplomas as *Doctors of Medicine*, four as *Doctors of Dental Surgery*, and two as *Graduates in Pharmacy*. This is said to be one of the largest classes to ever leave this time-honored institution, notwithstanding the fact that the failures were somewhat more numerous than usual.

The following is the list of the *Graduates in Medicine*:

J. B. Abbott, West Appomattox, Va.
 M. Atkinson, Richmond, Va.
 C. L. Bailey, Skinquarter, Va.
 G. R. Benton, Wilson, N. C.
 E. W. Bowles, Richmond, Va.
 R. C. Brown, Lancaster, S. C.
 M. Campbell, Abingdon, Va.
 W. N. Chiun, Warsaw, Va.
 W. E. Cook, Centemial, W. Va.
 W. L. Cooke, Margauna, Va.
 L. T. Cosby, Jr., Abingdon, Va.
 H. W. Curtis, Lee Hall, Va.
 W. H. Dixon, Edward, N. C.
 M. Edmond, Millboro, Va.
 J. C. Foster, Lancaster, S. C.
 W. B. Foster, Richmond, Va.
 T. L. Grim, Goldsboro, N. C.
 P. Glover, Camm, Va.
 H. L. Goodman, Otter River, Va.
 V. Hammer, Luray, Va.
 J. L. Hankins, Basses, Va.
 I. M. Hardy, Kinston, N. C.
 W. A. Harris, Spotsylvania Courthouse, Va.
 O. W. Holloway, Gorman, N. C.
 Thel Hooks, Fremont, N. C.

J. W. Jordan, Ashland, Va.
 P. C. Journey, Olin, N. C.
 P. Kernan, Roanoke, Va.
 I. Kronenberg, Birmingham, Ala.
 E. N. Lillard, Graves Mill, Va.
 O. Lowry, Newark, N. J.
 G. T. Myers, Norfolk, Va.
 J. O'Brien, Jr., Manchester, Va.
 W. G. Painter, Draper, Va.
 S. F. Parker, Newport News, Va.
 H. W. Patton, Hartwood, Va.
 R. H. Scott, Richmond, Va.
 J. W. Smith, Goodman, Texas.
 J. N. Taylor, Newport, S. C.
 W. A. Thornhill, Fauquier Springs, Va.
 S. Tirman, New York, N. Y.
 J. A. Wagner, Bland, Va.
 W. W. West, Randolph, Va.
 J. W. White, Eureka Mills, Va.
 S. J. Wilson, Chestnut Fork, Va.

The Graduates in Dentistry were:
 W. C. Adams, Ottsville, Va.
 E. W. Bowles, Richmond, Va.
 J. D. McCue, Bluefield, W. Va.
 A. B. Sutton, Abingdon, Va.

The Graduates in Pharmacy were:
 N. T. Emmett, Beaufort, N. C.
 W. D. Turner, Virgilina, Va.

HOSPITAL APPOINTMENTS.

Seven hospital appointments were announced at the same time, as follows:

Old Dominion Hospital, Richmond, Va.—Dr. W. L. Cooke and Dr. H. W. Patton.

Retreat for the Sick, Richmond, Va.—Dr. J. Wood Jordan.

Sheltering Arms Hospital, Richmond, Va.—Dr. S. J. Wilson.

City Almshouse, Richmond, Va.—Dr. W. Brownley Foster.

There is only one appointment to the Almshouse this year, but according to agreement the Medical College of Virginia will receive two appointments next year.

St. Vincent Hospital, Norfolk, Va.—Dr. J. Warren White.

Protestant Hospital, Norfolk, Va.—Dr. Geo. T. Myers.

Southwestern (Virginia) State Hospital.

This is one of the three State hospitals for mental unsoundness of the white race in Virginia—located at Marion, Va. On the death of the first Medical Superintendent, the lamented Dr. Harvey Black, his first Assistant Physician,

Dr. Robert J. Preston, was elected Superintendent, and has served as such for many years. Drs. T. D. Kernan and Z. V. Sherrill were for some years Assistant Physicians. During the year past there was friction between the doctors of the hospital, which resulted in the bringing of charges by Drs. Sherrill and Kernan against Dr. Preston. Dr. Sherrill charges that lunatics have been kept in jails when they could have been cared for at the hospital; also that the Assistant Physicians were forbidden to consult together at the bedside of ill patients; that the dead room is seldom swept, and that rats have gnawed dead bodies in that room; that there had been improper uses of drugs, services of nurses, etc. Dr. Preston denies the truth of such charges in very emphatic terms, and refers to repeated resolutions of approval of his management by the Board of Directors. To relieve the tension and friction between the Superintendent and his Assistant Physicians, the Board, at its annual meeting on April 15, 1901, held for election of officers, removed both of the Assistant Physicians, and elected Drs. A. S. Priddy and King as the incoming Assistant Physicians. Dr. Preston was continued as Superintendent.

There is no officer of long experience against whom some charge cannot be brought, or something may happen under his official supervision which he himself did not notice at the time—especially an officer having so many duties as the Superintendent of an insane asylum. But it would be hard to convince the profession of Virginia, who have so long and favorably known this Superintendent, that he has been guilty of anything approaching gross misconduct or mismanagement. While we regret exceedingly that the Board felt under the necessity of relieving the friction by the removal of Drs. Kernan and Sherrill, who, we believe, are competent alienists in every particular, still we can scarcely see what better policy could have been pursued by the Board. The Superintendent is assuredly entitled to congenial assistants.

The Church Hill Medical Society of Richmond, Va.

Is a recent organization of doctors of the eastern section of the city similar to other societies throughout the country. It is to meet every second and fourth Thursday night of each month at 8:30 P. M. Its members are—nearly all of them—members of the Richmond Academy of Medicine and Surgery, but its place of meetings is at Murphy's Hotel (since the

burning of the Jefferson) every second and fourth Tuesday of each month. The officers of the Church Hill Medical Society are: Ramon D. Garcin, *President*; W. D. Beazley and A. L. Leftwich, *Vice-Presidents*; B. A. Ilord, *Secretary*; W. H. Parker, *Treasurer*. During its first meeting, April 25th, Dr. O. F. Blankenship read a paper on "The Relations of Chemistry to Medicine," which was well discussed.

Some New Medical Practice Laws.

The Medical Standard, May, 1901, remarks:

Few States remain in which there is no restriction upon the practice of medicine, and it is becoming increasingly difficult for incompetent men to obtain legal permission to engage in it. It is a pleasure to note that Texas and Kansas, the worst offenders, which have been for some years the dumping ground of the men rejected in other States and the "graduates" of the bogus medical colleges, too many of whom we regret to say come from Chicago, have come into the fold. In both these States the laws are made retroactive. In Texas all diplomas registered since 1891 must be submitted to the State Examining Boards for approval, and hereafter an examination will be required of all persons desiring to practice medicine in that State. The three leading schools of practice will have separate boards.

All persons now engaged in the practice of medicine in Kansas must within four months apply to a board of medical registration and examination for licenses. If a graduate of some college, the physician must produce his diploma. If a practitioner, but not a graduate of any recognized medical college, he must file an affidavit showing how long he has practiced. If he has practiced over seven years, then a certificate entitling him to practice will be given him, which certificate must be recorded with the clerk of the county in which he resides. If engaged in practice for a period less than seven years without a diploma from some school, the applicant must take an examination. Future applicants may be required to submit to examination or their diplomas may be recognized, as the board may rule. Osteopaths are exempt from examination. This law leaves much to be desired, but it is certainly a vast improvement over the previous lax condition in that State. It will certainly freeze out the bogus diploma men.

California and Missouri both have new practice laws which go into effect immediately. Ex-

aminations will be required of all desiring to practice in these States. In Missouri these examinations will be conducted by the State Board of Health, and any and every person desiring to "heal the sick," whether regular, homeopath, osteopath, magnetic healer, faith healer, or Christian scientist, will be required to submit to this test. The law provides that the examination shall be of "elementary and practical character," and shall embrace the fundamental branches of medicine. It is, however, provided that the examination of any applicant in therapeutics shall be conducted by a representative of the system of medicine of which the applicant has been a student.

The California law requires an examination before a Board of Examiners. The applicant must be a graduate of a medical college whose requirements were equal to those prescribed by the Association of American Medical Colleges at the time of his graduation. He must possess the license of some legally examining body. While Christian scientists, osteopaths, etc., are not specifically made exempt from the operation of the law, according to the *Pacific Medical Journal* a compromise was made by which it was understood they were not to be interfered with so long as they did not call themselves doctors. The organization of the Board of Examiners is unique. It is to contain nine members; five to be elected annually by the Medical Society of the State of California; two by the California State Homeopathic Medical Society, and two by the Eclectic Medical Society of the State of California. The constitutionality of this method of election is already called in question, since these Societies are not official or representative bodies, and are simply voluntary organizations of individuals, deriving no special powers from the State. This question remains to be settled.

A modification of the practice law was also passed by the Washington Legislature, aimed particularly at the osteopaths. It was vetoed by the Governor, but was passed over his veto, which was an impudent lecture of the Medical profession upon the dangers of drug treatment. The present laws of Indiana, Wisconsin, and Michigan have been strengthened by amendment, a new practice bill failed of passage in Minnesota, and, when last informed, others were still pending in Colorado and Connecticut. Medical legislation is getting into excellent shape throughout the country. The only danger is from the excessive ardor of its friends, who, in

their eagerness to exterminate the popular twentieth century "medical heresies," such as Christian science and osteopathy, load down otherwise praiseworthy measures with amendments and additions which make them offensive to our democracy-loving constituents. It is gratifying to note the growth of sentiment in favor of medical reciprocity. In two of the States just mentioned, Texas and California, provision is made for the recognition of the certificates issued by the examining bodies of other States.

American Medical Association.

The fifty-second annual session of the American Medical Association will be held in St. Paul, Minn., on Tuesday, Wednesday, Thursday, and Friday, June 4th, 5th, 6th, and 7th, commencing on Tuesday at 11 A. M. Arrangements have been completed for an excursion of the members of the American Medical Association to Yellowstone Park. The Committee of Arrangements has finally succeeded in persuading the officials to open up the park a week earlier than usual in order to accommodate the Association. A special train will be run from St. Paul to the Yellowstone Park, and the railroad officials have promised to do everything in their power to make it satisfactory to all concerned. The rates will be very low, but how low cannot at this time be definitely stated. Those who attended the meeting in 1882 will remember with much pleasure a similar excursion that was run at that time, and these will not need to be informed that the one now proposed will be full of enjoyment. The Yellowstone National Park contains more natural wonders than are to be found anywhere else in the world, and this will be a rare opportunity for our Eastern friends to see what this portion of our great West possesses.

Dentists for the Army.

The army bill of this year made provision for the first time for the care of soldiers' teeth by authorizing the appointment of dental surgeons by the Secretary of War on the recommendation of the Surgeon-General. These dental surgeons are to be in the proportion of one to every 1,000 men of the army, but are not to be more than thirty in all. That is, there ought to be seventy-five or more, but only thirty can be appointed. Contract dental surgeons are to have the pay of army contract surgeons, \$150 a month, and to have the same rights and duties as those "acting assistant surgeons." Contracts

will be made with them for three years, terminable after investigation by the Commanding General of a department, or by the Surgeon-General, when he thinks it will be for the interests of the service. Dental surgeons are to be between the ages of twenty-four and forty, and are to pass a professional examination before a board of three examining dental surgeons. This board has been formed by the Secretary of War and contracts with some surgeons have been made, though no dental surgeons have yet been sent to army posts.—*Medical News.*

The Pan-American Exposition

Was thrown open to the public in the city of Buffalo, N. Y., May 1st. A new booklet, just issued, embellished with many illustrations of the Exposition buildings and views, will be sent free to applicants by the Bureau of Publicity so long as the edition lasts. The illumination of the grounds, buildings, etc., is done with more than 300,000 electric lamps. The people of Buffalo have prepared themselves in a most ample way to entertain millions of guests during the Exposition; very moderate rates will prevail. The railroads all over the country are making very exceptional round trip rates. The Exposition will close November 1, 1901.

Analyses, Selections, Etc.

Acute Mania—Diagnosis and Treatment.

Dr. Daniel R. Brower, of Chicago, Professor of Nervous and Mental Diseases in Rush Medical College, in a recent clinical lecture given at Cook County Hospital, said (*Med. Standard*, May, 1901):

A doctor, in order to be successful in diagnosis, must have a judicious mind. He must be able to separate the chaff from the wheat.

After many efforts on the part of myself and the internes, we have been able to ascertain from this lady that she has been very nervous for about two months. Last Monday, the record goes on to say, she went out for a walk and came home very tired. The muscles of the hands and feet were stiff, the eyes were drawn, she was unable to speak, and finally lost consciousness. She had an attack in which consciousness seems to have been lost for a time.

Her past history, as far as it can be ascer-

tained from her, is negative. We presume that she has had two children. On several occasions she has told us the names of her children. When I saw her a few days ago in the ward she said the children were there. She actually saw them. I asked her whether she was married, and she said, "Yes, don't you hear my husband in the kitchen?" at the same time pointing behind her. These were disorders of sight and sound, delusions of sight and sound. In the course of my interview with her she heard a number of people talking round about and saw a number of people beside her, and yet the interne and I were the only persons present. For the greater part of the time she has been in the state of great exaltation. Now, she is in a condition of depression. This state of mind which she shows here to-day, this depressing state, is not her ordinary condition. I asked her a moment ago why it was and she said that they were going to take her away from her family, and therefore she is depressed. Her general condition of mind is one of exaltation throughout, and sometimes it is quite violent in its manifestations. She has just been in a condition of mania so that it has been necessary to place this simple restraint on her about which the newspapers of Chicago have been making so much fuss within the last week or two. They have wrought great damage on the poor people by bringing this great institution into disrepute and belittling the self-sacrifice and conscientious efforts of those who are ministering to the poor and distressed. This is a simple means of restraint, and it is the most reasonable, valuable, and useful device that has ever been invented for the care of delirious and maniacal cases. It is impossible for any harm to be done by it, and it gives these people enforced rest. It gives us better results than can be accomplished by the strong hands of the nurse. Two or three years ago I saw in credible institutions in the city of Moscow cases just like this with a nurse on either side holding the patient by her hands in order to keep her quiet. This sort of restraint is less irksome than the restraint by human hands.

Just what has been the cause of this acute mania the history does not show. As I already told you, she was brought here and no information could be procured from any source except such as could from time to time be obtained from her, and that is sometimes contradictory, as you can readily understand. The case has been characterized by excitement throughout. To-

day is the first time I have seen her in a depressed condition. There has been no temperature to amount to anything. The temperature has ranged between 98 degrees and 99 degrees; only once did it reach 100 degrees. Let me call your attention to this fact—that you will find manifest in many of these cases of mental disease a remarkable want of harmony between pulse, temperature and respiration. Take the record before us. At 4 A. M., pulse 120; temperature, 99 degrees; respiration, 32. The preceding temperature, 99 degrees; pulse, 84; respiration, 24. Here is another record of pulse, 120; temperature, 98 degrees; respiration, 20. Again, pulse, 130; temperature, 99 degrees; respiration, 30. You see the harmony which should exist between these three great functions of the body, pulse, temperature and respiration, is disturbed, and that is a common condition in these mental cases.

We have here, then, an acute mania, and, as I tell you, the history does not give us any information as to the etiological factors in the case. The examinations of the internal organs have been practically negative. Heart, lungs, abdominal cavity, organs of generation, with the simple exception of a slight laceration of the perineum, have all been negative, so that we do not know what positive factors have been at work in this case in producing this mental condition. It is not essential that we should know in order to mark out a proper line of treatment.

When she came to the hospital she did not sleep. She was sleepless, and she has continued so more or less ever since. Sleep has been produced only after the administration of narcotics, of which several have been tried. She has had the hydrobromate of hyoscin, and that did fairly well. Then she has had bromides and chloral. It is by no means an easy matter to precisely determine the proper hypnotic to give these cases. My own personal preference, to-day, is for either trional or chloralamid, because they are less depressive than any of the older hypnotics. Chloralamid is an admirable hypnotic. It is tasteless, and therefore easily administered to these patients; 15 to 20 grain doses in water at bedtime usually suffice. If sleep is not produced in an hour repeat the dose. Remember that the first dose must be given at bedtime. Do not make any effort to keep these patients continually under the influence of hypnotics. If you could give them from 6 to 8 hours of sleep a day it is all that is necessary. The balance of the time should be spent in improving their gen-

eral condition. If they do as this patient has done, make a little fuss occasionally, it must be tolerated. Let me again urge upon you this important fact in the treatment of these acute insanity cases. In a considerable proportion of them it is possible to get the best results attainable by treating them in some such institution as this. I doubt very much whether it is necessary to hurry off the majority of these cases to an insane hospital. Home is no place for them either. Her home is no place for her. It consists of about two or three rooms, which are occupied by her husband, herself and two children, and she is in all probability the woman of all work. A place like this offers her every possible opportunity for recovery, and it is at least well to give her a trial in an institution of this kind, which can now be found in any of the large cities. It is true that they are noisy and disturbing to some extent, but no more so than an occasional typhoid case that is delirious, a mania case like this, or a surgical case which is just being anesthetized.

The first indication, therefore, is to give her a reasonable amount of sleep. You may also depend on it that in the great majority of these cases there has been a failure of elimination. On palpation the abdomen will give you sufficient evidence of that. You can feel and also percuss the loaded colon. That is a common, everyday experience in my practice in examining these neurotic people. She will need a laxative of some sort. There is always some difficulty in giving a maniacal patient a pill. A very good liquid laxative is the fluid extract of cascara sagrada, and the most agreeable preparation is the aromatic cascara, which may be given in from 1 to 4 dram doses. It may be given at bedtime, together with the chloralamid. Thus you secure sleep and elimination at the same time.

The next thing of importance in the care of these cases is feeding. They need a great deal of food. Now, a patient in the condition this one is in will not properly masticate food. If you give them the ordinary meals of the household—bread, potatoes and meat—it will not be properly masticated. They should have liquid, concentrated food, and the ideal food, as I have so often told you, is egg-nog. With very many of these patients the digestion is poor, and egg-nog is not a good thing to digest perfectly. After giving a few of them the tongue coats, the breath is foul, and the abdomen becomes flexible. I have just such a case under my care at the pres-

ent time. I am giving my patient a combination of what I consider the best predigested foods in the market. The one is malted milk, and the other is somatose. A cupful of malted milk is prepared according to directions, and to this is added a teaspoonful of somatose. This gives you a concentrated, predigested food which has so little taste that it is not often objected to.

In addition to this the great majority of these patients require tonics, and the ordinary elixir of iron, quinine and strychnine is as good a one as you can use. I give it in dram doses. The one objection to it is that it is disagreeable to take, but sometimes these patients will take capsules and swallow them without chewing, and then spitting them out because of the taste. There you have the treatment along with what she is getting—rest.

I think that all of these cases of acute insanity, I care not what its form so long as it is acute, should have a reasonable amount of rest cure. While they are undergoing this rest cure they need a daily bath, and they need daily massage. Where it will be tolerated, and the great majority of cases will tolerate it, general faradization should be added to the treatment.

Pruritus Ani—Its Treatment.

Dr. James P. Tuttle, Professor of Rectal Surgery, in New York Polyclinic, is making some practical suggestions upon the treatment of rectal diseases in *International Journal of Surgery*. In the May number, 1901, he deals with *Pruritus Ani*.

The term pruritus ani, expressing in itself an itching about the anus, has come to be understood as a disease *per se*. It is the prominent symptom in so many conditions that the patient magnifies it into the real disease, and one is called upon to treat it as frequently as any other condition about the rectum.

An essential pruritus, a symptom without a cause, a disease without a pathology, does not exist in the rectum. There are always pathological changes about the anus or the rectum which account for this symptom. I do not mean that one can always see organic changes in the skin or the mucous membrane, but where such are absent, if the urine and feces be examined an excess of uric acid, or an acidity of the fecal passages, associated with marked fermentative products, will be found. There may be also reflex causes of pruritus, such as stricture, stone, pregnancy, etc. In many cases such conditions

as fissure, fistula, hemorrhoids, eczema, herpes, pediculi, erythema, urethral stricture, stone in the bladder, pregnancy, leucorrhœa, etc., these may often be looked upon as the cause. The surgeon, however, should be very careful in his prognosis with regard to the results of treatment by operations upon these different conditions. Frequently the hemorrhoids, ulceration, eczema, etc., are due to the same condition which causes the pruritus, and are not the cause of the itching themselves; as a consequence, operation upon these conditions does not in any way remove the itching.

The symptoms are described in one word, *itching*, remittent at times, but when once commenced, incessant, tormenting, tantalizing, excruciating, worse at night, destroying sleep and rest, and often annoying throughout the day, preventing attention to business and to study. It sometimes even leads to melancholia and suicidal tendencies. After it has existed for time, nervous phenomena appear in the shape of exhaustion and nervous irritability. In such conditions the diagnosis of neurasthenia has been made, and assigned as the cause of pruritus; whereas the facts were exactly the opposite; the pruritus was the cause of the neurasthenia.

Internal causes include such conditions as ulceration, fissure, piles, foreign bodies, catarrhal diseases, cestodes, neoplasms of the rectum, gonorrhœa and syphilis. They may all do so, but that any one of them is ever the sole cause of a true, aggravated type of pruritus I exceedingly doubt. I have so often seen these conditions operated upon, treated and cured, and yet the pruritus remain just as annoying as ever, that I have learned to be very wary in my prognosis with regard to the result of operations in such cases.

No case of pruritus should ever be prescribed for until a local examination of the rectum has been made and the presence or absence of cestodes or thread worms established. Other forms of intestinal worms may cause pruritus, but they are not frequently found in adults. Catarrhal disease of the rectum and anus frequently cause pruritus ani. In both the atrophic and hypertrophic forms of this disease pruritus is a common symptom. *In the first*, the dry, brittle condition of the mucous membrane is nothing more or less than a part of the atrophic catarrh of the rectum and anus; *and in the second*, that moist, sodden, whitish condition, described also as a part of chronic pruritus ani, is simply a part of a hypertrophic catarrh of the parts.

Of the *external causes*, the various tinea, scabies and pediculi may account for the pruritus. A true eczema occurs upon the scrotum and frequently extends around the anus. Always bear in mind that animal and vegetable parasites may be the exciting causes of the most intractable pruritus, and that the scratching due to these may bring on pathological changes in the skin and parts about the anus.

Rheumatism, gout, uricemia, diabetes, hepatitis and digestive derangements are etiological factors in pruritus ani. The more I see of this condition the more firmly am I convinced that the large majority of intractable cases of pruritus ani are due to intestinal fermentation, rheumatism and uricemia.

Certain articles of diet and drink, the use of tobacco, highly seasoned foods and stimulating condiments are all productive of attacks in certain individuals.

Treatment.—Local and reflex conditions may be found along with pruritus, but be very careful in assigning to them the production of pruritus. First, thoroughly examine the anus and rectum as high up as the sigmoid flexure, and determine the local conditions, and the reaction of the fecal movements. Study the urine and digestive functions of the patient before any attempt at treatment is initiated. In 90 per cent. of the cases I have found a more or less marked condition of uricemia. Along with this we frequently have muscular rheumatism and gouty conditions. In such cases, no absolute relief can be obtained for the pruritus without attention to the digestive and urinary functions. The regulation of the diet, the elimination of the uric acid from the urine, and the subduing of the local congestion around the lower end of the rectum and the margin of the anus will generally relieve the pruritus without any operative interference. Where parasites, cestodes, or foreign bodies exist about the anus or within the rectum, they must, of course, be removed; and where evidences of reflex irritations are present, such complications should be remedied. The radical and proper treatment of uterine diseases, the dilatation of the urethral stricture, the removal of stones in the urethra and gall-bladder, should all be carried out as thoroughly as possible during the treatment of pruritus. As to the treatment of rheumatic, uricemic and gouty cases, a largely nitrogenous diet composed of meat, eggs, fish, leguminous and non-starchy vegetables are good. As to medicines, employ alkaline diuretics, lithia, citrate of potash and benzoate

of soda, together with some form of salicylic acid. Upon the ability of the patient's stomach to take salicylates will depend largely the quantity and type of this drug. Piperazine occasionally acts very well where there is a gouty history.

The habits of the patient should be largely altered. In those cases in which excessive dissipation or overwork is the habit, quiet and rest should be enjoined; in phlegmatic dispositions in which there is a tendency to over-eating and indulgence in tobacco and other stimulants, such practices should be curtailed, and active, regular exercise insisted upon.

The bowels should be regulated by laxatives, and cold water enemas where there is considerable congestion of the mucous membrane. The patient should absolutely refrain from eating anything for several hours before retiring. The catarrhal conditions of the bowels should be carefully treated in each individual case.

The local treatment of the pruritus, where there is no ulceration or distinct pathological change, is simply a palliative adjuvant to the general treatment. Upon our success in giving the patient relief from this symptom will depend his confidence in our methods and faithfulness in carrying out instructions. By them we are able to relieve the itching, quiet the nervous condition, and obtain for the patient rest and sleep, which are necessary to the restoration of his general physical tone. Among the chief and simplest of the remedies for this purpose is hot water. The patient should bathe himself before retiring with water as hot as he can bear it. This should be applied and gently pressed upon the parts without scrubbing and rubbing them. It may be repeated in the night if the itching recurs. It is generally well, however, to use some other local application after the bathing. Of these the old fashioned *lotio nigra* is one of the best, and next to this comes some mixture of carbolic acid. I have found nothing so generally useful as a combination of this drug with salicylic acid and glycerine:

℞ Acid. carbolic ʒ ij
 Acid. salicylici ʒ iss
 Sodii bborat. ʒ j
 Glycerine ʒ j

M. Sig.: Apply at bed time and during night if necessary.

Methylene blue, one to five per cent., is also

an excellent local remedy. Camphophenique applied after the use of hot water is frequently very useful in allaying the itching, and in giving the patient a good night's rest. Chloral hydrate in the strength of twenty to thirty grains to the ounce of glycerine and water, sometimes affords almost instantaneous and prolonged relief, and yet there are some cases in which it makes the itching worse. Ichthylol in an ointment of five to twenty per cent. is occasionally very soothing and curative in cases where there are considerable external inflammatory conditions, especially where there is an erythema or eczema about the margin of the anus. When there is fissure, or in marked cases of atrophic catarrh, in which the mucotaneous border cracks whenever it is stretched open, the following ointment is very effectual:

℞ Ext. conii ʒ ij
 Ung. stramonii
 Lanolini aa ʒ j

Sig.: Apply well at bedtime and before having stool.

Where there is too great moisture, as in cases of hypertrophic catarrh, or ulceration at the margin of the anus, some sort of drying powder should be used during the day, being frequently applied in order to prevent chafing and to absorb the discharges. Oxide of zinc and calomel in equal parts is a cheap and efficient application. Aristol, stearate of zinc, bismuth, boric acid, colomene and talcum powders are all useful. When pruritus is due to constitutional cause, local applications and surgical measures will only prove palliative; no cure can be obtained until the constitutional condition has been remedied. The fact is every case of pruritus ani forms a problem itself.

Allingham has pointed out the effect of pressure over the parts relieving itching. I have sometimes been able to give patients a good night's rest by the application of a firm, gutta-percha compress held in apposition with the anus by a tight T-bandage throughout the night. The large majority of cases of pruritus ani are due to some catarrhal condition of the rectum and sigmoid flexure, to fermentative indigestion, or to uricemia and rheumatism, and if these conditions are properly remedied the pruritus will radically disappear. In the mean time, local applications will be necessary to give temporary relief.

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EMPYEMA OF THE FRONTAL AND ETHMOIDAL SINUSES, COMPLICATED WITH ORBITAL ABSCESS.*

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There are usually three well-defined stages in the clinical development of frontal empyema.

The first stage of the disease is commonly very insidious. It is the extension of a rhinitis, usually catarrhal, into the sinus, or air cavity. The infundibulum or fronto-nasal canal is narrowed by inflammatory swelling of its walls, leading at first to periodic and finally to permanent retention of mucous secretion in the sinus. The symptoms will be those of sub-acute or chronic attacks of rhinitis, with attacks of frontal headache. The ophthalmologist rarely meets with this stage of the disease, but since very grave sequelæ may lead to the loss of sight by involvement of the organ of vision, it is the imperative duty of the oculist to be fully awake to the importance of a practical knowledge of the pathology and clinical appearance of the nasal mucous membrane, not only in the region of the infundibulum, but in all the regions at which the nasal fosse communicate with neighboring cavities.

The second stage, that of a swelling in the upper-inner corner of the orbit, is seen and treated by ophthalmic surgeons. The elevation varies greatly in size from one centimetre in breadth to the whole length of the orbital border, and is usually hemispherical in appearance, of moderate resistance, and even surface. The contents of the swelling are of a rosy, glairy mucoid character. Frequently, on account of the tightness of the wall of the tumor, fluctuation cannot be made out, and redness and tenderness

are generally absent. In this stage the disease may be spoken of as a mucocele of the frontal sinus.

The third stage is that of suppurative inflammation, followed by caries with more or less orbital abscess and fistulous openings, not to mention, at present, other complications.

SYMPTOMS.

As a result of inflammation, followed by supuration, the sinuses, or air spaces of the skull, occasionally become enlarged, as in the case of mucocele. It is extremely difficult to diagnose such cases in the early stages, and consequently it is always a matter of great importance to obtain an accurate account of the onset of the disease when possible.

Suppuration of the frontal or ethmoidal sinus may be acute or chronic. Usually the first symptom is pain between the eyebrows and at the upper part of the nose, whence it may be reflected along the ramifications of the fifth cranial nerve. It may be accompanied by various reflex ocular symptoms, such as dilatation of the pupil, œdema of the upper lid, congestion of the conjunctiva, asthenopia, blepharospasm, or photophobia.

At times the pain is so severe and so continuous as to make rest by either day or night an impossibility. Stooping the head, sneezing or coughing greatly aggravate the pain.

There is tenderness over the sinuses on percussion, and on pressure beneath the supra-orbital ridge.

On careful examination of the nasal fossa, pus may be observed dropping from the air cavity into the nasal chamber at the front part of the middle meatus. The pus exhibits a foul odor perceptible alike to the observer and the patient, contrasting in this respect with the odor of *ozæna*, which is not noticed by the patient.

The pain and other symptoms are greatly mitigated when there is a free escape of the pus;

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but should the outlet of the sinus be occluded for any reason, and the pus should be retained within, as frequently happens, the bony walls of the sinus become greatly thinned, they yield to the pressure of the accumulating pus, and bulge outwards. To so great an extent may the orbital fossa be invaded by the outward, bulging sinus, that pronounced displacement of the eyeball occurs.

The pus from the frontal air cavity, finding its way into the anterior ethmoidal sinuses, may finally break through the enveloping wall and establish a direct communication between the neighboring tissues and the air cells, thus predisposing to emphysema whenever the patient blows his nose, sneezes or coughs. Or the pus may burst into the orbital cavity and induce an orbital abscess. Or, the rupture may occur into the cranial cavity with disastrous results. A progressive infection of the cranial bones may occur, in a small percentage of cases, leading to cerebral suppuration and occasionally to pyæmia. But, fortunate for the patient, the vast majority of neglected cases of empyema of the frontal sinus rupture externally through the skin, covering the inner half of the upper eyelid.

The orbital abscess may be acute or chronic; when acute, panophthalmitis may be quickly developed, thus causing total destruction of the eye, or the pus may pass from the orbit to the cranial cavity, thereby inaugurating a very grave train of cerebral symptoms—especially tending to develop thrombosis of the cavernous sinus.

The *acute orbital abscess* may be ushered in with a chill and rise of temperature. There will be pain, dusksiness, and swelling of the lids, especially of the upper, with bulging forward of the eye; congestion of the conjunctiva, with a yellowish-red chemosis; the mobility of the eye will be greatly impaired, and even absolutely fixed at the height of a severe attack. Pressure on the eyeball may or may not make it recede, and will cause great pain. A very important symptom is that obtained through exploration by the finger of the circumocular sulcus, which will reveal the tissues firm, tense, solid, and painful, some parts being more tender and tumid than others. In bad cases the eyeball becomes involved by infiltration and opacity of the cornea. The sclerotic, the optic nerve, and the internal tissues of the eyeball may be involved, and, as already indicated, the end may be total destruction of the eyeball by panophthalmitis.

The important lesson to be learned by our brief enumeration of the ocular symptoms and complications of orbital abscess is, that there may be all grades of impairment of the organ of vision, from slight amounts of diminution of visual acuity, through various grades of strabismus and double vision, contracted fields of vision, both for white and for colors, and various grades of color blindness, up to total annihilation of sight.

One of the most conspicuous group of symptoms of orbital abscess is exophthalmos, or bulging forward of the eyeball, associated with greater or less lateral and vertical displacement, and immobility of the eye. Exophthalmos is a symptom common to many diverse affections of the eye, and often it is the earliest indication of disease. In some cases the protrusion is so great as not only to present a repulsive deformity, but also, and this is the more serious fact, the bulging forward of the eyeball is so extreme that it cannot be covered by the eyelids, and it undergoes grave inflammatory changes, due to constant exposure to the air.

ETIOLOGY.

Suppuration of the frontal sinus is generally, and probably always, preceded by inflammation of the nasal mucous membrane. The rhinitis may have developed during the course of influenza, erysipelas, typhoid fever, pneumonia, etc., or it may have appeared as a result of tuberculosis or syphilis, or the inflammation of the nasal mucous membrane may have been due to an injury.

We have already stated above that orbital abscess is at times induced by empyema of the frontal and ethmoidal sinuses, and, therefore, it is a complication of suppurative diseases of those air cavities.

Commonly an abscess of the orbit is not only a very severe, but also a very dangerous pathological condition, and arises from many causes in addition to empyema of the cranial sinuses. Most frequently it is due to the lodgment of foreign bodies in the interior of the eyeball, but also to penetrating wounds, and even to contusions. It may be caused by facial erysipelas, puerperal fever, septicæmia, remote phlebitis, earbuncles, typhus fever, alveolar abscess, tonsillitis, rheumatism, the exanthemata, to exposure to cold and wet—these diseases inaugurating the abscess through orbital periostitis or orbital cellulitis; persons of tubercular or syphilitic constitution being more especially

prone to periostitis and necrosis of the bones of the orbit.

DIAGNOSIS OF ORBITAL ABSCESS.

The diagnosis of acute orbital abscess has been sufficiently indicated by the symptoms enumerated above.

Chronic cases of orbital abscess may occasionally so simulate an orbital tumor, that an exploratory incision may be necessary in order to complete the diagnosis. Fluctuation, of course, would be a very suggestive symptom.

But, on the other hand, when fluctuation is present, it must be borne in mind that all orbital cysts give fluctuation.

When exophthalmos is the most conspicuous symptom, as in the patient I had under observation, we must, of course, before commencing treatment, differentiate, if possible, orbital abscess from the other conditions that may, more or less remotely, simulate the abscess. There will be no difficulty in recognizing the exophthalmos of panophthalmitis, or that due to emphysema, or hemorrhage into Tenon's capsule. On the other hand, the marked œdema of the orbital fascia, which occasionally follows the surgical treatment of the ethmoid by the rhinologist, or the œdema, which sometimes follows the operation for strabismus by the oculist, may simulate in an alarming manner the exophthalmos of orbital abscess.

To a still greater degree may the ophthalmologist be embarrassed in differentiating between an orbital periostitis or an orbital cellulitis, accompanied by suppuration, and those cases which may not have this complication, and which will undergo resolution without surgical interference. But even in these embarrassing and trying cases of doubt, the best method of procedure is fairly well indicated—viz., early incision or puncture.

The exophthalmos of the above-mentioned kinds are comparatively rapid, even at times very sudden, in their development.

When, on the other hand, the protrusion develops gradually, it is commonly due to the presence of a morbid growth, which may either originate in the orbital fossa or extend into it from the neighboring spaces. Among the extra-orbital causes are thrombosis of the cavernous sinus, rupture or aneurism of the cavernous artery, these conditions presenting true pulsating exophthalmos; nasal polypi, extending from the nose into the orbit and causing marked proptosis of the globe; the very serious condition known as

encephalocele, also exostoses, have been found in all the regions around the eye, and, like other tumors of the superior maxillary, ethmoid and sphenoid bones, may grow into the orbit and cause extreme exophthalmos.

Of the intra-orbital causes, tumors are the most frequent. They may originate in the connective tissue, the optic nerve, the bony wall of the orbit, the blood vessels, or the lachrymal gland. These tumors may be simple or malignant, and they may or may not pulsate. Orbital aneurysms are also causes of the exophthalmos, and varicose conditions of the ophthalmic veins and their tributaries, and finally there are some cases of pulsating protrusion due to diseases so obscure that no diagnosis of the affection can be made. These might possibly be associated with a chronic orbital abscess, and for a while make difficult a correct diagnosis. It is through no undue stimulation of the imagination, then, that I have deemed it wise to enumerate so many of the diverse causes of exophthalmos, for they all, at times, have an important bearing upon the differential diagnosis of orbital abscess, and even then it may be necessary to appeal to the exploratory puncture or incision as a last aid to making a diagnosis.

Finally, as bearing upon the diagnosis of orbital abscess, I would say that care must be exercised in discriminating between immobility of the eyeball, due to pain and mechanical pressure, and that due to paralysis of the extrinsic ocular muscles.

DIAGNOSIS OF EMPYEMA.

Empyema of the frontal sinus can generally be recognized quite easily by the location of the swelling, which is above and further back than the lachrymal sac, and has resisting walls.

Care must be taken not to mistake the empyema for an abscess of the lachrymal sac. Empyema may be mistaken for fibro-sarcoma, or even for osteoma.

It should be borne in mind that cases of congenital malformation are on record by which the brain comes into direct relation with the orbit in the neighborhood of the lachrymal bone. The cerebro-spinal fluid evaginates the dura mater through the congenital opening of the bony wall, and presents a cyst, which may closely resemble the characteristics of an ordinary empyema of the frontal air cavity, usually the pulsation of the tumor, synchronous with respiration, and not pivot action, should make comparatively easy the diagnosis of encephalo-

cele. Transillumination of the frontal sinus is useful in making a diagnosis of frontal empyema.

TREATMENT FOR FRONTAL EMPYEMA.

Usually the treatment for the first stage of this affection is that which is appropriate and effective in the management of acute rhinitis. The first indication is to relieve the pain. A ten per cent. solution of cocaine, in conjunction with adrenal solution, applied to the sinus opening may so constrict the swollen tissues as to open the infundibulum, and thus, by giving exit to the pent-up secretions, relieve the pain. Antiseptic and detergent sprays are useful in this affection. When the cavities are cleansed as far as possible by sprays and having the patient blow his nose repeatedly, great relief is often afforded by throwing a nebula of a ten per cent. solution of camphor-menthol in lanolin into the nasal fossa, with the spray current directed toward the opening of the infundibulum. By this procedure there is a tendency to restore the normal air pressure in the air cavities, and evacuate any retained secretions, besides medicating the remote mucous membrane, which ordinary treatment fails to accomplish. In the acute stage an ice bag should be applied over the root of the nose and the frontal protuberances to subdue and avert the inflammation. Any poly-poid granulations at the infundibulum, or obstructing hypertrophies, or tumors in this region should be removed. If the pent-up secretion of the sinus cannot be removed by cocaine and adrenal solutions, in conjunction with air pressure, and the difficult procedure with the probe, it will be necessary to penetrate the sinus directly by a surgical operation.

Different operations have been devised, and I will refer briefly to the most useful ones. In the second stage of the disease, that of frontal mucocele, simple puncture of the swelling at the inner-upper angle of the orbit will evacuate theropy, glairy, mucoid contents, and give the patient great relief, but the bag will refill almost invariably.

A second method of treatment for the mucocele, in which the number of complete and permanent recoveries is about fifty per cent., is as follows:

A broad opening should be made into the anterior wall of the sinus, and the condition of the air cavity ascertained with a probe. With a sharp spoon polypi should be removed, and carious or uneven places carefully but thor-

oughly scraped. The cavity should be drained with a properly constructed and sterilized elastic tube or with a silver tube, and syringed with astringent and antiseptic solutions. About fifty per cent. of the cases relapse or leave permanent and incurable fistulæ. Some patients have been compelled to wear the tube for years, and have thereby secured perfect comfort, being put to no other inconvenience than the necessity of themselves syringing the small fistula every other day, when a small quantity of ropy, mucoid secretion is always washed out. The flange of the tube can easily be hidden by a small piece of isinglass. Knapp suggests that under these circumstances a gold tube should be used, in preference to silver, in order to avoid discoloring the skin.

The third stage of the disease necessitates a more radical, surgical procedure, of the same order as that required in chronic suppuration of the middle ear, when the attic and the mastoid sinuses are involved.

The essence of the surgical procedure here consists in exposing the frontal sinus, either by trephining its outer table (which is the most popular undertaking), or by making an osteoplastic opening of the frontal sinus, according to the method of Professor Czerney as modified by Dr. Golovine. This method of Golovine seems to me to be a most promising one. He states that it will induce us to undertake operations on the frontal sinus, not only with greater confidence, but also, what is a matter of great importance, for purposes of exploration in doubtful cases.

After exposing the cavity of the sinus all poly-poid vegetations and all carious and necrosed parts should be removed as thoroughly as possible, and communication with the nose re-established, or the cavity closed by granulation and epidermization.

The method of trephining is not new, since it was described in English and Continental literature, with reports of cases, over one hundred and fifty years ago. As I have said, this method, in one form or another, is in great favor at present. It is the method I have used myself in the Columbian University Hospital. Either the frontal or the orbital wall can be trephined. The frontal trephining has the advantage of permitting direct inspection and easy treatment of the whole diseased area, in scraping the fronto-nasal canal, and any part of the sinus that shows disease, and in removing polypi or carious and necrosed bone, and also avoids the possibility of

injuring the superior oblique muscle and the induction of distressing diplopia.

When the infundibulum is obliterated a new one may be made by a small gouge, as in the operation described by Lawson. With the index finger of one hand in the sinus, and the little finger of the other hand passed into the appropriate nasal fossa, an endeavor is made to find out the spot at which the tip of the finger in the sinus will approximate most closely to the one in the nose. After a little search, it will be found that at one point the fingers will almost meet, there being only a thin plate of bone between them. Having gained this information, the finger in the frontal sinus is to be withdrawn, but that in the nostril to be retained *in situ*, to act as a guide to the gouge, which is to be passed into the sinus, and made to force a passage into the nose through the lamina of bone, on which the tip of the little finger is resting. A communication between the frontal sinus and the nose having been thus established, an India rubber drainage tube, with holes cut at short distances, is to be introduced, one extremity of which is to be afterwards fastened on the forehead, whilst the other end protrudes slightly from the nostril. It may be interesting to call your attention to a case of frontal empyema operated upon by Leber, in which he observed pulsation in the fluid contained in the sinus. Bœckel has shown that such pulsation, which might possibly give the impression of communicated pulsation from cerebral vessels, is really always met with where a vascular membrane lines a cavity with a narrow opening into it. Then the sinus or sinuses should be carefully everted, removing as thoroughly as possible all polypi, and all carious and necrosed bone. After this the sinus should be carefully syringed with silver nitrate solution, and then with a solution of bichloride of mercury. The sinus should be syringed daily, for a varying length of time in different cases, with the astringent and antiseptic solutions until there is no longer any evidence of abnormal secretion, when the frontal wound may be permitted to close entirely. The nasal region of the infundibulum should be treated daily with antiseptic and detergent sprays.

REPORT OF A CASE.

Before closing this paper I desire to refer very briefly to the patient that I operated upon the 24th of May, 1900. The case was an exceptional one in several respects—viz., the tremendous displacement of the eye, causing a very

conspicuous deformity, the total absence of pain from the beginning to the end of his trouble, and the total absence of intra-ocular lesions other than those usually associated with moderately high degrees of myopia, such as posterior staphyloma and patches of choroidal atrophy.

The patient is a gentleman of fifty-two years of age, white, and a clerk under the District Government. His father died of apoplexy at the age of seventy-three. His mother is living and suffers with chronic rheumatism. Two brothers are living, and in good health; one brother died of heart disease. One sister is living, and in good health; one sister died of acute general tuberculosis, and another of pulmonary tuberculosis.

The patient enjoyed robust health during childhood, with the exception of a few of the diseases incident to that period of life, from which he recovered without sequelæ. When quite young, an ulcer developed on each cornea, which, after a long period of treatment, healed. Since that time he has had strabismus; and he associates his short-sightedness with this ulceration of the cornea. His present optical defect is compound myopic astigmatism, which, in my opinion, was congenital, and, in conjunction with the inflamed cornea, induced the strabismus and concomitant diplopia. This persistent and continuous diplopia for over forty-five years constitutes another very unique symptom in this patient. For years, with the correct adjustment of compound astigmatic lenses, he has found that one eye is exclusively used for distant vision, and the other for reading. In short, since early childhood he has not possessed single, binocular vision. When twenty-two years of age he contracted scarlet fever of a mild type, and recovered with sequelæ. Up to his thirty-fifth year he was employed on farm work; since that time he has been property clerk at the Washington Asylum. For eleven years after coming to Washington, he had attacks of malarial fever every fall, otherwise he has been in robust health. About three years ago he noticed that the upper lid of his left eye became so much swollen that he had difficulty in opening the eye. This condition was accompanied by considerable lachrymation. He suffered no pain, but the lid continued to increase in size. He allowed this condition to continue four or five months without treatment. In May, 1898, he came under my observation, and expressed the desire that I rectify the position of his left eye, which was displaced to an extreme degree.

I found with the test cards and lenses that his vision, though anisometric, was practically 6.9 for one eye, and 6.7 for the other. Palpation of the circum-ocular contents revealed fluctuation. On gently attempting to press the diseased eye back into the orbit, there was no pain, but pus was discharged into the right nostril, which anterior rhinoscopic examination revealed to be coming from the region of the infundibulum. I made the diagnosis of empyema of the frontal and ethmoidal sinuses, complicated with orbital abscess, in which the left infundibulum was occluded, the right uninjured, and the septum between the frontal sinuses perforated. The ophthalmoscope revealed that the fundus oculi was practically alike in both eyes, only presenting changes which are commonly found in eyes of rather high myopia, so that the intra-ocular portions had not been injured by the abscess.

I explained to the patient the gravity of his condition, and on his not finding it practicable at that time to undergo the radical surgical operation, I did the next best thing—viz., opened the abscess at the upper-inner angle of the orbit, thus discharging a large amount of very offensive smelling pus, syringed thoroughly with an antiseptic solution, curetted the carious parts as thoroughly as possible, inserted a drainage tube, and applied an antiseptic dressing. The wound was syringed and dressed daily for six weeks. The eye quickly returned to its normal position, but the discharge of pus through a fistulous opening never ceased. I then lost sight of the patient. Two years later—viz., May, 1900, the patient again came under my observation, with a fistulous opening still discharging pus and beginning to cause retraction of the upper eyelid. I advised a radical surgical procedure, which was done in the Columbian University Hospital on May 24th, under chloroform, with the kind assistance of Drs. Carr and Burnett, and the resident physician, Dr. Dixon. With the trephine, a button of bone, about one centimetre in diameter, was removed from the frontal wall of the sinus a little above the eye-brow, and near the median line. The cavities were thoroughly irrigated with bichloride solution (1-2000), and a large amount of thick, fetid pus washed out. The cavities were thoroughly curetted, there being extensive caries of the frontal and ethmoidal bones. An artificial infundibulum was made with the gouge, and a loose cord of four silver threads, each about 3-4 of a millimetre in diameter, passed through the frontal opening, down

the infundibulum, and out at the anterior nares, and then the two ends twisted together in the neighborhood of the frontal opening. The cavities were packed as thoroughly as possible with a long cord of iodoform gauze, and the skin incision partially closed. An antiseptic dressing was applied, and the patient was placed in bed. The cavity was irrigated and packed with iodoform gauze daily until June 7th, when he was discharged from the hospital. The silver cord was removed on June 5th, two days before he left the hospital. The sinuses were irrigated with antiseptic solution daily at my office for one week after he left the hospital, the solution always coming out of the anterior nares perfectly clear and free from pus.

After the operation the nostrils were sprayed daily with Dobell's solution. At no time after the operation did the temperature rise above 99.5 degrees, nor was there any pain. The wound in the forehead was completely healed on July 20th. There has been no recurrence of the disease since the operation, eleven months ago.

1101 13th Street.

DEVIRGINATION.

By N. E. ARONSTAM, M. D., Detroit, Mich.,

AND

LOUIS J. ROSENBERG, LL. B., of the Detroit Bar.

The subject of devirgination usually comes up in connection with rape. It *does*, however, sometimes happen that the medical jurist is requested to consider this subject by itself, separate from any question of rape. Thus, for instance, the fact whether or not the female ravished had any previous intercourse may be a material one in determining the severity of the crime. Again, it sometimes occurs that rumors are set afloat and circulated by an enemy of a young lady, to the effect that she had had coitus prior to her betrothal with a certain young man. She is made the subject of derision, her engagement is severed, her social standing undermined—in short, her whole future ruined. A suit for defamation is begun, and the medical jurist is called upon to investigate the truth of the affair. It is in such a case as this that the subject of devirgination becomes a matter of distinct and singular concern. Now, what is devirgination?

Definition.—Devirgination—or as otherwise

termed, *defforation*—constitutes the carnal deprivation of virginity in a woman at any time between puberty and the menopause. The term is derived from the Latin words “de” (from) and “virgina” (maiden).

The difference between devirgination and rape is this: While actionable devirgination always includes the commission of rape, the commitment of the later does not always include devirgination; for rape may be perpetrated upon a woman who is no virgin, and has had sexual experiences.

SIGNS OF VIRGINITY AND DEVIRGINITY.

(A.) *Signs of Virginity.*—In order to comprehend more fully the signs and symptoms of devirginity, it is necessary to dwell upon the physical and physis signs of virginity.

(1.) It might be stated right at the outset, that virginity is only possible after the full establishment of puberty—i. e., after the female has attained womanhood. With the advent of puberty, simplicity and childlike innocence gives way to modesty, bashfulness, and introspection.

(2.) Coincident with it, the whole framework of the female gradually undergoes an altered appearance. The pelvis broadens, widens, and becomes more prominent. Hair appears on the mons veneris, and in the axilla.

(3.) *The mammary glands* assume a rounded, plump and elastic contour. The nipples slightly project from the surface of the breast. There is a faint colored areola surrounding the nipple of a pink hue. At each menstrual epoch the breasts enlarge somewhat, and the areola becomes more pinkish.

(4.) *The labiæ* in virgins at the prime of life are firm, bulky, elastic, smooth, pinkish, and in close contact with each other, though this is not the case among Bushman and Hottentot virgins. (See Lusk, “*Science and Art of Midwifery*,” p. 4., Appleton & Co. 1895.) Beneath these labiæ, there are two minor folds, called nymphæ, which are also in close contact with each other. The upper labiæ are covered with fine hair, or lanugo.

(5.) *Clitoris.*—A normal size of the clitoris is considered a mark of virginity.

(6.) *The perineum.*—A firm, elastic, integral perineum is a significant sign of virginity.

(7.) *The Hymen.*—An intact hymen has but until recently been mistakenly regarded as the most reliable sign of virginity. It is now well established, that this view is erroneous, for an unruptured hymen has been found in many

women, the subject of copulation and child-birth. Still this sign should not altogether be regarded as a trivial one; it should always be given due consideration.

(B.) *Signs of Devirginity.*—Having described the signs of virginity, we shall now give the signs of devirginity. Before doing so, however, it should be noted that no physician should undertake an examination upon a female during her menstrual period, because menstruation may mar the very points of significance.

The following are the signs of devirginity:

(1.) *The mammary glands* are pendulous and more prominent than usually found in virgins. Still the reliance that can be placed upon the sign is very insignificant, for it takes more than one copulation to produce this condition. Old age and debility, too, may cause a pendulous condition of the breasts. All this is also equally true of the degree of pigmentation in the areola.

(2.) *Temporary Enlargement of the Thyroid Gland.*—There is an intimate relation between the sexual apparatus and the thyroid gland. An afflux of blood in one will determine a temporary enlargement in the other. Measurement of the neck of the female before and after coitus reveals a marked difference. The ancient Romans have utilized this sign to determine the presence of virginity in a newly married woman. Still, we would state, that more extended experimentation is necessary before putting any weight upon this sign.

(3.) *The Labiæ.*—The labiæ in women habituated to intercourse are flaccid, lax, atrophied, rugous, lacking the pinkish hue of virginity, and somewhat apart from each other.

(4.) *Clitoris.*—A large, long and erectable clitoris, with a long frenulum, suggests the probability of coitus having taken place.

(5.) *The Perineum.*—A lacerated and flabby perineum may indicate previous childbirth, for, in almost every case of parturition, the perineum becomes somewhat torn. During delivery the fourchette is almost invariably severed.

(6.) *The Hymen.*—The presence or absence of the remnants of the hymen—the carunculæ myrtiformis—may also be of some value in ascertaining whether or not parturition or cohabitation has taken place.

(7.) Women having been subject to advanced and repeated pregnancies, will exhibit white, atrophied, leucodermatic patches of skin and lines termed *linea albicantes*; the linea albæ assumes a brownish color. In the absence of any

other sign of devirgination, this one may be of great value to us. In all such cases, however, the medical jurist should never fail to make a thorough inquiry and examination as to the existence of intra-abdominal tumors, which may reveal the same manifestations.

(8.) *The Vagina*.—The vaginal mucous membrane in a virgin is thrown into a state of natural rugosity, which becomes effaced by repeated sexual intercourse.

This completes the discussion of the signs of virginity and devirginity, which is really the only important part of the subject under consideration. But, due to the fact that devirgination is almost invariably associated with rape, the medical jurist should always consult every point and question relative to it.

164 E. High Street.

MEDICAL ASPECTS OF CANCER OF THE BREAST.*

By WILLIAM OSLER, M. D., Baltimore, Md.,

Professor of Medicine in Johns Hopkins University, and Physician-in-Chief to the Johns Hopkins Hospital, etc.

Surgery has become largely the practice of medicine, and medicine, in part, at least, the preliminary practice of surgery, in so far as making the diagnosis for surgeons and handing them our cases for operation. We consulting physicians see a cancer of the breast in two stages, because the patients come to us as the lesser of two evils; they prefer the opinion of the physician who may possibly tell them that an operation is not necessary, to that of the surgeon, whom they fear will surely tell them that an operation is necessary. I see every year three or four cases of cancer of the breast in its early stage, or cases of suspected breast tumor. But the cases to which I wish to call attention this evening form a more important group for the physician to recognize—namely, the *late manifestations of cancer of the breast*.

Now, they may be grouped according to the metastases, for it is through these that we are brought into relation with them, into *cerebro-spinal, thoracic and abdominal groups*.

We will first consider the *cerebro-spinal group*. Owing to the fact that the metastases

are almost as frequent in the bones as in any other part of the body, we see a proportionately large number of cases with symptoms pointing either to disease in the cranium, the spinal canal or the vertebrae. That point has not been sufficiently brought out, certainly not by medical writers. Statistics are available now from several of the large German clinics, and the percentage is considerable.

The first case that called my attention to the matter was a remarkable one that illustrates the *cerebro form of metastasis* following breast cancer. Many years ago I was asked to see a case with Dr. Agnew, in Philadelphia. The woman suffered with headache, vomiting, and progressive coma. She had a double optic neuritis, and it was quite evident that she had a brain tumor. It was not until I saw her the second time that Dr. Agnew remarked: "Why, I forgot altogether that Mrs. R. had cancer of the breast eighteen years ago." On examination, there was a hard, firm, scirrhus nodule in the breast. That case is paralleled by many in the literature, and illustrates, too, the fact that often years after a malignant disease has apparently atrophied a secondary growth may occur. It is the only case, however, out of quite a long series I have had, showing pronounced cerebral symptoms.

The *spinal group* is very much more important, and really forms a very considerable number of all the cases of late metastases in carcinoma of the breast. They are important, in the first place, because they are very apt, indeed, to be mistaken for something else. The metastases may occur in the body of the spine or within the spinal membranes; and a very small new growth, as in a case recently seen in the Hopkins, may cause very serious symptoms. I saw a very remarkable case a few years ago with Dr. Pole which interested me extremely, as we had made an error in the diagnosis. The patient had a marked neuralgia of the neck and arm, and held her head in a peculiar position, always a little obliquely. On the first visit, I did not recognize the condition, but thought it an ordinary cerebro-brachial neuralgia. On the second visit I examined both breasts, and found a well marked scirrhus tumor in the left one.

But the cases that are of most interest for the physician are those described by Charcot, under the name of *paraplegia dolorosa*—an excellent name. The onset of these spinal symptoms may be early, within a few months after detection of the cancer, or may be delayed for months or

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years; or, on the other hand, they may occur long before the tumor is recognized. The patient and the physician may not know of the existence of the tumors. An instance of that kind occurred at the Johns Hopkins Hospital in 1894, when a man was brought into Ward C from Union Station, having become completely paraplegic on his way up from Florida. He had had curious symptoms of numbness in the hands and feet, accompanied by burning pains, and his physician, who lived in Massachusetts, had been sent for to bring him home. By the time he reached Baltimore he had become so ill that it was decided to bring him to the hospital. He was stripped for examination, and as he stood up it was quite evident that one breast was very much larger than the other. The patient had never noticed this, but palpation showed a firm, hard, indurated tumor.

With the existence of the primary tumor of the breast the painful progressive paraplegia was easily and readily explained. The difficulty in these cases arises from the fact that weeks and months often intervene between the onset of the pain and the development of the paraplegia, and that pain, and pain alone, is the feature presented by the case for many months.

Dr. Thayer may tell us of a case of that kind which he saw last year. Two years, I think, following operation on the breast the patient began to have these pains. She was a nervous, hysterical individual, and these pains were regarded for a time, at any rate, as probably functional, and due to her neurotic condition. I saw her first with Dr. Atkinson, and it was not possible then to say what was the trouble. There were no signs of local recurrences, although the condition was suggestive. Three weeks ago, when I saw her again with Dr. Atkinson, she had the well characterized features of paraplegia dolorosa. These cases are exceedingly trying, because one is in doubt whether he has to deal simply with the pains of a neurasthenic patient, and dreads to give morphia; yet the pains become progressively worse, and he has to give morphia ultimately in large doses while he has the feeling, as I have had in some cases, that the patient should have had the morphia, and plenty of it, very much earlier.

The early symptoms usually are not associated with a scar. They are usually distinct pains, a feeling of tingling and numbness, neuralgia of great intensity, and shooting pains down the front or back of the legs, then a slight paraplegia followed by complete paraplegia; but long be-

fore this last you have the characteristic retraction of the legs, associated with severe pain. The degree of suffering is probably as great as that seen in any other condition in medical practice. Now, remember that all this may occur without the slightest sign of a secondary tumor.

A patient died in the Hopkins a few months ago who had these agonizing pains with paraplegia, but no definite tumor, no kyphosis, and, as a rule, you find no evidence of tumor masses in the spinal column, but must accept as the signs of tumor—rather the signs of pressure upon the nerve roots as they emerge from the spinal cord. In the case referred to it was found at autopsy that the tumor growing from the membranes and pressing upon the cord was not larger than a walnut.

The spinal list is the longest of the cases I have seen, and in scarcely one of my long series was the condition recognized in the early stage. What I wish to emphasize particularly about these cases is that they are, so far as we know, utterly hopeless cases; and just so soon as you can reach a diagnosis, give the patient all the comfort and aid that medicine can offer, and you need not blame yourselves for making them morphine habitues. It gives them relief for a time, but you cannot cure them.

The thoracic group is next in importance, and naturally owing to the close relation and the liability to involvement of the lymphatics, that group of cases is fairly numerous. Metastases may occur in the pleura, in the mediastinum, or in the lungs. Cases in the pleura are common. There is usually an invasion of the pleural membrane, and effusion. The patient comes with symptoms of pleural exudate requiring tapping, and you may be surprised to find a bloody fluid and the necessity for frequent tapping. These patients may die with little or no distress other than that associated with dyspnea. The pulmonary cases are exceedingly rare. I have seen autopsies showing such things, but do not remember at the moment a clinical case of the kind. Involvement of the mediastinal gland is, next to that of the spine, the condition with perhaps the greatest degree of distress; and when a year or a few months following the removal of a breast cancer the patient begins to have a cough or dyspnea without signs of effusion in either pleura, then you know, even if the glands above the clavicle are not enlarged, that one of the worst accidents has happened. Those cases, as a rule, are very, very distressing, and die of suffocation. There is increasing pain, dyspnea

and pulmonary œdema, and fortunately the duration of the illness is shorter than in the spinal cases.

The *abdominal group* comes next; and first in that we have the *hepatic* cases. Metastases of the liver are perhaps the most common if you take into consideration a large series of cases. Large nodular masses can usually be felt or seen, and death is rapid without much pain.

I want, in conclusion, to draw attention to a very remarkable circumstance in connection with the secondary tumors following breast cancer. You know it occasionally happens, as in the case of Dr. Agnew's, which I mentioned, that the tumor of the breast ceases to grow, the fibrous tissue predominates, and the growth becomes a firm, hard, cancerous mass, shrinking to perhaps a third of its original size. It is one of the special characteristics of a scirrhous tumor that it not only tends to increase, but that it tends to heal to a certain measure just as tuberculosis does. If you look at the central portion of a nodule of the liver, it is firm, hard, and has undergone changes that are really conservative, and on the road to a healing. In a few of these instances of a secondary growth, one sees remarkable changes that are almost curative; at any rate, they proceed to such a degree that the tumors themselves disappear, and what is more important, the symptoms they cause disappear, and the patient, who was in an apparently hopeless condition, recovers; he gets up, and our grave prognosis was apparently a false one. A number of such cases are on record, and if you should look through both volumes of the *Index Catalogue of the Surgeon-General's Library*, you will find some interesting reading on this subject. A few cases are given there in which the secondary tumors have disappeared entirely.

Two cases of interest in this line have come under my observation. Four years ago last September, a young woman came from Pennsylvania to consult me about a lump in her breast. I sent her to Dr. Halsted, who, in November, removed a very large tumor, which had already involved the axilla in the right arm so that part of the vein had to be removed. It was an extensive growth, and there was no doubt about its cancerous nature. She did very well, and was soon able to be about, although Dr. Halsted had given a very unfavorable prognosis. Two years ago she came to me again complaining of pain in the side and a loss of vision in one eye. I was sick at the time, unable to examine her carefully, and as her father was then under the care of Dr. De-

Schweinitz for a diabetic cataract, I asked her to see him. The Doctor sent word back by special delivery letter that the patient had a sarcoma of the choroid. He did not know about the breast tumor that had been removed, but said that "it is a secondary growth, of course, in the choroid, the first I have ever seen, and the twenty-second on record." All that winter she seemed to get worse, and in June, before I went away for my vacation, I went up to see her, and bid her good-bye. She was then in very bad condition with secondary tumors in the other breast, nodules in the liver, loss of power in the legs, and was suffering a very great deal of pain. She was given considerable morphia, and during the fall began to improve, so that to my astonishment when I returned I found her not only alive, but rapidly improving, and she has continued to improve. A year later the tumor nodule in the breast had disappeared; she had regained the power of walking, and what seems more remarkable, she was regaining vision in the affected eye. I see Dr. Randolph shaking his head, and I know it is wonderful, but it is not the only remarkable thing in this case. She still has some pain on walking, and has a slight kyphosis about the fourth dorsal, and though she still has to take a great deal of morphia, she gets about, and recently drove two miles to the station to meet me.

Now, a still more remarkable case you may see walking about Baltimore to-day. It must be about four years ago that a young woman came to me with a tumor of the breast, and I sent her to Dr. Tiffany, who removed the cancer. About this time last year she began to have girdle pains, pains down the legs, and became completely paraplegic. Dr. Lockwood and Dr. Tiffany for a time expected her death any day or hour, but she gradually improved, went to the country, and about four months ago she walked from Union Station to my office. She has some secondary nodules, a stiff back, and has to take a certain amount of morphia, but she is able to be about and attend card parties and other entertainments for her enjoyment.

Now, those are cases for which you could not do better with treatment by Christian Science or at St. Ann's or Lourdes.

DISCUSSION.

Dr. Wm. S. Thayer: The case of paraplegia dolorosa to which Dr. Osler referred was a very interesting one. I first saw her about a year after the operation. She had been much relieved for six months, and then began to have a

variety of very distressing nervous symptoms. At first the chief complaint was pain that she could not localize. She would say that she was suffering intensely, but she could not put her hand on the painful area. Her pains were relieved by different simple remedies, such as the coal tar products or codeia, and then all of a sudden her pains would disappear, and she would complain of vague symptoms of unrest, and would walk the floor for hours without any apparent reason. She went through the whole line of hysterical symptoms, and though we suspected that it might be due to a recurrence of the carcinoma, we could not be sure of it, and her symptoms made us refuse to give morphia and to put her on the rest cure. She went to Philadelphia for a month or so, without any benefit, and while there her pains became worse, and they began to use small doses of morphia. Later in the fall, though her pains were much more marked, there was no evidence of a recurrence of the growth, and it has only become evident within the last month or so.

The case simply shows how very unpleasant such cases may be for the patient, and how difficult it is to decide whether or not to give morphia, or to separate them from their family and friends for rest treatment.

Dr. H. B. Jacobs: With reference to *cerebral metastases*, I had the pleasure, last summer, of seeing a very beautiful specimen exhibited and explained by Dr. Collier, of London. It was a cancer of the brain, secondary to cancer of the breast.

With regard to the cases Dr. Osler referred to last, those that apparently recover to a certain extent, a case that has been under my notice for the last two or three years may be of interest. The patient, a friend of mine, was operated upon about two years ago by Dr. Richardson, of Boston, for cancer of the breast. It was an extensive operation, and before the wound healed the patient was complaining of the most intense pain in one leg. It did not seem located in the joint exactly, but was more particularly along the course of the sciatic nerve. The leg then began to draw up a little, and any movement of it was excruciatingly painful. Dr. Dalton was then asked to see the case on account of the nervous symptoms. The leg of the same side as the original cancer was the one involved, and it had wasted away to a small size, with some swelling only at the head of the femur, indicating that the metastasis might be at that point. A year ago it seemed as if she might die at any moment,

and when I went away last summer I bade her good-bye, never expecting to see her again. When I came home in the fall, she was much better, and from that time on has steadily gained a little until within the last month or two she has been able to be out of bed, and to take an interest again in some of her household duties.

Dr. Joseph C. Bloodgood: There is very little to add to Dr. Osler's observations, which make me feel that the surgeon should be a physician, and look after the ultimate results of his breast carcinoma cases. At Dr. Halsted's clinic we have had now over 300 cases, but we have been seldom able to observe our cases in regard to metastases. We have had very few autopsies, as those dying outside of the hospital or out of the city are beyond reach for that purpose. I remember the first one I was ever able to get, for I had to travel thirty miles from here, and then drive ten miles in the country. The few I have had since have been upon patients who, for some reason or other, considered themselves under great obligations to the surgeons, and promised an autopsy in the event of death.

I have just been over our records of these cases, and they fall into the groups suggested by Dr. Osler, except that metastases of the bones are more rare than I had thought from my reading of the literature—I mean metastases of the bones that manifest themselves clinically, for you may have metastases of the long bones without any clinical manifestations. In this group of 350 cases, there are only six of fracture of the neck of the femur, and the probability is that all of these were due to metastasis; one case which I saw myself I am positive of. The tumor had been removed five years before, and suddenly, after a very slight trauma, a fracture of the neck occurred. Extension was used, but a definite tumor occurred at that point, and later she died with nodules in other parts of the body.

Recently we have had our first autopsy on brain in this group of 350 cases. In three cases, after the patients had seemed perfectly well for two or three years, death suddenly occurred after hemiplegia.

Cases of metastases of the abdomen, associated with obstruction, are very rare; I have only observed one case. They are most common in the liver and the post-peritoneal glands. In only one instance have they broken through and caused obstruction.

The late manifestations of tumors, both carcinoma and sarcoma, are very distressing. There are plenty of instances showing a perfectly

healthy condition for five years, and then death occurring from metastasis. We used to think the three year limit was a fair one to pronounce a cure of either carcinoma or sarcoma, but that has had to be given up. As a rule, those that have lived for three years without evidences of local metastasis get well, but every now and then we have seen a case recurring after four, five, or even six years.

Dr. Osler: Dr. Bloodgood's remarks are very interesting, especially with regard to the time limit. That it may exceed three years is a matter to be borne in mind, particularly in view of just such cases as the one I referred to as having been seen with Dr. Atkinson. That woman had been perfectly well, strong, capable, and active for so long after the operation that he had himself overlooked the fact that she had this old atrophied scirrhus.

I want to call your attention to a very interesting little book in our library, by Mr. Munn, of Middlesex Hospital, as it contains many interesting points and much valuable clinical information on this subject, and also to another by Dr. Shield, also on carcinoma of the breast.

PROBLEMS INVOLVED IN THE TREATMENT OF ECLAMPSIA, WITH ILLUSTRATIVE CASES.*

By J. WHITRIDGE WILLIAMS, M. D., Baltimore, Md.

Ever since Leber demonstrated the presence of albumen in the urine in these cases we have been accustomed to consider albuminuria and eclampsia as associated conditions. It has been shown, however, in a long series of cases that in many instances albumen is not present in the urine until after the eclampsia occurs, and autopsy has shown in many cases that there was no evidence of renal disease. A few years ago a number of persons demonstrated that lesions of the kidney were not always present, and not necessary to eclampsia, but that lesions in the liver were more constant, and that they were usually of the nature of a focal necrosis; they might be present in other organs as well. Since that we have been obliged to recast our ideas as to the etiology of eclampsia, and must now consider it to be an intoxication of some kind. The

problem is to discover the nature of the toxæmia. Something is circulating in the blood of a poisonous nature, but as yet we have not been able to demonstrate any particular substance that will produce these lesions.

The great interest in a practical consideration of the question is two-fold—first, how can we prevent its occurrence, and how can we treat it best when it does occur. The second question is, to my mind, more readily answered than the first. The outlines of treatment are those upon which we are pretty well agreed—namely, delivery as soon as possible, free bleeding, and the introduction of salt solution into the veins directly or under the skin.

A most important practical question is the recognition of cases in which eclampsia is liable to occur in order that we may take steps to prevent it. This is a difficult problem, and I am sure that after I have concluded you will be less certain of your knowledge than when you came here.

This time last year I thought I knew a great deal about eclampsia, and I wrote an article on the subject for a German *Encyclopedia of Medicine*, but I have had a number of experiences this last year that have shattered my belief in myself and in my knowledge as to when eclampsia is going to occur in any given case. You will hear a good many men say that if you give them the care of a pregnant woman during the early stage that eclampsia will not occur, and, that when it does occur to anybody, it is the fault of that physician. Of course the man who does not regularly examine the urine is open to censure, but, on the other hand, even when we examine the urine every day in a given case, convulsions may still occur when we least expect them.

The three means for detecting the possibility of eclampsia are the detection of albumen in the urine, the demonstration of the presence of cases and a change in the amount of urea. Finding these, you know some things to do—for instance, that the best drug to give is milk and water in large quantities. In many cases your patient will do well; in others she will not. To the last class of cases I want to call your attention.

Here is the chart of a woman whom I saw in private practice. Her urine was examined at regular intervals, and was perfectly normal up to six weeks before term. At that time I found a trace of albumen in the specimen, and asked that the urine for the next twenty-four hours be saved. To my surprise, she passed less than 600 gm. and about 1 gm. of albumen in the

*Read before the Clinical Society of Maryland, Baltimore, April 5, 1901, and sent with discussion, by the Secretary, Dr. H. O. Reik, 5 W. Preston street, for publication in this journal.

twenty-four hours. She was at once put on milk diet with a happy result, so far as the increase of urea was concerned. It went up to 4,600 cc., and coincident with this there was a satisfactory increase in the amount of urea.

Right here I should say that I consider the statements in the text-books regarding the normal amount of urea that a woman should excrete as being incorrect. As the result of examination in a number of cases, we find it to be about 22 gm. in the twenty-four hours. Dr. Whitney, at the Maryland General Hospital, tells me that he has found it in their institution to average 16 gm. The text-books run it up as high as 32 gm. Of course differences in the class of patients must be considered in this connection.

To return to our case, with the increase in the amount of urea to normal there was also a constant increase in the amount of albumen, so that on the day before delivery there was 7.5 gm. of albumen in the day's urine. I stood ready to interfere at a moment's notice, but she was delivered without trouble. The percentage of albumen, however, continued to increase, until it reached 12.5 gm. a week after delivery, when it began to fall gradually. As the albumen diminished there was a marked increase in the amount of urea, which had stood stationary until after delivery. It suddenly shot up until she was passing 70 gm., an amount I have never seen equalled. Why she continues to pass this large amount of urea I am unable to tell you.

Here is the chart of another case of very considerable interest. The woman entered the Hopkins Hospital, pregnant for the first time. There was a little albumen in the urine and a few casts. She felt pretty well, and in spite of the low percentage of urea, did well for a time, but soon began to have headaches associated with nausea and vomiting, and although milk diet was instituted, the urea diminished to 5 gm. in twenty-four hours. She was nearly at term, and we decided to deliver. Both mother and child have done extremely well. She was delivered on February 28th, and the next day the urea passed above the normal amount, and the albumen disappeared completely. That was a very satisfactory case, and is the sort we frequently see.

This case bothered us considerably. She entered the Hopkins last September with the history of a very difficult labor and eclampsia two years previous. She was not feeling badly at the time, but was much worried. The urine was

found to have casts, but no albumen. The amount of urea was small, and she was placed upon milk diet. The albumen soon disappeared. As the urea dropped, she began to have disagreeable hallucinations, and the amount of urea did not increase on the milk diet. She fell into labor later and delivered the child spontaneously. The next day the urea rose to 38 gm., and from that time on remained at a high level. The result in all these cases was very satisfactory, but we were always in doubt as to what ought to be done.

Here is a case that was very instructive to me. The urine had been examined at regular intervals and suddenly showed albumen, with only 15 gm. of urea. She was put on milk diet, and the amount of urea and albumen both increased. On one day the urea reached 24 gm., and that night she had an attack of eclampsia, with several convulsions. She was delivered and made a good recovery.

This case shows very clearly that no matter how carefully you study your cases, they may suddenly, with a practically normal amount of urea and a very slight amount of albumen, have an attack of eclampsia without any warning.

I want to say that we cannot lay down a definite rule for action, but if the woman seems to do well even with a comparatively low urea percentage and a considerable amount of albumen, I leave her alone, but stand ready to interfere at the slightest sign of danger. I believe that is the best we can do at present, for we have at the present time no ready method of estimating the total output of nitrogen, and the ordinary estimate of urea does not give us a satisfactory index as to the condition. Probably in a few years we may have an index of more practical value, but just now the question is extremely unsatisfactory, and, as I said before, I know far less about eclampsia now than I thought I did this time last year.

Dr. Pierce Kintzing reviewed the numerous theories as to the *Causation of Eclampsia*, which have been advanced since the earliest times, especially since Leber announced the connection between albumen and eclampsia in 1842. The evidence against albumen as a causative agent was given particular attention. The renal insufficiency theory, he thought, did not account for the pathological lesions. It was pointed out that sugar is sometimes found in these cases, and he cited two instances occurring in his own practice, and four other reported cases. The liver degeneration, as pointed out by Tarnier and

others, was described, and an attempt made to determine the nature of the destructive poison in the circulation. In four of Skelton's cases acetone was found. The author cited two cases of his own, in one of which acetone was found in abundance. He suggested that acetone or some allied substance, if not itself the destructive agent, might be the index of the poison in the circulation.

Dr. George W. Dobbin: I have been very much interested in this subject, for I had the privilege of the preparation of these charts. I think it is pretty generally conceded that a low line of urea is of more definite character than a high line; the high curve will not necessarily mean that the woman is not in a bad condition, whereas the low curve does indicate that the woman is in a dangerous condition. That was particularly well shown in the case of a woman who came in several months before delivery. She had a slight diminution in the amount of urea, with a decided increase in the albumen, and was put on treatment. She improved so that we thought she would have no trouble. She went into normal labor, and was delivered within four or five hours. A half hour later she had severe convulsions, was treated for the next three or four days by all of the known means, but got steadily worse, and died five days after delivery.

Dr. Wm. S. Gardner: I am very glad to see that Dr. Williams takes this view of the subject, that you cannot make a definite prognosis of eclampsia, because with his ability and his facilities for investigation, it is highly probable that some time soon he will be able to tell us something more definite about its etiology. Something over ten years ago, after making a long series of examinations of the urine of pregnant women, I read a paper before this Society, in which, as a result of that work, I expressed practically the same conclusions that Dr. Williams has given to-night—namely, that there was absolutely no defined relationship between albuminuria and eclampsia. My views were very much criticised at the time.

SWEET CHALYBEATE SPRINGS, VA.

By T. M. BAIRD, M. D., Sweet Chalybeate, Va.

Resident Physician of the Sweet Chalybeate Springs Va. and the Old Sweet Springs, W. Va. Late Editor of the *Hot Springs (Ark.) Medical Journal*. Late Assistant Surgeon U. S. Volunteers.

The Sweet Chalybeate Springs, Alleghany county, Va., are in the Alleghany mountains,

2,300 feet above sea level, and supplies carbonated iron water. Irrespective of the fine springs, this place is an ideal one for a summer resort—the mean temperature from April to November being 60 degrees Fahr. A delightful, cool breeze is a constant source of pleasure, and the surrounding mountains offer attractive inducements to mountain climbers.

Dr. Geo. H. Rohe, of Baltimore, in the *Annual of Universal Medical Science*, 1888, said: "Mountain climbing is gaining some reputation as a therapeutic agent in this country. In Europe, Oertel is the great advocate of the method, and he has shown its great merits when applied in the proper cases. Barkan says that after several weeks spent in mountain excursion the condition of the patient is radically changed for the better. There is an elasticity of the mental processes in the place of the former habitude; will, thought, and impulse seem to move on wings. The formally dull senses are sharpened. The eyes sparkle, and the flabby cheeks become fuller and rosy. The prominent abdomen is reduced to more seemly dimensions, notwithstanding that food and drink are taken with greater relish, and the chest is expanded. A person who before was heavy and dull, now feels as elastic and springy as if the burden of earthly existence had been lifted from his shoulders, and he goes running and skipping along, covering a distance of ten or twelve miles a day. He is possessed of a new spirit, the pulse beats more strongly, and the entire circulatory tone is improved. Plethora, corpulence, neurasthenia, chlorosis, incipient phthisis, and, in fact, most chronic circulatory and nutritive disturbances, are amenable to this plan of treatment."

If such an authority as Dr. Rohe can speak in such glowing terms of mountain climbing, how much more we should appreciate it when the patient can have the benefit of a strong iron water to complete the cure.

The following is the analysis of this spring, as made by Rowelle and Prof. Rogers:

ANALYSIS OF ONE GALLON OF WATER.

Iron Carbonate	32.	grains.
Iron Combined	16.	grains.
Calcium (Lime) Carbonate	64.	grains.
Magnesium Carbonate	48.	grains.
Magnesium Sulphate	16.	grains.
Silica	16.	grains.
Sodium Hydrochlorate	8.	grains.
Carbonate Acid gas	103.27	c. inch.
Nitrogen	10.28	grains.
Oxygen	80.	grains.

It will be seen that the total salts contained in this water amounts to 200 grains to the gal-

lon; the principal ingredients being iron, lime and magnesia. The large amount of gas present makes the water truly a carbonated water, and it is palatable to the most delicate taste, although it has a decided mineral taste, but no odor whatever. It has a reddish color, causing the natives years ago to christen it the "red springs."

From the analysis it can be readily seen that this water is adaptable to a large number of diseases. When either drunk or used as a bath, this water is rapidly absorbed, and favors, in the highest degree, the assimilative functions and regulates the secretions and excretions; it enters into the circulation and changes the consistency, as well as the composition, of the blood. Entering as it does the most minute capillaries, the medicinal ingredients reach the most remote structures. It relieves chronic disordered conditions of the vascular and muscular systems, giving to them an elasticity and tone not witnessed in the administration of ordinary remedies.

Anæmia, amenorrhœa, and allied conditions are cured by drinking freely of this water, taking daily out-door exercise. The appetite is increased by these measures, while mountain climbing or horseback riding increases the lung capacity; and in a short time the patient will be well and strong again. Malarial cachexia, chronic gastric, or intestinal catarrh are also greatly benefited or cured by a stay in the mountains, which assist this water in its curative power.

Neurasthenia, neuralgia, hysteria, depression from overwork, or disease and other functional neuroses do well here. The plunge bath exerts a wonderfully quieting influence on the nervous system. It causes the action of the heart to become full and strong, but the tension is not great, respiration is accelerated, and the temperature is slightly elevated; soon a feeling of rest and contentment follows, and the nervous, afflicted with insomnia, take a nap to awake renewed in mind and body. By taking systematic exercise, and following the directions regarding the use of the water, the debilitated and anæmic nervous system soon responds to this pleasant mode of treatment, and a cure is effected. This water is a decided diuretic and mildly cathartic, and patients suffering from incipient kidney troubles or malaria in any of its forms are always benefited here. The high altitude tends to eradicate malaria from the system, while the water exerts a remarkably beneficial action.

In conclusion, I will mention that cholera in-

fantum, which, while not being affected by the water, is quickly cured by a change from a low country to a high altitude. The little sufferer from being an emaciated corpse-like being, is quickly transformed into a healthy, rosy-cheeked infant, by breathing the pure mountain air and sleeping sweetly during the cool nights.

Correspondence.

ROUTE AND RATES TO ST. PAUL, MINN., FOR AMERICAN ACADEMY OF MEDICINE, AMERICAN MEDICAL ASSOCIATION, ETC.

Editor Va. Med. Semi-Monthly, Richmond, Va. :

Dear Sir,—Will you please notify the doctors that the following Annual Conventions, in which they are interested, will meet at *St. Paul, Minn.*, on the dates as shown:

Military Surgeons of the U. S., May 29th-31st; American Academy of Medicine, June 1st-3rd; American Medical Association, June 4th-7th.

Special rate of one fare and a third on the certificate plan has been arranged *via* the Chesapeake and Ohio Railway, under which plan attendants should purchase straight tickets to St. Paul, Minn., procuring certificates from Ticket Agents at time of purchase, which certificates, when signed by the Secretary, in accordance with the requirements, will entitle holders to return tickets at one-third rate. The straight rate to St. Paul, Minn., is as follows from cities stated:

Richmond	\$30 50
Norfolk	30 50
Petersburg	30 50
Charlottesville and Lynchburg.	28 50
Staunton, Buchanan and Clifton Forge.	28 25

SCHEDULE VIA C. & O. ROUTE, DAILY.

Leave Richmond, 2:45 P. M., 10:45 P. M.; arrive Cincinnati 8 A. M., 5 P. M.; leave Cincinnati (Big Four) 8:30 A. M., 8:30 P. M.; arrive Chicago 5:30 P. M., 7:15 A. M.; leave Chicago 6:30 P. M., 9 A. M.; arrive St. Paul 7:45 A. M., 10:15 P. M.

The time *via* C. & O. Route is the quickest—leaving Richmond 2:45 P. M., for example, on Monday, you will arrive at St. Paul Wednesday morning; or, leaving Richmond 10:45 P. M.,

for example, on Monday night, you will arrive at St. Paul Wednesday evening.

The comfort is the best; service superior, and the scenery entrancing, surpassing in variety, beauty, and grandeur anything to be seen east of the Rockies. Electric lighted, vestibuled trains, with Pullman sleeping cars and dining cars.

For Pullman reservations and other information apply to John D. Potts, A. G. P. A., C. & O. R'y, Richmond, Va.

It is proper to remind the doctors that according to the ruling of the Interstate Commerce Commission, "Certificates will be valid only when issued within three (3) days of the opening of the meeting, or during the first three days of meeting, and will not be honored unless properly countersigned by Secretary, and vised by Special Agent, and presented within three days after adjournment of meeting, Sundays excepted."

Respectfully,

JOHN D. POTTS,
A. G. P. A., C. & O. R'y,
Richmond, Va.

May 10, 1901.

Proceedings of Societies, Etc.

BALTIMORE MEDICAL AND SURGICAL ASSOCIATION.

Meeting held at the Hall of the Medical and Chirurgical Faculty, April 22, 1901, Dr. Chas. G. Hill, President, in the Chair; Dr. Eugene Lee Crutchfield, Secretary; Dr. A. J. Sauer, Stenographer.

Puerperal Sepsis.

Dr. L. M. Allen read a paper on this subject.

Dr. J. Whitridge Williams, in its discussion, said that he had studied thoroughly the history of these cases of want of asepsis in obstetrics. English and German obstetricians early showed the nature of sepsis, and the need of prevention. In Vienna the average mortality was 10 per cent. In one clinic showing 42 cases there was a death rate of 41. The following is said to be authentic: In Catholic hospitals, the priest was often seen preceded by his acolyte ringing his bell, tolling the demise of another patient. Semmelweis advocated the employment of chlorine water, but no attention was given to his views. He wrote largely on the matter, but to no avail.

Seeing the futility of his work, he acquainted the profession with the fact that if the German professors did not accord with him, he would place himself by letter in touch with the *pater familias* of all such cases, and urge the employment of chlorine water, to see that the hands of both the physician and midwife were cleansed. Strange as it may seem to relate, this man died of sepsis. His book treating on the subject could not be purchased for less than \$15, but so little was it appreciated that I secured one from a dealer for a few cents, at an old book store.

Tarnier reports his experiences, with large mortality. He noticed hair infection, and pleaded for the employment of potassium permanganate. Bacteriological contents of the vagina are due to autoinfection. I note thereby that there are many streptococci in the vagina. Dr. Michael found them in 155 cultures in his clinic. He found on sterilized specula and also on small tubes the streptococci, which he concluded were from the labia. Cultures from the labia, external and internal, proved the presence of organisms in 60 per cent. of all the women examined, and an additional 10 per cent. from the external genitalia. The fingers carry the sepsis.

As far as external palpation is concerned, cultivate it. In private practice, the condition of the cervix can be determined frequently by abdominal palpation, where vaginal investigation must be abandoned. There are cases, however, where we must resort to vaginal examination.

In cases of sepsis I like vaginal irrigation. I also use strychnia and whiskey. Also use douches of salt or boiled water, if there be much infection. As for the employment of bichloride, I do not use it; it is poisonous. Our records show that 40 women died where it was used in 1-4000 and 1-5000 douchings.

Curetting has caused more infection in women than anything else. Its tendency to break down the tissues is very noticeable. In France, where it is so common, no one knows the number of deaths from it.

Dr. J. E. Gibbons asked long can a patient be left by the doctor while labor is in progress, and how is the doctor to determine how long he may absent himself, if he does not make a vaginal examination?

Dr. W. B. Perry said that we are not all doing hospital work, having nurses, and so on, and in such absence we should insist on cleanliness to its utmost. As far as the serum treatment of these cases is concerned, I can report as follows:

Of three of my own cases (cultures positive) two died, one recovered. Dr. Braek had two to die out of four he treated. Dr. Beck, while treating a case of erysipelas, avoided an obstetric case, which, on fourth day, gave history of chill, temperature 105 degrees Fahr., culture positive. Salt injections were used, and no serum employed. In three days the temperature was normal, and there was a quick recovery.

Dr. Gustav Goldman: I wish to make three points. I have brought with me this evening several charts, which the evening's discussions allude to, especially the last case mentioned by my colleague. In the past five or six years of my private work I have noticed eclampsia and sepsis in my own neighborhood. In one case Dr. Brinton noticed a typical case, which was over a butcher shop, and if it is worthy of note I can state that four of my own cases, like this one, were over butcher shops. Dr. Brinton and I remarked on this fact recently.

Now, my query as to infection primarily. How are we to know if the uterus is clean unless we explore it? This, I argue, weakens the reliance Dr. Allen puts on abdominal palpation, if, as he states, it is to be practiced *in toto*. It is impossible for me to reach the fundus with my fingers alone. The theory of external infection by introduction, I am in hearty accord with, and I limit my views relating to the serum therapy until I hear the views or expressions of some other followers of that creed. I would like to know what the profession has accomplished with it. I believe that it is a good addition to our means of aiding these cases.

The three different forms of sepsis alluded to in Dr. Allen's paper are particularly noticeable in these charts which I clinically obtained at the Maryland General Hospital, and in other cases have had them repeated in private practice.

Dr. J. W. Williams: I like to employ stimulants in these cases. We had 200 cases, and a mortality of 33 per cent., in which serum was employed; then, again, we had a mortality of only 5 per cent. where it was used. Reports vary. In the different countries of Europe the clinical data are ranging from the most enthusiastic to the most disparaging regarding the serum treatment. Nearly all get well with simple stimulating treatment.

Dr. Allen, in closing, said he adhered to the advantages of abdominal palpation, and did not urge vaginal examinations. He could recognize by external methods all information necessary

regarding the progress of labor. He did not largely favor the serum therapy in these cases.

Dr. Percy Smith read a paper on **Veratrum Viride in Puerperal Eclampsia.**

Dr. E. L. Whitney read a paper on **Pathology of Puerperal Eclampsia.**

The President, Dr. Chas. G. Hill, asked for a joint discussion of both papers.

DISCUSSION.

Dr. C. Urban Smith said that the pathology of these cases is of vital importance. Examine the blood. Invariably the liver is affected, both in the mother and the baby, and there is hardly any toxine in the urine of the pregnant woman. I had two fatal cases in my practice where albumin was present. I think that acetone has little or nothing to do in these cases.

Dr. Brinton: At one time I heartily endorsed blood-letting in these cases, but now I eliminate it a great deal—in fact, almost entirely. The suddenness of these attacks is remarkable. I have always been impressed with it as especially noticeable. Despite our best efforts, "some will die," after all.

Dr. Allen: We have records of 15 cases treated with veratrum viride, all of which recovered, and of 16 treated without it, most all died. Some of these cases were handled by purgative treatment and salt solutions.

Dr. Percy Smith, in closing, said that a certain number of cases of puerperal eclampsia will die despite our acutest attention to them. I believe that the mortality is lower in the cases where veratrum is employed than where we have used venesection.

Dr. Whitney, in closing, referred to the suddenness of the attacks in these cases, and referred to a diet of milk and carbo-hydrates as a part of the treatment.

Analyses, Selections, Etc.

Spinal Analgesia in Twenty-four Operations—Conclusions.

Dr. Wm. Seaman Bainbridge, of New York city, Attending Surgeon to Randalls Island Hospital, reports (*Med. News*, May 4, 1901) twenty-four operations done during spinal analgesia, and then remarks:

The cases thus described have not been specially selected. Some have been decidedly unfavorable for any operative procedure, and in a

few the operation was at best a forlorn hope. By thus testing this method in all sorts of conditions, its proper position will be more quickly established.

No difficulty has been experienced in introducing the needle either in adults or in children. A few times the needle has been clogged by a small blood-clot while the instrument passed through the soft tissues, before entering the spinal canal; examples, Cases II., XI., XIV. A few experimenters, at such times, use the stylet, pushing into the intra-dural cavity whatever is in the needle. This is certainly to be condemned. The withdrawal of the instrument and a fresh introduction is the better plan.

The following conclusions are made from fifty cases, the above being included in that number:

1. Cocaine is far more satisfactory than eucain. The latter is less potent, more evanescent, the areas of analgesia are frequently "patchy," having the pain sense retained all around them and not being so complete below definite levels. The cocaine produces no more unpleasant after-effects than eucain, and is decidedly more reliable.

2. Analgesia to the level of the diaphragm can be depended upon in all cases where a moderate dose of a potent solution of cocaine has been introduced by lumbar puncture. In some the analgesia is sufficient for operation on the upper extremities; examples, Cases IX., XV., XXII., and XXIV.

3. Complete analgesia, including the eyes, mouth and throat, has occurred; example, Case IX. It does not entail more severe after-effects than when the lower extremities only are involved.

4. The preparation of the patient as for a general anesthetic diminishes all the unpleasant effects of cocaine and eucain, and often prevents them altogether.

5. By moderate doses of bromides before the injection the initial vomiting is frequently avoided and the liability of headache lessened.

6. In neurotic patients there are often hysterical symptoms directly following the completion of the injection, but, as a rule, in a few moments a calm follows and the patient lies perfectly still.

7. Initial nausea and vomiting often occur soon after the puncture, but last only for a moment or two, and usually do not recur during the operation. As consciousness, as well as the muscular power, is preserved, the danger of the introduction of the vomitus into the lungs is practically nil.

8. Analgesia lasts from thirty minutes to four hours.

9. Depression after the puncture is incon siderable. The use of ethyl chloride (Bengne) largely prevents pain when the needle is introduced.

10. The preparation of the patient, the use of nitroglycerin by hypodermatic injection, or the employment of coal-tar products with caffeine, control the headache, which is in many instances an after-effect of spinal puncture.

11. In a few cases there may be motor paraplegia or vertigo. Both are temporary. Example, Case XI.

12. Spinal puncture has not affected normal or diseased kidneys.

13. Usually the tactile power, muscular sense, and the ability to detect heat and cold are retained. The cautery at a dull red heat causes no pain, while hot water produces marked discomfort.

14. Usually the patient sleeps the first night.

15. There is often a temperature of a few degrees within eight or ten hours of the operation. Whether this is the direct result of the puncture or the effect of psychic disturbances is not determined. The circulation and respiration are not seriously embarrassed.

Eucain in Spinal Analgesia.

Dr. Jedlicka, of Prague (*Sbornik, klin.* Vol. II., No. 3), has tried cocainization of the spinal cord in seven cases, and has had unpleasant experiences with the drug. He therefore replaced it with *eucain* (alpha-eucain hydrochlorate). This he employed in 93 cases of laparotomies of various kinds, operations on the lower extremities, perineum and serotum, and in various gynecological operations, with very excellent results.

The injection was always carried out with technical precision, and there occurred after four minutes an analgesia beginning at the feet and proceeding up the body in segments. In seven to ten minutes it had reached the navel or even the breast. The extension of the analgesia does not depend upon the dose, but upon the diffusion of the eucain in the cerebro-spinal fluid. This can be favored by placing the patient in an appropriate position, employing a proper amount of the solution, and diminishing the pressure of fluid within the canal. It is, therefore, well to allow a little of the fluid to escape before making the injection; at least as much as the amount to be introduced should be allowed to run out.

The phenomena that occur after the injection

may be divided into three phases. The first is the stage of analgesia, which usually begins four minutes after the injection, and is heralded by formication and numbness of the lower extremities. In some cases paralytic symptoms appear also, such as a feeling of weight and heaviness in the legs; but very rarely is there complete paralysis. The heart action may be slowed or increased, but is otherwise, save in the aged, normal. In fact, this method of anæsthetization had better be avoided in old persons. Other symptoms noted were nausea and vomiting (only when the stomach was empty), paresis of the sphincter ani, dermatographism, and erection of the penis.

During the second stage the patient feels quite well and is in normal condition.

The third stage begins three to six hours after the injection, and is characterized by headache and increase of temperature. After three hours these symptoms cease; in exceptional cases they last until the next day. The author believes that they appear in consequence of reaction of the menbraneous envelopes of the cord. If the headache is very severe the patient can be relieved by lumbar puncture and the removal of a little cerebro-spinal fluid. The relief is absolute; and the headache can be prevented by letting a little of the fluid of the cord escape before making the injection. This procedure has some influence upon the rise in temperature also.

Experiments with the injection of indifferent fluids in dogs have proved that spinal analgesia cannot be effected with them, especially as no destructive action upon the cord must be caused.

The author recommends spinal analgesia, as effected at Maydl's Clinic, in the very heartiest manner. It is an excellent method, that entails no serious danger. It is of inestimable value in patients suffering from heart and lung disease, to whom ordinary narcosis would be extremely dangerous.—Abstract from *Die Therapie der Gegenwart*, Berlin, April, 1901.

Colchi-Sal in Obscure Gouty Manifestations.

Colchi-sal is dispensed 20 centigramme capsules, each containing 1-4 milligramme of pure crystallized colchicine dissolved in natural methyl salicylate from *betula lenta*. Everything in its action contributes to the drainage from the economy of those noxious agents whose abnormal accumulation and retention in the blood determine an attack of rheumatism or gout. According to Dr. Laborde, the savant member of the French Academy, colchi-sal should be given

as soon as gouty symptoms appear, as following: *First day*, 4 capsules at a quarter of an hour interval 4 times a day; *second day*, 3 capsules at like intervals 4 times a day; *third day*, 2 capsules at like intervals 4 times daily; *fourth day*, 1 capsule 4 times daily. Interrupt treatment 6 or 8 days, and if all symptoms have not subsided, recommence the same treatment.

Ecthol for Bed Sores.

Dr. Smithwick, of La Grange, N. C., reminds us (*Maryland Med. Jour.*, January, 1901.) that the best results, in the treatment of bed sores, follow—first, thoroughly wash the parts with warm normal salt solution; second, then bathe the parts with peroxide of hydrogen solution; third, dress the sores with pledgets of cotton or strips of gauze soaked in ecthol. This dressing is repeated once, twice or thrice daily, as the urgency of the case seems to demand.

Book Notices.

Manual of the Diseases of Children. By JOHN MADISON TAYLOR, A. M., M. D., Professor of Diseases of Children, Philadelphia Polyclinic, etc., and WILLIAM H. WELLS, M. D., Adjunct Professor of Obstetrics and Diseases of Infancy in Philadelphia Polyclinic, etc. *Second Edition, Thoroughly Revised and Enlarged, Illustrated.* Philadelphia: P. Blakiston's Son & Co. 1901. Cloth. 8vo. Pp. 859. Price, \$4.50.

So thoroughly revised is this edition that it is practically a new book. A great deal of personal observation and experience are the foundation stones on which it has been built up to its present great importance, and makes it a faithful guide to the family physician, whose opportunities for seeing cannot equal those of a clinical teacher in a large hospital centre. Not only do we find that many additions have been made, but the additions have been well brought up to date. The articles on infant feeding are new chapters, since advances of very great moment have been made, especially with reference to the home modification of milk. Descriptions of diseases and their diagnostic signs and symptoms are well detailed. The sections on treatment of the diseases are also well written from the practitioner's standpoint. Indeed, this is to be one of the books that serves as the doctor's helper in time of need. The index is appended.

Obstetric and Gynecologic Nursing. By EDWARD P. DAVIS, A. M., M. D., Professor of Obstetrics in the Jefferson Medical College, and in the Philadelphia Polyclinic, etc. *Illustrated.* Philadelphia and London: W. B. Saunders & Co. 1901. Cloth. 12mo. Pp. 402. \$1.75.

This volume, designed to instruct the obstetric and gynecologic nurse as to her various duties, does so in an easy and graphic manner. It has been well said that "obstetric nursing demands some knowledge of pregnancy, and of the signs of accidents and diseases which may occur during pregnancy. It also requires knowledge and experience in the care of the patient during the labor and her complete recovery, with the needs of her child. The obstetric nurse must also know how to help patient and doctor in the accidents and complications of labor, and has an important part to play in caring for mother and child in the diseases which occasionally attack them during the puerperal period. Gynecologic nursing requires special instruction and training, and a thorough knowledge and drill in asepsis and antisepsis." We have seen many books that undertake the design of this volume, but we know of no work that is equal to it for the purpose of imparting instruction to the pupil nurse. Indeed, for the young graduates in medicine, so much of the book is illustrated, and goes so thoroughly into details that he may profitably add it to his books for careful reading. A good index is appended.

Manual of Practical Hygiene. By CHARLES HARRINGTON, M. D., Assistant Professor of Hygiene in the Medical School of Harvard University. *Illustrated with Twelve Plates and One Hundred and Five Engravings.* Lea Brothers & Co., Philadelphia and New York. 1901. Cloth. 8vo. Pp. 730. Price, \$4.25, net.

This *Manual* is intended "for students, physicians, and medical officers." That it is up to date is shown by the fact that the text includes a statement of the experiences of Dr. Reed and others (published in January of this year), indicating that "mosquitoes are alone responsible for the spread" of yellow fever. The author keeps constantly in mind the information as to sanitation needed in military, naval, marine life, and where the health of corporations is involved. "Individual health is guarded in the sections on food, diet, air, soil, water, rest, sleep, recreation, exercise, clothing, housing, warmth, ventilation, etc." The section on sanitation of schools, etc., is one that we wish every person

officially connected with such institutions would carefully read, for the public sentiment would lead to much desired reforms in many places where school houses are now but little less than disease-breeding pens. Our notice of this book must necessarily be brief, and we have space only to adopt the language of the announcement of the *Manual*—"In a word, the volume is complete, authoritative, practical, and modern."

Pulmonary Consumption, Pneumonia and Allied Diseases of the Lungs: Their Etiology, Pathology and Treatment. With a Chapter on Physical Diagnosis. By THOMAS J. MAYS, A. M., M. D., Professor of Diseases of the Chest in the Philadelphia Polyclinic; Visiting Physician to Rush Hospital for Consumption, etc. *Illustrated.* New York: E. B. Treat & Co. 1901. Cloth. 8vo. Pp. 539. Price, \$3.

This book illustrates the pendulum swinging of views back toward old-time teachings in regard to the etiology of consumption, etc. The fundamental concepts of the work are: (1) "That pulmonary phthisis, in the large majority of cases, is primarily a neurosis, and the pulmonary disintegration is secondary; (2) that any agent, influence, or condition which undermines the integrity of the nervous system will engender pulmonary phthisis, or some other form of pulmonary disorder." Yet notwithstanding the vitiated nervous system, "the degree of constitutional or nervous depression is immaterial so long as the bodily soil is not impregnated by the tubercle bacillus." The author recognizes "that the tubercle bacillus is present in pulmonary consumption, and plays a causative factor in its propagation." The author claims that "the only remedies of value in the treatment of pulmonary phthisis are those which appeal to, and act through, the nervous system; that of special value in the treatment of phthisis is the counter-irritant action of silver nitrate (4 or 5 minims of a two to five per cent. solution), introduced hypodermically over the vagi in the neck." Three chapters are given to therapeutics of consumptives, in one of which full details are given as to the use of the silver nitrate hypodermically. Of course adjuvants are prescribed, such as strychnia, etc. We confess to the reading of this book with far more than ordinary interest, for the author's reports of results would indicate that he sustains his theory in the results obtained by his plan of treatment.

The Feeding of Infants—Home Guide for Modifying Milk. By JOSEPH E. WINTERS, M. D., Professor of Diseases of Children, Cornell University Medical

College. New York: E. P. Dutton. 1901. Cloth. 12mo. Pp. 48—viii. Price, 50 cents.

This is a neatly issued little book of large print that can be read in less than an hour. The author states that of children born healthy and exclusively breast fed, very few die during the first year of life, whereas of children artificially fed in institutions, etc., very few survive the first year. He claims that Dr. Arthur V. Meigs' discovery in 1882 of the accurate composition of woman's milk "will be the means of saving more lives than any other discovery made by medical science during the nineteenth century." "Human milk contains 1 per cent. of casein, or proteid"—the terms casein, albumin and proteid being synonymous terms. Cow's milk contains 4 per cent. of proteid. Cow's milk so diluted as to contain 1 per cent. of proteid becomes deficient in fat and milk sugar. Details as to how to treat cow's milk are given. It is a useful book for the doctor and the nursery, where artificial food has to be used.

Text-Book of Diseases of the Nose and Throat. By D. BRADEN KYLE, M. D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia, etc. With 175 Illustrations, 23 of them in Colors. Second Edition. Philadelphia: W. B. Saunders & Co. 1900. Cloth. 8vo. Pp. 646. Price, \$4 net.

This second edition is mostly a revision of the first simply as concerns the correction of a few typographical errors and changes of a few expressions found in the first edition. So that those who have the first edition need not lay that aside for the new. The fact is that the first edition was so rapidly exhausted that it left nothing of material importance that was not in the first edition to be incorporated in the second. This speaks much more in favor of the work than paragraphs of praise. This popularity of this Text-Book is evidently due to its clear, practical tone, helped greatly by the profession of well-drawn and well-printed illustrations. The etiology, pathology, symptoms and signs and treatment—both medical and surgical—are all plainly and well described. Instead of filling the book with the details of individual cases, tables are summarized, and the essential truths of them all are distinctly brought out. It is a good text-book for the college student, and it is no less valuable to the general practitioner who has to do nose and throat work because of the absence of the specialist in such work. One of the best indexes we have even seen is appended.

System of Practical Therapeutics. Edited by HOBART EMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Second Edition, Revised and Largely Rewritten. VOL. II. With Illustrations. Lea Brothers & Co., Philadelphia and New York. 1901. Royal 8vo. Pages, 926. Cloth, \$5, net per Volume; Leather, \$6 net; Half Morocco, \$7 net.

Little needs to be added to our favorable notice of Volume I. in a recent issue of this journal. The practical ideas and value of the work are evidenced on every page of Volume II. This Volume is taken up with the treatment—preventive and curative—of specific fevers, such as typhoid, yellow, malarial fevers, the eruptive fevers, etc.; diseases of the respiratory and circulatory systems, such as tonsillitis, influenza, acute articular rheumatism, diphtheria, spasmodic croup, rickets, mumps, pneumonia, asthma, bronchitis, and whooping cough, organic heart disease, disease of blood vessels, nervous diseases of the heart, diseases of digestive system and kidneys, nervous diseases and diseases of the skin. Twenty-five authors, well selected as to their ability and fitness for the task, are the contributors to this volume. The practical characters of the *system* makes them exactly the books to which the general practitioner would naturally resort when seeking aid as to the management of an intricate case. Such a work will of necessity be of value in the library of every doctor, and almost daily serviceable as a work of reference in the treatment of disease. An index is appended to each volume to assist one in readily turning to the item desired.

Treatment of Fractures. By CHARLES LOCKE SCUDDER, M. D., Surgeon to Massachusetts General Hospital, Out-Patient Department; Assistant in Chemical and Operative Surgery in the Harvard University Medical School, etc. Assisted by FREDERIC J. COTTON, M. D. Second Edition, Revised and Enlarged. With 611 Illustrations. Philadelphia and London: W. B. Saunders & Co. 1901. 8vo. Pages, 457. Polished Buckram. \$4.50 net.

In less than a year, the first edition was exhausted, and call for this second edition was made, enabling the author to introduce a series of clinical cases to make plainer the chapter upon fracture of the skull. Emphasis is laid upon the use of plaster-of-Paris in the treatment of almost every fracture. New illustrations enhance the practical value of the book—intended, as it is, to be a guide for the practitioner and student in the treatment of fracture of the bones. In short, it is a practical statement of the gen-

erally recognized methods of dealing with fractures. Methods of treatment are described in minute detail, and the doctor is really shown in the numerous illustrations—many of them being reproductions of X-ray pictures—how to apply apparatus, etc. It is now about the most practical and useful work on the treatment of fractures that has ever been issued. After four pages of bibliography, an index that seems to be perfect, has been appended. It should be specially mentioned that the elaborate and complete series of illustrations constitutes a conspicuous feature of the book. Nearly all of the illustrations are from new and original drawings, and are reproduced in the highest style of art. The publishers have done their part most liberally.

Editorial.

Defective Eyes in School Children of Richmond, Va.

Dr. Alfred C. Palmer, of his city, who limits his practice to the diseases of the eyes, ear, nose and throat, has made his report to the Public School Board of the city of Richmond of the results of his examinations of the eyes of the public school children of this city.

There are eleven public schools in Richmond for white pupils, and seven for colored pupils. Of these, the Richmond High School (for whites), the Colored Normal (or high) School, and Madison (grammar) School for whites failed to report. These three schools represent probably 1,000 or 1,100 pupils.

The total number of *white pupils* examined was 2,015; the total number of *colored pupils* examined was 1,146—grand total, 3,161.

Of these, the number of *white pupils* found with normal eyes was 1,334; with *defective eyes*, 681—total whites, 2,015. Of the 1,146 *colored pupils* examined, 885 had *normal eyes*, and 371 had *defective eyes*.

Proportion of *white children's eyes* found defective, 33 1-3 per cent. Proportion of *colored children's eyes* found defective, 22 per cent.

While these figures may not be absolutely correct, as explained by Dr. Palmer in his report, they may be relied on as being so nearly correct as not to materially affect the proportions.

This report is interesting as confirmatory of the general belief that defective eyes occur much more frequently in the white race than in the

negro. It would have been more interesting if the proportion of defective eyes had been estimated in the mulatto as compared with the full-blooded negro.

We regret that the report does not undertake any statistics or discussion of the causes of defective sight among school children. The Public School Board could not have entrusted such work into better hands than in those of Dr. Palmer.

Medical Laboratories of the University of Pennsylvania.

The University of Pennsylvania is about to erect, at a cost of more than \$500,000, exclusive of grounds and equipments, a Medical Laboratory Building, which will be unexcelled in every respect by anything of the kind in Europe or America. Beside lecture and demonstration rooms, and spacious rooms for surgical, comparative, and neuro-pathology, and for pathological histology, there are to be rooms for experimental work, and for research in the lines of physiology, pathology and pharmacodynamics. Such laboratories, first established in Germany then in France, and now in all civilized and enlightened countries, have added a great wealth of facts to our knowledge of the structure and functions of the body, as well as having provided methods of preventing and combating disease that have already robbed many of the most direful of their chief terrors. When it is recalled how definite now is much of the knowledge of the laws of health, and to what extent the discovery of the uses and functions of the various organs, the precise nature of their possible lesions and derangements, and the definite action of remedial agents have undoubtedly contributed to the relief of suffering and the prolongation of life, and how, in a few years, we have been taught that harmful micro-organizations—the so-called germs—are the causes of many diseases, and by what means their ravages may be combated, the most enthusiastic forecasts for the future discoveries in medicine may well fall short of actual achievements. Hence this undertaking of the University of Pennsylvania for the Medical Department—the oldest in this country—must commend itself to all educators, to students, and to all who have at heart the material advancement of the human race.

Dr. M. D. Hoge, Richmond, Va.,

Immediately after the end of the session of the University College of Medicine, Richmond,

Va., resigned his chair as Professor of Histology, Pathology, Bacteriology and Urinology in that institution. He has been a most valued teacher in his department, and leaves the Faculty with the best wishes of each of its members. He has been Professor in the same chair since the organization of the University College in 1893.

Dr. H. Stuart MacLean, Professor of Physiology in the same College, has been elected to succeed Dr. Hoge as Professor of the chair. Whereupon Dr. MacLean resigned the chair of Physiology, leaving a vacancy which will be filled in a few days.

Medical Meetings at St. Paul, Minn.

The occasion of the meeting of the American Medical Association at St. Paul, Minn., June 4th-7th, 1901, will cause a number of medical meetings in that city during the last week in May and the first week in June. One of the great social attractions will be the railroad excursion through Yellowstone Park during the few days immediately succeeding adjournment of the session of the Association.

During the last week in May the Association of Medical Officers of the United States Army and Navy will have a session. On June 1st and 3d the American Academy of Medicine will have meetings, with a very attractive programme of papers, etc. At 2:30 P. M., June 3d, the American Medical Editors' Association will hold its annual meeting, and conclude with the annual dinner at 9 P. M. Coincident with the first two days of the meeting of the American Medical Association—June 4th and 5th—the American Proctological Society will hold its third annual meeting at Hotel Aberdeen, with a list of papers on its programme by eminent specialists that will prove valuable contributions to proctologists.

Western Ophthalmologic and Oto-Laryngologic Association.

The following officers were elected at the sixth annual meeting held in Cincinnati April 11th and 12th: *President*, Dr. C. R. Holmes, Cincinnati, O.; *Vice-Presidents*, Drs. W. L. Dayton, Lincoln, Neb.; J. O. Stillson, Indianapolis, Ind.; and H. W. Loeb, St. Louis, Mo.; *Treasurer*, Dr. O. J. Stein, 100 State street, Chicago; *Secretary*, Dr. William L. Ballinger, 100 State street, Chicago. At the meeting in Cincinnati the scientific programme was of very high grade. Forty new members were elected. The next

meeting will be held in Chicago, April 10th, 11th, and 12th, 1902.

The Mississippi Valley Medical Association

Will meet September 12th, 13th, and 14th at Hotel Victory, Put-in-Bay Island, Lake Erie, Ohio, instead of on the dates previously announced. The dates have been changed so as not to conflict with another large Association meeting a week in advance at the same place. A railway round trip rate of one cent a mile for the round trip will be in effect for the meeting. Tickets will be on sale as late as September 12, 1901, good returning without extension until September 15th. By depositing tickets with the Joint Agent at Cleveland, Ohio, and paying 50 cents, the date can be extended until October 8th. This gives members an opportunity of visiting the Pan-American Exposition at Buffalo, N. Y., to which very low rates by rail and water will be in effect from Cleveland. Full information as to rates can be obtained from the Secretary of the Association, Dr. Henry E. Tuley, 111 West Kentucky street, Louisville, Ky. Members of the Profession are cordially invited to attend this meeting of the Association. Those desiring to read papers should notify the Secretary at an early date.

The American Dermatological Association

Will hold its 25th annual meeting at The Beach Hotel, Chicago, Ill., May 30, 31, and June 1, 1901. A full and very excellent programme has been issued for this occasion. Dr. Francis John Shepherd, of Montreal, Canada, is *President*; Dr. Douglas W. Montgomery, of San Francisco, Cal., *Vice-President*; Dr. Frank Hugh Montgomery, of Chicago, *Secretary and Treasurer*. The meeting will adjourn in time for members wishing to do so to reach St. Paul, Minn., in time for the opening of the American Medical Association.

Psycho-Physical Laboratory in Washington, D. C.

Great credit is due Mr. Arthur MacDonald, Specialist in the United States Bureau of Education at Washington, for his indefatigable work in the interests of science in trying to secure the establishment in Washington, in connection with the Department of the Interior, of a Psycho-Physical Laboratory. "A rigid and patient study of man must be based primarily upon the individual, who is the unit in society." Trustworthy knowledge can come only from the

study of large numbers of individuals. The best method of investigation is that of the laboratory with instruments of precision in connection with sociological and abnormal data. Such a laboratory is not in the least to be in competition with other psycho-physical laboratories. This Government can well afford to support such an institution for scientific purposes. We pay millions to catch, try and care for criminals, but give very little to study the causes that lead to crime.

Mr. MacDonald is endeavoring to have the leading Medical Associations, both State and National, pass this resolution: "*Resolved*, That we are in favor of the establishment of a Psycho-Physical Laboratory in the Department of the Interior at Washington for the practical application of physiological psychology to sociological and abnormal or pathological data, especially as found in institutions for the criminal pauper and defective classes and in hospitals, and also as may be observed in schools and other institutions."

We join with other journals in expressing the hope that the various State Societies will lend their influence to the movement for the establishment of such a psycho-physical laboratory for sociological purposes.

"The study of man, to be of most utility, must be directed—*first*, to the causes of crime, pauperism, alcoholism, and other forms of abnormality. To do this the individuals themselves must be studied. As the seeds of evil are usually sown in childhood and youth, it is here that all investigation should commence, for there is little hope of making the world better if we do not seek the causes of social evils at their beginnings."

Physical Diagnosis in Obstetrics, by Dr. Ayers.

In the April 26th issue of this journal, in commenting on the above mentioned book, recently issued by Messrs. E. B. Treat & Co., of New York, we stated that this book contained no index. This statement was incorrect, for following the general text matter is a blank sheet, after which there is an index of four pages, making a most useful addition to the volume. The oversight was due, we suppose, to pressure together of the cut edges of these pages in binding.

Typographical Corrections.

In Dr. Keister's article in the issue for May 10th, our attention has been called to three errors of type. On page 63, in the 28th line, from the bottom of second column, and again on page

64, in the 20th line from bottom of first column, occur the words, "constructed anus." The correction should be "*constricted anus*." In the 11th line from bottom of second column of page 64 the words should be "*pulse 108 per minute*."

Dr. Henry Alfred Robbins, Washington, D. C.

Has been elected to the Professorship of Dermatology and Syphilology in the Medical Department of Howard University, Washington, D. C.

Polk's Medical Register of the United States and Canada

Will be issued in the spring of 1902, or earlier, if practicable. The information will be obtained from original sources, and be brought down to date. This *Register* was first published in 1886. The issue now under way for 1902 is to be the *Seventh Edition*. Physicians who have moved since 1898 should notify the publishers (R. L. Polk & Co., Detroit, Mich.) promptly. Parties wishing a copy of the book when ready should at once fill an order blank, agreeing to pay \$6 on receipt of the *Register*, which gives post-office addresses, names of colleges, and dates of graduation, positions held in the profession, etc.

The Therapeutic Monthly

Is a new journal, begun in May, devoted solely to the important department of treatment of disease, published at 1716 Chestnut street, Philadelphia, Pa., of which Dr. James Tyson is Editor-in-chief, with the assistance of Drs. T. L. Coley and T. Mellor Tyson as Associate Editors. This is an able corps. Dr. James Tyson's eminence as the author of about the best text-book on *Practice of Medicine* in any language ought to assure the success of this new venture.

Obituary Record.

Dr. Whitcomb Eliphet Pratt,

Of Buckingham Courthouse, Va., died in Richmond, Va., May 16, 1901. He was born in Buckingham county in 1849. He enjoyed perhaps one of the largest country practices in the State, and was an exceedingly popular citizen. He was a member of the Medical Society of Virginia, and of his County Board of Health. His loss is felt as a calamity by a large circle of friends.

THE Virginia Medical Semi-Monthly.

(FORMERLY VIRGINIA MEDICAL MONTHLY.)

Vol. 6, No. 5.
Whole No. 125.

RICHMOND, VA., JUNE 21, 1901.

\$2.00 a Year.
10 Cents a Copy.

Original Communications.

THE LIMITATIONS OF SURGERY IN THE TREATMENT OF NERVOUS AND MENTAL DISEASES.*

By WILLIAM BROADDUS PRITCHARD, New York, N. Y.

What is the legitimate role of the surgeon in neurology and mental disease? What evidence is there, discarding for the moment the forensic province of undemonstrated theory, that any good thing in positive results has come out of this Nazareth? The subject is far-reaching, of radical importance, and of entrancing interest. I cannot hope to present it at all exhaustively. I was asked to read a practical clinical paper based upon personal observation and experience, and I believe that the accumulated results of more than twelve years in special work permit me the opportunity to fulfill the request with at least some degree of resultant interest. The subject, too, is one which seems appropriate to the occasion, since it unites with a common interest all of us.

Differences of opinion are often dependent upon the view point. The surgeon and the neurologist represent the two extremes in medicine, of daring—almost audacity—and conservatism. A military simile suggests itself: The surgeon of to-day is the outrider, the scout, the advance outpost; the neurologist holds the trenches. To you of the knife, there is daring and audacity as duty; to us, for the present, at least, that cautions conservatism born of unsolved problems. Understand me to be in no sense or degree underestimating the results attained along neurological and alienistic lines generally, but only as regards that particular sub-field under consideration. I acknowledge

second place to no specialty in medicine in the ratio of general advance during the past two decades.

Clothed as he is with the reassuring bullet-proof armor of asepsis, the surgeon of to-day has invaded almost every specialty in medicine, and almost every sub-field in the territory of nervous and mental disease. Within the past few months I listened to a paper by a surgeon before a New York Society descriptive of the technique and results in some thirty odd cases of varied major and minor surgical procedures in nervous and mental affections, in about ninety per cent. of which the writer, with an assurance which was sublime, stated that he had acted upon his own initiative and without any neurological guidance or advice whatever. I might add, with no little professional gratification, that the net results reported, even by the writer, added no laurels to his surgical fame.

Among organic nervous diseases, cerebral and spinal tumor, abscess, phlebitis, malformations, congenital and acquired, and all the sequences of trauma, are claimed by the surgeon with an assurance which resents with indignation any protest or criticism, and which we relinquish not so much because we confidently expect more, but for the entirely negative reason that we can, with assurance, promise less. Personally, I believe that, at least theoretically, we must look to surgery for all that is to be attained in curative results in the diseases mentioned. Much remains to be done, however, in the way of prompt and accurate diagnosis and perfection of technique before even in this field surgery proves less disappointing than other measures. I have seen and reported one case of brain tumor practically cured, two greatly and for many months relieved, two cases of sinus phlebitis cured, five of cerebral abscess cured, and several sequences of trauma cured or favorably modified through surgical interference, which cases otherwise would probably have ended fatally. In

* Read before the Richmond County (N. Y.) Medical Society, May 15, 1901; also read before the North Carolina State Medical Society during its forty-eighth annual meeting at Durham, N. C., May 23, 1901.

certain forms of peripheral neuritis, those due to mechanical causes, surgery is obviously and alone the means to the end of cure. In certain conditions of post-paralytic helplessness from contraction, as in the various talipes of poliomyelitis, the spastic deformities of hemiplegia and paraplegia, muscle transplantation, or other plastic procedures often greatly benefit through restoration of useful function. Many of these cases are greatly benefited by the mechanical devices of the orthopædist. I have seen a helpless, bed-ridden paraplegic enabled to walk about at will and earn a living by the aid of an ingeniously constructed orthopædic apparatus. All this we concede to our brothers with the knife, and still he is not satisfied, but with rapacious and omnivorous maw, like Oliver Twist, he asks for more.

It is in the sub-field of functional and so-called reflex nervous and mental affections that we dispute the invasion of surgery. Epilepsy, chorea, hysteria, the various sensory and motor neuroses, and the psychoses, are prominent examples in the contested territory. What has the surgeon done towards bettering the prognosis in epilepsy? I have yet to know personally of a single case cured by operative measures, and I have notes of 21 cases in which surgical relief has been attempted. Even in well defined focal epilepsy, dependent upon an isolated circumscribed lesion, the results of surgical aid have been grievously disappointing. The habit of having convulsions, which constitutes epilepsy, continues even after the primary cause has been removed. To me the very idea of relief by operative interference in non-reflex epilepsy is radically faulty, if, indeed, it be not an example of the *reductio ad absurdum*. We operate to remove a focus of irritation, a lesion. The trauma of operation induces of itself this very condition. The damage from the surgeon's knife equals always, and often exceeds, as an irritant, the original lesion. The only possible rational excuse for surgical interference in non-reflex epilepsy, it seems to me, must be negative. Since we cannot cure by any other means, no harm and some possible good may come from operation. Even in epilepsy apparently of unmistakable reflex etiology surgery has proven disappointing. Let me say here that I believe firmly that epilepsy as well as other neuroses may have origin in a reflex cause. Two instances occur to me graphically illustrative of such failure. Mrs. G., married, age 35, no

children, miscarriage at 28, attended with cervical laceration, and followed by cicatricial stenosis with dysmenorrhœa. For three years previous to observation each menstrual period had been ushered in with an epileptic seizure, at first of the petit, and later of the grand mal type. The attacks when I saw her were severe, and several occurred during the five days of the menstrual period. The stenosis, which was extreme, was assumed to be etiologically related to the attacks, which assumption was corroborated apparently by the induction of attacks upon two occasions by passing a Hank's bougie. Forceful rapid dilatation was done, a skilful gynecologist operating. The dysmenorrhœa was relieved permanently, and for two months the convulsions did not recur. At the next period they returned, and have, at last accounts, continued in equally severe form and at nearer and nearer intervals.

Case 2. D. S., male, age 40, German-Hebrew, travelling salesman; married, two children, aged 5 and 8, both healthy. Family history negative. Personal history, that of perfect good health up to the age of 11, when he was kicked on the middle of anterior right thigh by a horse. Immediate consequences not recalled, but within a few days he had forgotten all about it, and there was no local evidence whatever of injury. About six months later, on his way to school, he felt a cramp in right leg, which became first stiff (rigid), and then began to jerk. The jerking caused him to fall, but did not extend beyond the leg, and he did not lose consciousness. Within a few minutes he felt all right and went on to school with no after effects whatever. Following this first seizure he had several similar attacks occurring at night, and waking him up, but he did not have a true convulsion with unconsciousness until about four months later. This occurred in school, and was of the typical grand mal variety. For four years thereafter he was absolutely free from all attacks. While dancing in an over-heated ball-room, and after drinking three or four glasses of beer, he fell to the floor in another seizure. In this attack, as well as in the first and in all subsequent attacks, he noticed first pain in the leg at the site of the injury, with subjective numbness over the anterior and outer lower leg, followed by jerking of the right leg, a heavy, dead feeling in the right arm, tingling pain in the right face, then unconsciousness. Following these attacks he is drowsy, confused in mind, and the right leg is

weak, and often drags, and at times is powerless. Another attack occurred while skating, the skates being strapped on unusually tight. In 1880 he consulted Berger, of Breslau, who advised section of the nerve (anterior crural). This was done by Fischer, with the result that total paralysis for two weeks occurred. Patient had to use crutches for two years. During the following ten years the seizures were no less in number, though most of them were of the petit mal type. Coming to this country, he became a patient of Jacoby, who prescribed the triple bromides, with the result that for seven years patient was free from all attacks. When seen by me in '98 he was subject to frequent aures of pain in the thigh, numbness in the leg, vertiginous weakness, but could usually arrest further developments by getting up and walking or stamping the leg on the floor. Since 1890 he has had attacks as before, except when taking the bromides. In both these cases the reflex etiology seems indisputable, and in both it would appear from a priori reasoning that benefit, if not cure, was to have been logically expected from the procedures adopted. In both the result was wholly disappointing. I might add from experience to these too many others, but I doubt the advantage of so doing, since the result has not varied. And yet I believe that even here the surgeon has a legitimate field, and that if the neurologist be prompt enough in diagnosis, and the surgeon equally prompt in operating, the benefit would be proportionately greater. The primary cause of epilepsy, reflex, organic, or toxic, is of less importance in prognosis or treatment in a direct ratio with the duration of the disease. There can be no arbitrary time limit, but in an epilepsy of six or twelve months' standing the cause is relatively immaterial as affecting either prognosis or treatment.

In chorea the equation of value in estimating different remedial measures is somewhat obscured by the fact that the disease is in many instances self-limited. We are liable to construe as propter hoc what in reality has been post hoc only. Not all cases of chorea (I refer exclusively to non-organic choreas) are self-limited, however, and it should not be forgotten that the most striking characteristic of the disease history is a tendency to recur; nor should the fact be overlooked that while chorea per se may be a simple thing, it may involve collaterally and indirectly grave and disastrous conse-

quences to the victim. In idiopathic or simple chorea the treatment is almost statutory in its fixed exactness. In reflex chorea, which means all the way from less than 1 per cent. in the opinions of neurologists to 100 per cent. in the opinions of certain operating oculists, the routine of treatment is less arbitrary. I have records of 76 cases of chorea examined by competent oculists in which defects of vision due to muscular insufficiency and other causes was found, and glasses or other ophthalmological measures, including tenotomies recommended, and not one instance in which a cure could be legitimately claimed for either glasses or tenotomies. I do not mean to say that these measures were not of adjuvant value. On the contrary, I believe that occasionally they served a valuable purpose in removing a secondary cause. In one case of chorea a rhinological fiend confidently promised that the removal of a nasal polypus would cure the case. The patient may have been cured, but it took six weeks of treatment with Fowler's solution to remove the after effects of the operation. In another case a boy of nine was brought to my clinic with a most violent and intense chorea. He could not stand or talk or use his limbs at all. It was of fulminant onset. I found a redundant prepuce, inflamed and bulging with purulent secretion. Dr. Bodine operated for me quite successfully. There was no improvement for a week in the chorea, but within the next four or five weeks, under Fowler's solution of arsenic, the chorea disappeared. Possibly, and indeed probably, this result would not have been attained independently of the operation, which certainly removed an aggravating, if not a primary, cause.

Most of the sensory neuroses, the neuralgias, the ties, the pseudo-coxalgias and paresthesias, are due to blood states or dyscrasias—to toxemia quite often. Many of them are varieties of neuritis in different degree. Painful tic of the face is at times exceedingly intractable, resisting all ordinary and even extraordinary therapeutic resources. In such cases the surgeon is considered and consulted. Section of the nerve or the more radical operation upon the Gasserian ganglion is advised. With regard to the value of either of these operations, I confess to but little personal experience. So vehement has been my opposition on theoretical grounds to either procedure that I can recall but one instance in which in sheer desperation I gave a reluctant consent. The patient, Mr. H., age 61,

an army veteran, developed rheumatism, inflammatory, while serving in the Federal army. He suffered at the time from facial neuralgia. For twenty years thereafter at occasional intervals the neuralgia returned. In 1891 he had an unusually severe attack, during which the tic or spasm first developed. This attack lasted some two months, and during this time his only relief was from large doses of morphia. In '92 he had another six weeks' siege. In 1893 two attacks, section of the superior branch of the fifth was done, with the result that all branches developed a frenzied spasm and pain except the superior, which was paralyzed. He was continuously under the influence of morphia for four months, when suddenly all pain and spasm ceased, remaining absent for nearly a year. Following a cold or perhaps the grip, the pain and tic reappeared in the fall of 1894; the patient, who had become intensely suicidal, begged for any relief, regardless of the risk. Hartley's operation was decided upon. The patient survived. The pain still continues, and as a result of the operation certain mental changes subsequently developed, which have resulted in a state of practical dementia. I have within the past year succeeded in relieving two patients with painful tic in most aggravated form, both of whom seriously contemplated upon the advice of attending physicians radical surgical measures. In both cases complete relief, which continues to this day, was obtained by means of strychnia given hypodermically in heroic and progressive doses.

Spasmodic torticollis is another disputed field. So frequent have been the disappointments of the surgeon in obtaining beneficial results here as to leave it almost undisputed neurological territory. My personal experience includes three cases, in only one of which did benefit occur.

That reflex irritation may induce symptoms simulating grave disease, and that some good may sometimes come out of the Nazareth of surgery here, is illustrated in the following history:

H. K., age three years, of good family history and good personal health up to time of observation, began to grow fretful and peevish, slept badly, and was disinclined to walk or move at all. In bathing or clothing him it was noticed that he flinched whenever any movement of left leg was made, especially in flexion of the hip or knee. On examination the slightest manipulation of the left hip in extension or

flexion or from direct pressure induced violent pain with paroxysms of screaming. The prepuce was found redundant, inflamed and adherent. An operation for phimosis was done with immediate relief, and no subsequent recurrence during the three years which have since intervened.

In this day of materialism, affecting all alike, both surgeon and alienist find a kindred impulse in the desire to bring the affections of the mind down to a tangible materialistic basis. Especially is this the trend of alienistic investigation to-day. Much of the slow progress attained in the treatment of the insanities is believed to be due to the persistence of the traditional conception that insanity was from the gods, and was outside, therefore, of the sphere of man—medical help. Behind the jaundice was the cirrhotic liver, behind and explaining the dropsy was the nephritis, but behind the delusion of the unpardonable sin was what? Until recently we did not know at all. Until recently we did not appreciate the significance of cause and effect in mental disease that gall stones, for example, might be behind and explain a *melas chole*, black bile, or that toxins and ptomaines might induce disturbance of the psychic cell, or that reflex irritation from periphery might disturb mental equilibrium.

Mrs. A., aged 41, came under my care for a typical melancholia. She had numerous visceral delusions, among others the belief that her stomach was rotten, and that her intestines were full of holes. Obstinate constipation necessitated mechanical relief, with the result that some twenty hard scybalous masses were removed forcibly per rectum, the visceral delusions (?) disappearing almost simultaneously, and the patient subsequently making a good recovery.

J. S., male, aged 48, was seen by me in consultation with Dr. E. Y. Hill, of New York. The patient had melancholia of the stuporous type. He had the delusion of poisoned food, and had refused all food for several days. Examination revealed a most horrible condition of the mouth from decayed teeth and neglect of mouth hygiene. A visit to the dentist with aseptic washes resulted in the immediate disappearance of this particular delusion. This patient also, I believe, made later a good recovery.

Mr. C., male, age 37, referred to me by Dr. Dalton, of Winston, N. C., was affected with melancholia, all the cardinal symptoms being

present, gloomy and unreasonable depression, intense exaggerated introspection, paralyzed objective consciousness, insomnia, post cervical ache and tendency to suicide, etc. The patient complained of more or less constant tenderness, and sometimes pain over the right hypochondriac region. He also gave a history of two attacks acutely severe of what he had been told was bilious colic. Examination revealed suspicious, but somewhat indefinite, physical signs of an obstructed gall duct. I referred the case to Dr. Tuttle, of New York, who confirmed the local findings. An exploratory operation was done, revealing a gall duct almost completely occluded by stenosis, the cause, however, not being determinable from local conditions. There were no gall stones and no malignant disease. The melancholia cleared up within a few weeks thereafter, but within six months had returned, and, though less marked, it still persists.

Mr. DeW., age 35, was referred to me by Dr. Barringer, of New York. I found him affected with an hallucinatory insanity of the paranoid type. Among other hallucinations, all people upon whom he looked turned at once bright red. Every one who looked at him did so with design. Two people talking on the street as he passed were talking of him. He could not sleep, the disturbance from voices keeping him awake. He had no sexual power, — a firm belief — although never in his life had he even attempted sexual intercourse. Other symptoms directed attention to the genitals and examination showed a redundant prepuce with the entire glans penis studded with cheesy masses. So intense was the irritation that bleeding from the surface could be readily induced. Circumcision was done by Dr. Currier. It is now nearly two months since the operation, rather too soon for final conclusions, but so far there has been no change whatsoever for the better.

Just one case more and I am done. I had not purposely reserved this case as a dramatic climax. It will, nevertheless, fittingly subserve that end.

Mrs. C., age 29, native of Tennessee, married and a divorcee. Of robust, vigorous physique, a superb type of the feminine human animal. When seen by me she presented all the conditions characteristic of an exaggerated nymphomania. She lay in bed, the nurse and the attending physician, as well as the writer, being in the room, in an erethistic ecstasy masturbat-

ing continuously, except when physically restrained. This had been her condition for several weeks. The antecedent history was as follows: She had married a degenerate five years previously, from whom she had obtained a divorce a year or two later. Soon after she developed symptoms of hysteromania, with sexual delusions. A gynaecologist in her native city removed the ovaries. She improved, but subsequently suffered a relapse. Consulted another gynaecologist, and lost her uterus. Again she improved, but again the original trouble recurred, even worse than before. A third gynaecologist was consulted, who did a Baker-Brown excision of the clitoris; exactly the same result followed, and for the fourth time she was operated upon. This last operation, done by one of the most eminent gynaecologists in New York, consisted in the removal of the stump of the cervix left from the former hysterectomy. Six months later I saw her. I did not hear from the patient after consultation until two years later, when, upon answering an appointment to commit to a private asylum an insane patient, I found, to my surprise, my patient of two years before. She was duly committed; again recovered, this time without the knife, and has since married, and thanks to this last therapeutic procedure, has remained well ever since.

Briefly summarized, my personal observation and experience (I have studiously and with design avoided collaborated statistics and references to literature), leads me to the following conclusions: In abscess of the brain and sinus phlebitis and in traumatic hemorrhage surgical procedure is not only legitimate, but is imperatively demanded, and affords the only rational hope of cure.

In tumors of the brain and in imbecility due to cranial deformity, as in microcephalous, surgery has a legitimate field, and while the results attained have not been particularly gratifying, no other remedial measures have resulted in any benefit whatever.

Paralytic deformities, talipes, and contractions can be successfully treated by surgical procedure alone. Loss of function may be often completely relieved and useful action restored by muscle transplantation or section. Compression myelitis from trauma or other cause demands surgical treatment. Laminectomy is a legitimate procedure, as demonstrated in the results attained by Dawbarn, Lloyd, McBurney, Thorburn, and others.

In the treatment of the neuroses, intrinsic or reflex, surgery is never a factor of any assured value. It may in exceptional instances prove a valuable adjuvant, but should never be relied upon alone with any assurance whatever. In non-reflex epilepsy the only possible excuse for surgical interference is that the patient cannot be made worse by anything. In reflex epilepsy, and in other neuroses due to or aggravated by any ascertained reflex cause, surgical removal of such reflex cause is legitimate, but that surgeon is wise who promises nothing. Among sensory and motor neuroses surgery in the majority of instances seems a desperate experiment at best, and often a crime. The domain of the surgeon in the treatment of the psychoses I believe to be as yet shrouded in uncertainty. Cautious, discriminating experimentation should constitute the guiding and dominant influence. The ratio of failures to success as measured by the records to date is as ten to one, and yet I believe that the future, through added knowledge, chiefly neurological, will show a legitimate and an extensive field for the surgeon here.

105 W. 73d street.

SUDDEN DEATH SIX AND ONE-HALF DAYS AFTER GASTRO-ENTEROSTOMY.*

By I. S. STONE, M. D., Washington, D. C.

Professor Clinical Gynecology University of Georgetown; Surgeon to Columbia Hospital for Women, Etc.

Mr. B., white, age 45, presented himself at my office on December 1, 1900, and gave the following history: He had lost a mother and sister of carcinoma. He had been treated during the summer months of 1900 for gastric catarrh, and had improved. He had so-called "indigestion" and discomfort after eating, but had never vomited blood, nor had he suffered from extreme nausea or pain after eating. He claimed that he had accidentally discovered a tumor in the region of his stomach, which was movable, and did not seem very sensitive to the touch. The patient appeared to be in excellent condition; had lost little, if any, flesh, and had healthy thoracic and abdominal organs, save the one mentioned. His visit to my office was solely to

engage me to remove the growth in his stomach, and he promptly acted upon my suggestion to enter a hospital at once. The growth was easily found in the epigastrium, just above the umbilicus, appeared about the size of a small orange, and could be moved easily in every direction, except downwards. It was my opinion that the growth was malignant, and that it involved either the stomach or transverse colon.

This opinion was well founded, as he had symptoms of progressive stenosis somewhere in the alimentary tract.

The patient entered Sibley Hospital on Sunday, December 2, 1900, and submitted to operation the following day. With the assistance of Dr. D. G. Lewis, I first opened the abdomen in the region of the gall bladder, hoping to find the growth due to obstruction of the cystic duct. The diagnosis of cancer was positively confirmed as soon as the stomach could be inspected. The growth appeared to occupy the lower end of the stomach, and included the pylorus, presenting what may be called a most favorable case for excision, or even a complete extirpation (gastrectomy). Our conclusion was, not to attempt gastrectomy, because of the very great risk, and for the additional reason that due preparation for such a formidable operation had not been made. But we decided to do a gastro-enterostomy, believing that if a suitable opening were established between the stomach and bowel we could with reason hope at some later date to successfully remove the malignant growth.

The stomach appeared to be large, and to have undergone perceptible dilation, and we believed a gastro-enterostomy would add to his comfort and prolong his life. A second incision was made in the median line four inches in length, through which the operation was completed. A loop of bowel was selected at a convenient distance below the stomach, giving sufficient latitude of motion to prevent excessive traction, and this was united by means of a "Murphy button" to the anterior surface of the free and healthy portion of the stomach. A portion of the omentum was drawn over the field of operation to give greater security and to prevent adhesion of either stomach or bowel to the under surface of the wound. The patient had but little shock. He required no anodynes, and save a certain amount of nausea, presented no unwelcome or untoward symptom whatever until thirty minutes before his death on the 9th of December, six and one-half days after operation (the ope-

*Read before the Medical Society of the District of Columbia, January 30, 1901.

ration on Monday, December 3d, at noon); death occurred at 3 A. M., Sunday, December 9th. The patient was apparently doing well on Saturday when visited by the writer. He was in good spirits, and expressed himself as comfortable and quite happy. There was not the slightest reason to suspect peritonitis or any untoward result due to the operation. His temperature and pulse were both normal after the second day.

Autopsy nine hours after death; rigor mortis well established. The central wound reopened and enlarged, which showed the omentum and the viscera exactly as placed. When the omentum was removed from over the field of operation a small amount of greenish purulent discharge escaped at the junction of the stomach and jejunum. We were unable to say that this foreshadowed a failure of the union between the surfaces united by the button. As the omentum was torn away, it displaced all the lymph from the point of contact, and showed a greenish or gangrenous area, a result of pressure of the button upon the surfaces included within its grasp. As may be seen by careful examination of the specimen, there was but little, if any, peritonitis, and the patient did not die from that cause. The entire stomach, with adjoining intestine, was removed, and is herewith presented for your inspection.

The symptoms manifested by the patient did not point to either the chest or the heart. The latter was examined without finding evidence of organic disease, and was contracted and empty, with the exception of a small clot in the right ventricle. Its valves were of normal appearance, and moreover, his pulse was strong and regular, although somewhat accelerated (112) just before death. The patient was seen at 2 o'clock, and the nurse recorded his temperature normal, and pulse 80. In thirty minutes after this he complained of nausea, and vomited a small quantity of fluid. He either turned over or was turned over in bed at this time, which caused "discomfort," and he was unconscious for a short time, but regained consciousness before death.

The autopsy revealed no apparent cause for death. All of the thoracic and abdominal organs were normal. Although we were not allowed to examine the brain, in the absence of any other cause we suspect a sudden hemorrhage, or possibly an embolism, as the immediate cause of death.

We had no great difficulty in feeding the patient after the operation. He was nauseated for several hours after he recovered from the anæsthetic (ether), but did not vomit. The first nourishment was given by the rectum on the second day. This was discontinued however, as he insisted that it caused nausea. Peptonized milk was administered by mouth on December 5th, with good results, the patient taking one ounce every hour for several hours, after which time the amount was increased to 3 ij. The peptonized milk was then changed to buttermilk, which was relished and greatly enjoyed. His bowels appeared to respond easily to enemas, and he passed gas at will, never having the least discomfort from distension.

1449 Rhode Island Ave., N. W.

THE EARLY OPERATION FOR APPENDICITIS FROM A PATHOLOGICAL STANDPOINT.*

By J. G. CARPENTER, M. D., Stanford, Ky.,
Surgeon to the Joseph Price Infirmary.

The 99 per cent. recovery sure, by surgical treatment of appendicitis—Fifty per cent. failure by medical treatment—Catarrhal appendicitis relieved, but not cured by medical treatment—Sixteen cases in 400, or 1 in 25, may recover by medical treatment, the rest relapse."

Appendicitis, with or without cœcitis, catarrhal "per se," catarrhal with perforation, catarrhal with perforations and encapsulated in abscess, catarrhal appendicitis with perforation and peri-peritonitis and no encapsulated abscess wall. Appendicitis gangrenosa with or without encapsulation, with local or general peritonitis and fulminating appendicitis. Appendicitis obliterans, recurrent appendicitis, either catarrhal, perforative or gangrenous.

The inflammation may be confined to the mucosa "per se" and be acute, chronic, sub-acute, recurrent, and be an hypertrophic or mixed, both hypertrophic and atrophic, in different parts of the lumen of appendix. There may be involvement of the muscularis of the appendix with tension, infiltration, swelling and

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hypertrophy or hyperplasia. The peritonæum of the appendix may present its glistening, shiny appearance as in the catarrhal appendicitis, or change in color to opaque, gray, and show tension, heat, pain, redness, infiltration, swelling, or be roughened, adherent or attached to any organ in the abdominal cavity, right or left ovary and tube, bladder, uterus, sigmoid, liver, spleen, kidney, stomach, pancreas, arteries or veins attached to right ovary and tube, or combined, or ended in one large or multiple abscesses.

The appendical inflammation may be endo- or peri-appendicitis, "per se," or peri-appendicitis with peritonitis; the peritonitis local or general, benign or septic, with the characteristic inflammation of a serous membrane—viz., heat, redness, swelling, pain, tenderness, hyperemia, exudation of serum, diapedesis of the leucocytes, a plastic exudation of grayish color or of a serous effusion and nature, making barriers of grayish color to prevent further involvement of the serosa and localize the inflammation by plastic exudation and adhesions, or encapsulation of perforated or gangrenous appendix; should the inflammation not end in resolution, but continue, there will be necrobiosis of the mucosa, muscularis and serosa, with perforation and peri-appendicitis with or without gangrene and peritonitis and death unless checked and cured surgically. I say cured surgically. Appendicitis in any stage is a surgical disease, and can only be met promptly, checked, removed, and patient cured by, through and with surgery. The day of medical tinkering is over. About 95 out of every 100 M. D.'s tinker with appendicitis, like they use to do in *intra-pelvic diseases*, instead of sending them at once to the surgeon and have a prompt, safe, curative life-saving surgery done.

The doctors wait, dilly-dally, tinker, procrastinate, wait for peri-appendicitis with perforation and pus, or perforation and gangrene of appendix and septic peritonitis to occur, and as the case becomes desperate, they call surgical counsel.

First, because the patient has a *peritonæum on fire*, is dying, or will die; secondly, hoping the surgeon may cure in a dire extremity; third, to shield and protect the medical attendant and save the latter's reputation.

In the beginning the patient had a local disease. When the surgeon is called it is not appendicitis pure, but a foe a thousand—yea, ten thousand—times greater to cope with. It is a raging septic peritonitis that moves, rages and

travels with the fury, force and vehemence of a forest fire, and the surgeon too often has to say in sadness, Doctor, the golden surgical opportunity has passed; your message said appendicitis, but here we have that viscous monster, septic peritonitis; appendicitis "per se" is a local disease, easily and quickly cured by prompt surgery in skillful hands. The golden, happy medium is early diagnosis, early preparation of the patient, early operation. Operate while it is called to-day—to-day, not to-morrow—for too often in surgery to-morrow never, never comes; but rapid death to the patient does come, and professional disaster, chagrin and remorse of conscience must and should come to the medical attendant who does not offer his patient prompt, skillful surgery that is life saving.

Again, appendicitis is a local surgical disease. Peritonitis is a pathological apolyone. Learn, learn to have patients operated on with a diseased appendix—a local disease in a physiological peritonæum, a healthy peritonæum.

Mortality in this latter condition is about 1 per cent.

In Philadelphia patients often make their own diagnosis, come to the surgeon and ask and demand a surgical operation. The wide-awake, up-to-date general practitioners there examine the patient, make the diagnosis, send the patient to the surgeon, or promptly bring the surgeon to the patient. These Philadelphia practitioners say they are incompetent to treat the disease; that it is not a doctor, but a surgeon that is needed to treat this disease—appendicitis.

Though Dr. Wilson, Professor of Practice in the Jefferson Medical College, is visiting and consulting physician to the German Hospital, there is no medical ward in this hospital for appendicitis, for appendicitis is a surgical disease, and must be treated surgically by the surgeon, Dr. John B. Deaver, and cured, and not let die. Drs. M. and Joseph Price, when asked what surgical disease they feared most, was the most difficult to treat surgically, and demanded the most prompt, skillful surgical treatment, said, appendicitis, and that the medical attendant used to wait until perforation and abscess, peritonitis and gangrene had taken place, the patient practically dying when the surgeon was called; but since the physicians have been through the surgical revival and found out that appendicitis is a surgical disease, and given prompt surgery, they most all get well by early diagnosis, early

preparation and early operation in expert wise surgical hands.

Dr. J. B. Deaver confirmed what Drs. Price said, and reiterated that *appendicitis* is a *surgical disease*, and *needs the expert, wide-awake, safe, up-to-date, skillful, wise surgeon to treat the disease by operation; also said, appendicitis is a local surgical disease; too often in the past it was not the appendicular disease, but the angry, fierce, viscous, deadly peritonitis the surgeon had to encounter.*

Prof. Laplace, of the Medico-Chirurgical "College, Philadelphia," gave the same experience, and urged the *early diagnosis, early preparation*, and early operation to save the patient's life. About all get well when operated on early, at least one-third die when surgery is delayed and the *deadly peritonitis has to be treated.* The best place to operate is in a private infirmary by the surgeon, where only the best surgical treatment and nursing and dieting can be had. The nursing in general hospital too often is an abomination, and not ideal. The patient is left alone in a state of mental disquietude, deprivation and desolation, and so far as nursing is concerned, it is a failure, and the patient rolls, tosses, moves, tumbles and is let behave more like a maniac than a surgical patient that needs mental, bodily and surgical rest, comfort, solace and constant attention for days and nights.

Dr. Nicholas Senn said it is the dangerous, deadly delayed *appendicitis* with *peritonitis* that kills the patient and so difficult to treat by the wise and skilful surgeon; that the great danger to be feared in the operation of *appendicitis* is that every cross-roads doctor will be operating for *appendicitis*, and increase the mortality and bring an opprobrium upon surgery.

The time has come when the *surgical command halt* must be given and heeded by the general practitioner, the surgical tyros and tinkers, and fewer men do not only abdominal and pelvic, but all kinds of surgery. General surgeons should also serve an apprenticeship in abdominal and pelvic surgery before doing this major surgery.

The Lord makes the true surgeons; the medical schools the incompetent ones. There is a large paying specialty now open to the "A No. 1" physicians, and that is general practice; in the last fifteen years there have been made so many three and six weeks post-graduate pseudo-specialists that the supply of "A No. 1" general practitioners is almost exhausted. The general

practice of medicine, it seems, is becoming a lost art.

The twentieth century begins with few "A No. 1" general practitioners; and pseudo-specialists, tinkers, and tyros have increased *ad infinitum.* Fulminating *appendicitis* is sudden, rapid and furious in its course, may prove fatal in 24 or 48 hours, and be acute or recurrent or sub-acute, with perforation and abscess, or gangrene with peritonitis.

Surgical treatment, abdominal incision, treatment of stumps, irrigation, drainage, intravenous saline infusion.

Etiology—"La grippe," exanthemata, rheumatism, malaria, typhoid fever, foreign bodies, follicular abscess of appendix, traumatism and acute or chronic ovarian and tubal diseases of right pelvis, and cecitis are causes of *appendicitis.* Also twisted appendix or pressure, necrosis of appendix from adhesion and microbic infections, most important being tubercular bacillus, and the commune bacillus coli, and the streptococci. As a rule, the attending physician does not call the surgeon until the awful, viscous peritonitis has begun, then it is not the *appendicitis "per se,"* but the *latter, plus peritonitis;* the appendix having softened, disintegrated, the cæcal end plugged, encapsulated and healed, but the peritonitis raging like a wild forest fire, nature doing what the surgeon should have done early without complications and peritonitis.

Peritonitis from delayed operation *kills,* *kills* the patient; but the surgeon does not kill the patient by operation.

Retro-peritoneal abscesses, one or multiple, are too often of appendiceal origin. The writer out of about 140 microscopic examinations of *appendicitis* has never seen a healthy appendix. Drs. Price and Deaver say there are no healthy ones; that each possessor of an appendix has within himself an appendiceal cess-pool. The writer has seen the abdomen opened time and again for other intra-abdominal and pelvic pathological conditions, and the patients and attending physicians "said these patients had never had *appendicitis,*" but in each case when the appendix was examined microscopically the endo-appendix was diseased, or contained appendoliths of faeces, or partially obliterated, a partial *appendicitis obliterans,* or was sacculated, divided into pockets, and contained foreign matter, and ready for an explosion on the slightest provocation. Again, the appendix had become

convoluted, hypertrophied, even hyperplastic in its mucosa, muscularis and its peri-appendix, or serosa; either elongated or shortened in length, the mucosa presenting a simple catarrhal, granular, or ulcerative necrotic inflammation, or there was an hypertrophic or atrophic state of mucosa and the serosa "per se" might look healthy or congested or inflamed, roughened, with a former plastic exudate or adhesions, or completely buried in exudates and adhesions, or inflamed, softened, disintegrated, having undergone necrobiosis and amputation, with pus or sero-pus in the abdomen; or in this condition encapsulated in an abscess wall, or gangrenous in part or its entirety, and walled off, or not, according to the power of resistance and recuperative power of the peritonæum to localize the disease and prevent general peritonitis.

The writer has seen better diagnosticians and practitioners in the country than in the cities. Every case of appendicitis is a surgical disease, and should be treated by the surgeon.

The monkey knows when to drop the hot potato, and the medical attendant should learn and know the importance of turning an appendicial case over to the surgeon at once, for it is a surgical disease, and the medical attendant may be able to diagnose it clinically and symptomatically, but thoroughly incompetent to treat the case surgically. The surgeon diagnosticates symptomatically, clinically, macroscopically and pathologically and microscopically.

Surgical treatment abdominal incision, where? What operation? Exposure of the pathological conditions. Protection of healthy peritonæum and adjacent organs. Treatment of the appendicial stumps by excision from the cœcal wall. Irrigation. Drainage; central, unilateral, bilateral drainage through the lumbar regions, which? One or all in the same case? Surgical treatment of shock by intravenous saline 6-10 of one per cent. solution, or by hypodermoclysis and per rectum?

Appendicitis is a surgical disease. The time has come when the physician may, can, must and shall sit at the feet of the surgeon and learn all about appendicitis, and be damned, if he does not, and wear the mark of Cain; be abandoned by his brother surgeons and his patients. Sometimes an appendicial abscess may perforate into the bowel, vagina, bladder or externally, and patient recover: but great must be the resisting powers of the patient, and great are the dangers

to life of the patient and reputation of the medical attendant by procrastination.

When in doubt about operating for appendicitis, operate! When in doubt about irrigation, irrigate! When in doubt about drainage, drain! When in doubt about reopening the abdomen, reopen it! When in doubt about post operative irrigation or drainage, reirrigate and redrain.

These surgical rules will hold good as concerns most abdominal and pelvic cases. But it is best to do such good surgery in the abdomen so there will be no need for reopening, reirrigation and redrainage.

If the abscess has perforated and emptied into the lumen of bowel, vagina, bladder, or externally, and peritonæum protected, surgical measures sometimes will not be necessary, but at this state it is not appendicitis "per se;" but also perforation, leakage, peritonitis, plastic exudation, encapsulated abscess of the inflamed area, and perforation, drainage, and evacuation taking place through one or more of the above-mentioned routes, nature doing what *would have been prevented by early diagnosis, early preparation, and early operation by the surgeon.* There is present persistent vomiting, slim running pulse with collapse. It is *wrong for the medical attendant to let these complications and sequelæ of appendicitis arise, when he can prevent them by early diagnosis, early preparation, early, quick, skillful life-saving surgery in expert hands.* Let the motto be, help! help! Send for the surgeon, give the Macedonian cry loud, quick, strong, often, and the medical attendant and surgeon be like Damon and Pythias in their professional conduct, both working to save the patient's life, and for the honor and glory of each—defeat death and the undertaker.

Bad surgical condition of patient, feeble constitution, general peritonitis, advanced tuberculosis, Bright's disease, diabetes, malignant disease, and patient moribund, should deter the surgeon from operating, as a post-mortem is always preferable to an anti-mortem and a black eye to surgery.

The environments of the patient sometimes mean death, and it is best to move patient to the proper place—private hospital or infirmary—for operation, nursing and after treatment. In general hospitals the nursing is poor, neglectful, or cannot be had, and the after treatment too often given by incompetent amateur nurses and internes, who kill the patient.

The diagnosis may have been made early also, the preparation of patient and the operation performed with all the skill, pathologic lore, wisdom and technique of the best operator, and a dirty, incompetent medical attendant or nurse *kill the patient in giving the after treatment in the absence of the surgeon.*

For the benefit of some M. D.'s who have a great desire to suddenly become surgeons, will state, few abdominal and pelvic or general surgeons get rich or even make a living without general practice. Half or two-thirds of surgery does not pay a fee. Most private hospitals or infirmaries do not more than pay expenses. Most of the profession have no business capacity, and little executive ability, and collect their accounts with reckless neglect, legal limitation, and great fear patients will not employ them if they collect promptly and do surgery on the same methods.

Who should operate for appendicitis? Many incompetent medical attendants, tinkers and surgical tyros think they can split the belly, cut out the "tit," as they call it—yes, they would do this; so could the butcher you trade with; but he does not believe in playing "Jack the Ripper," even in cutting beef. Much less should incompetent men play "Jack the Ripper," do injury, violence and death to the patient, and bring an opprobrium upon surgery and the honest, skillful surgeon.

"It must be confessed that, according to our present views, appendicitis is a surgical rather than a medical affection, particularly from the standpoint of treatment. Knowing from personal experience and observation, however, that general physicians are constantly meeting with cases of appendicitis, its prompt clinical recognition by the latter is not only a matter of interest, but also of great practical importance for two reasons—*first*, in order that surgical intervention can be substituted at the proper moment; and *secondly*, because appendicitis is the leading serious disease of the intestinal tract."—Prof. Andres.

"The results of chronic appendicitis upon the general health and nutrition of the patient are quite noticeable, and tend to augment as time passes, if the attacks be frequent, or the intervals between them grow shorter. The chief symptoms are those of a nervous type; emaciation and debility are also observed. The associated nervous symptoms are those of neurasthenia. These patients often become introspec-

tive and exceedingly irritable, the mental condition being accounted for to a great extent by the consciousness that there is ever present the overhanging danger of a fresh attack with serious possibilities. In the severer forms of appendicitis 68 per cent. die before the eighth day. The general mortality of appendicitis is about 34 per cent. (Lutz). Prof. Anders states the improved methods, chiefly surgical, of dealing with appendicitis have, however, reduced its death rate."

"Whether imminent danger of perforation exists or not, the physician who is called to a case of appendicitis should at once request the services of a competent surgeon. Few surgeons subscribe to the doctrine that all cases demand operation; but since it may become necessary to perform celiotomy at any hour thereafter, the latter should help to settle the important question: 'When is it necessary to operate in the case?' The physician who does not pursue the course above recommended falls short of his duty, both toward the patient and toward the surgeon on whose skill he relies to remove safely the source of danger. With rare exceptions, prompt surgical intervention should be recommended. The indication for an immediate operation is undoubted in all cases of acute appendicitis, whether marked by sudden and severe or mild invasion symptoms, if seen at the beginning of an attack and free purgation at the earliest possible moment is not followed by decided relief."

When great and illustrious physicians, such as Prof. Wilson and Prof. Anders, of the Jefferson and "Medico-Chi.," with such enormous experience, speak so boldly for the surgical treatment of appendicitis, practitioners of less mental calibre and clinical and pathological experience must learn to read the surgical sign-board, give their patients the surgical route to health, and get into the surgical life-boats themselves to save their reputations and retain their clientele.

Dr. John B. Deaver states: In the treatment of appendicitis my observation has forced me to the conclusion that there is but one course to pursue in order to obtain the best possible results—viz., to remove the appendix as soon as the diagnosis has been made. The appendix should be removed so early in the attack that there will be no danger of septic absorption, purulent peritonitis, or perforation supervening, and in those cases of a fulminating character which have

been almost instantaneous in their progress from the initial symptoms to the inauguration of a purulent peritonitis from perforation or gangrene early operation is positively demanded. Sometimes it is impossible to institute early operative treatment for one of several reasons; the patient may not live within reach of a competent surgeon; he may not be willing to have this treatment carried out until it has become evident that his only chance of recovery is by operation, or there may be some serious underlying condition, as advanced Bright's disease, diabetes, tuberculosis, etc., which would forbid active measures. Under such circumstances expectant treatment is the only alternative. This embraces rest in bed, the judicious administration of laxatives, restricted diet, and the alleviation of pain.

I believe that the appendix should be removed as soon as the diagnosis has been established. I recognize the fact that a very small percentage of all cases will temporarily recover without the use of the knife, but no one can tell which case will terminate favorably or which will go on to perforation and gangrene, with the train of fatal complications that is liable to follow. The best result in all cases is obtained by removal of the appendix in the beginning of the attack. *Appendicitis is a surgical affection, and should be treated as such.* We cannot foretell, with even the slightest amount of assurance, the issue of any attack of appendicitis. *The main point to consider is, then, shall we risk the patient's life, or shall we accept the only alternative, and remove the organ in its incipient inflammation? In this affection early operation is a conservative, and not a radical procedure.* We are not governed by the same reasons that influence us to perform the radical operation for the cure of simple hernia or for the removal of the uterus for a fibroid. In appendicitis we have before us the probable consequences of suppuration, gangrene and perforation. The proportion of cases that have one attack, remaining perfectly well after subsidence, is so infinitely small compared to those that have repeated attacks with interval of invalidism, that I do not believe the rare exception should interfere with the rule—viz., that where practicable all cases of appendicitis should be operated upon as soon as the diagnosis has been established. Of course, I do not include cases in collapse.

Persistent vomiting, a leaky skin, a rapid pulse in the presence of a diffuse peritonitis, and

approaching collapse, in my judgment, forbid operation. If the patient has chronic appendicitis he should be confined to bed for from one to two days before the time set for operation.

Depending upon the location of the pus, appendiceal abscess is met with as one of four varieties: First, and most common in my experience, is the collection located post-cæcal, or between the layers of the ascending mesocolon; second, the collection is immediately beneath the anterior parietal peritonæum, being confined by the cæcum, coils of small intestine, the omentum, the appendix, the parietal peritonæum, and masses of lymph; third, the collection is located in the pelvis, which is usually entirely shut off from the general peritoneal cavity; fourth, pus is free in the general peritoneal cavity.

Infection of the general peritonæum, however, may be the result of lymphangitis, of gangrene, or of perforation of the appendix or cæcum. A mild form is met with in which the peritonæum is injected, turbid and sticky, but where there is neither effusion nor deposit of lymph. Prognosis good. Again, the serous surfaces may be found glued together, and a small quantity of a turbid effusion in the cavity. Prognosis good. If pus be present, one of two conditions will be encountered. In some the peritonæum will be bathed in a quantity of odorless pus, the serous surfaces will be smooth and shiny, and the coils of intestine not glued together. Prognosis fairly good. In others, the pus will be less in quantity, but of a foul odor; the serous surfaces will be intensely injected and of a scalded appearance, and large masses of lymph, in which the streptococci, or staphylococci, are always present. When such conditions exist the prognosis is unfavorable.

Inflammation or thrombosis of the right iliac vein, associated with edema of the corresponding lower extremity, is a complication sometimes seen, due to a localized appendiceal abscess. If a fragment of thrombus is carried into the general circulation, septic pneumonia or general septicæmia may be the result.

At times an appendiceal abscess will burrow upward behind the liver, either through or beneath the diaphragm, and finally rupture into the lung tissue. I have seen several cases where the abscess following appendicitis has been evacuated through the mouth.

In some cases abscess of the liver is produced by fragments of thrombi being swept into the portal or general circulation. The three cardi-

nal symptoms of acute appendicitis are—first, pain; second, tenderness; third, rigidity. Chronic appendicitis—history important. Palpitation most valuable means of diagnosis. Localized pain and tenderness most constant symptoms.

THE ARREST OF PROGRESSIVE HARDNESS OF HEARING, TINNITUS AURIUM AND EAR VERTIGO BY INCUDECTOMY.

By CHARLES H. BURNETT, A. M., M. D., Philadelphia, Pa.,
Aural Surgeon in the Presbyterian Hospital, etc., Philadelphia.

Progressive hardness of hearing, or chronic catarrhal deafness, as it is sometimes called, may be attended by two very distressing symptoms—viz., tinnitus aurium and ear vertigo, or Meniere's symptoms. Progressive hardness of hearing generally begins in one ear some months or even years before the other ear is attacked. It is usually preceded by tinnitus, though this symptom may not be observed until after the hearing begins to fail. Ear vertigo, or chronic tympanic vertigo, when it occurs, sets in as a late symptom of chronic catarrhal deafness of high degree.

With progressive hardness of hearing there may be chronic rhinopharyngitis and Eustachian salpingitis. By some these nasopharyngeal affections are considered causative, while others deem them resultant of the disease in the middle ear. I am inclined to the latter view because after the catarrhal symptoms in the nasopharynx are relieved, the aural phenomena continue to grow worse. This is due to the fact that the aural disease is a neurosis in the correlated muscular tissues of the nasopharynx, Eustachian tube, and middle ear, which not only renders them susceptible to catarrhal diseases, but induces in them a muscular unbalance operating disadvantageously upon the muscular and ossicular structures in the middle ear. The catarrhal symptoms are relievable by ordinary catarrhal treatment, but the muscular unbalance and its results when once established are not as favorably influenced by any treatment as by the surgical one described further on in this article. As has been stated, sooner or later the better ear manifests symptoms of progressive hardness of hearing. In most cases the implication of the second ear presents an example of "cross influence" of one organ upon its fellow on the op-

posite side of the body. Whether this "sympathetic" or synergetic influence of one organ upon its fellow is conveyed directly through the brain from one centre to another, or through the sympathetic or trophic nervous system, has not been determined. But no one doubts the existence of such a cross influence both for bad and for good between the two sides of the body.

The effects of the chronic neurosis in the middle ear are sclerosis of the mucous membrane, rigidity of the round window membrane, retraction and stiffening of the tensor tympani and of the ossicles of hearing, and a consequent impaction of the stapes in the oval window of the vestibule. This train of events in the drum

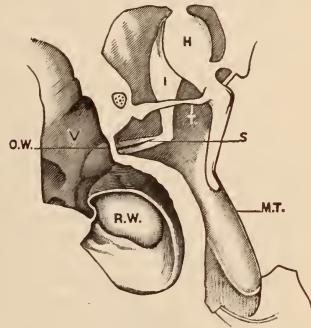


FIG. A.

Partly diagrammatic vertical section of the left auditory apparatus, in front of malleus and oval window, running through the vestibule, and viewed from front.

H., hammer. I., incus. S., stapes. M. T., membrana tympani. V., vestibule. O. W., oval window. R. W., round window. T., tendon of the tensor tympani.

cavity tends to tinnitus aurium, hardness of hearing, and finally to irritation in the labyrinth, and consequent ear vertigo or so-called Meniere's disease.

Mechanism of the Disease.—In order to understand the mechanism of progressive hardness of hearing, tinnitus, and ear vertigo one must recall the topographical anatomy of the middle and internal ears.

By consulting Fig. A, the reader may recall the parts of the middle and of the internal ears chiefly concerned in the phenomena of this disease. Contraction of the tensor tympani (T) induces retraction of the malleus, which, in turn, causes retraction of the incus (I), with consequent impaction of the stapes (S) in the oval window (O. W.). The inward pressure of the latter towards the vestibule (V) is followed by

compression of the labyrinth fluid filling all parts of the internal ear. In a normal ear this inward pressure of the stapes upon the labyrinth fluid is compensated by the outward bulging of the membrane of the round window (R. W) towards the tympanic cavity. But in an ear affected by chronic sclerotic processes, as in progressive deafness, the membrane of the round window is stiffened, and a compensatory yielding at this point to intralabyrinth pressure is either impaired or entirely abrogated. Such lesions in the middle and internal ears are followed by failure in hearing, tinnitus, and in some cases by ear vertigo.

If the membrana tympani of a patient affected with chronic catarrhal or progressive hardness of hearing be examined it will be found opaque, thickened and retracted. The retraction of the membrana may be so great as to draw the malleus upward and backward, towards the aditus. In most of such cases the incudo-stapedial joint can be seen through the upper posterior quadrant of the drum membrane. The examiner then sees in the retraction of the membrana and ossicles the mechanical cause of progressive hardness of hearing, tinnitus aurium, and ear vertigo. I have long known and taught that if this retractive force of the tensor tympani upon the entire chain of bonelets be broken by removal of the incus, tinnitus aurium and ear vertigo are permanently checked. I have also known that in some instances the accompanying deafness, if not very great, was lessened, and that in no case was the hearing made materially worse in the ear operated upon. Whether the operation could arrest the progress of hardness of hearing in the ear operated upon, and also whether it had any effect either as an arrester or as a prophylactic of progressive hardness of hearing in the fellow ear, not operated upon, could not be answered until some of the early cases of incudectomy had been observed for a long time. Between 1888 and the present time, 1901, I have operated upon 78 cases of progressive hardness of hearing by overcoming the retractive force of the tensor tympani, mostly by incudectomy. Four of these have been watched for from 10 to 13 years; others for shorter periods. From what has been observed in these cases I feel assured that incudectomy possesses an arrestive and prophylactic power in progressive hardness of hearing, as well as a curative power in tinnitus and ear vertigo.

Every physician should know that when pro-

gressive deafness sets in in one ear it sooner or later attacks the other ear; and it is also known that notwithstanding all forms of catarrhal treatment, and even lessening of the catarrhal symptoms in such a case, the hardness of hearing progresses more or less rapidly in both ears, the hearing falling to a very low degree, and in some instances even to zero in both ears. If by any safe means the surgeon can arrest the advance of such a disease in the ear, and prevent his patient from the ill fate of total deafness, such a means should be employed. The sooner the operation is performed in the affected ear, or in the more affected ear—say before the hearing for isolated words has fallen below two or three feet—the better the results. An arrest of hardness of hearing at any point by an operation is much better than permitting the hearing to fall to zero for the want of surgical aid. Even if the hearing in the ear operated upon should be lessened by the operation, but kept by it from falling to zero, the result, added to the prophylactic effect of the operation on the better or unaffected ear, would give the patient an equation of hearing in the two ears greater than he would ultimately have without the arrestive and prophylactic operation of incudectomy. It is worthy of note that the hearing in the ear not operated upon, if defective before the operation of incudectomy in the other ear, is improved by the operation in some instances, thus further exhibiting the beneficial synergetic, or “cross” influence extending from the ear operated upon to its fellow on the opposite side.

The Operation.—The patient is etherized (local anesthesia by cocaine being both inefficient and toxic, according to my experience), and the external auditory canal and the membrana sterilized by a solution of formalin (1 to 1000), or by alcohol. Then the auditory canal and membrana tympani are illuminated by means of an electric light held on the forehead and run by a small portable storage battery, made for the purpose of clinical illumination.

When the membrana is intact, as it is in a case of chronic catarrhal otitis media or progressive deafness, the initial incision is made with a delicate knife, beginning close behind the short process of the malleus, and following close behind the periphery backward and downward until reaching a point below the line drawn horizontally through the umbo of the membrana. This cut is followed by little or no bleeding as a rule. The flap thus made should be pushed

inward toward the promontory by means of a probe armed with a small dossil of sterilized cotton. If there be no bleeding, the incus-stapes joint is seen as soon as the flap of the membrana is pushed aside. If there be bleeding, it must be mopped away with sterilized mops on a cotton holder.

The incus being now in plain sight, it should be gently disarticulated from the stapes by drawing the former outward and downward by means of an incus hook knife passed behind its long limb. When this is done the long limb of the incus should be grasped by special forceps and drawn very cautiously downward and outward into the auditory canal and then removed entirely from the ear. When this is accomplished the operation is finished. The slight bleeding that sometimes occurs requires no attention. The meatus should be stopped with sterilized cotton, and the ear let alone for twenty-four or even forty-eight hours, unless the cotton in the meatus gets moist with blood. If this occur, the cotton should be removed and dry cotton inserted. There should be no after treatment in such cases, as all is accomplished when the incus is removed. As a rule, there is no reaction, and the wound in the membrana heals by first intention. Sometimes a slight reaction has occurred, shown by a little pain and some mucopurulent discharge. But this is healed in a few days by simply mopping the ear with sterilized cotton and a solution of formalin (1 to 1000). Such reaction has never had any bad effect upon the result of the removal of the incus in checking the symptoms in any of my cases.

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A CLINICAL RESUME OF TYPHOID FEVER.*

By GEORGE W. GAY, JR., M. D., Richmond, Va.

It may seem presumptive for so young a practitioner as myself to discuss a subject of such importance, and on which so much has been written, but typhoid fever is a disease which every practitioner, regardless of the length of time he has been practicing, or of the limit of his field of work, sees in his daily practice.

Its history dates back to the time of Hippocrates, B. C. 460. In more modern times it was

much discussed by Sydenham in the seventeenth century, and by John Huxam, who denominated it "slow nervous fever." In 1829 the brilliant French physician, Louis, did much toward discussing it from a scientific standpoint; but in America it was not until 1839 that C. W. Pennock and James Jackson, Jr., of Boston, differentiated it from typhus fever, and it was not until 1842 that it was described in text-books as a separate disease—an article on the subject appearing first in Elisha Bartlett's work, entitled, "*Diagnosis and Treatment of Typhoid and Typhus Fevers.*" Only since 1850 has typhoid fever been recognized as a distinct disease the world over. Elliott's *Practice of Medicine*, 1839, does not mention the disease by this name.

Cause.—In 1880 Eberth discovered the germ which causes this disease. It is now known as the bacillus of Eberth. It is a short rod-like bacterium, three micro-millimeters in length and one micro-millimeter in breadth, entering the system through the stomach in drinking water and milk. It may also enter by eating oysters whose bed has been near the entrance of sewerage, and by vegetables which have had polluted water sprinkled over them. It may also be infectious by means of dried discharges disseminated through the room. We all know that it is most frequent in the late summer and early autumn months.

It would be superfluous for me to discuss the *Morbid Anatomy*; only suffice it to say the main changes are in Peyer's patches, resulting in ulceration and sometimes perforation of the intestines at this point. Of course changes are also noted in the lymphatic glands, the most prominent being the spleen.

Symptoms.—There is a period of incubation ranging from a few days to as many weeks, in which the patient feels languid, tired and restless, and has bad digestion, anorexia, insomnia, and many other symptoms, the causes of which are hard to locate, and then, gentlemen, the text-books tell us the disease is ushered in by a mild fever, with evening exacerbations, but how many of us see the disease ushered in in this way in Richmond? They tell us that this fever runs a "step-ladder course," if you will excuse the expression, but how often do we see such a fever in this city. Without some more marked symptom of typhoid fever than the temperature record, it would be impossible to diagnose it. Instead of such a temperature record we more often see the disease ushered in by a high temperature,

* Read before the Church Hill Medical Society, Richmond, Va., June 18, 1891.

and not so very infrequently by a chill, and instead of the "step-ladder" temperature before mentioned, we see a fever running a more irregular course.

This leads up to the discussion as to whether there is such a disease as *typho-malarial fever*. I think there undoubtedly is such a disease. If there is not, what is that continued fever we see in Richmond, which runs no regular type, and in which the patient, instead of having the classical symptom of diarrhœa, is constipated? I know that some one in this assembly will face me with the proposition that it is a fever entirely malarial in origin. If any one makes this statement, I would like for him to tell me why it is the patient does not have remissions or intermissions, which are so marked in malarial fever, or why it is that quinine has no marked effect in this disease except simply as an antipyretic? Now, I do not pretend to say what the cause of this trouble is, unless it is the bacillus of Eberth and the plasmodium malarie acting on the body at one and the same time, or as one of my medical friends, who does not believe there is such a disease, once sarcastically remarked, "Probably the malarial germ catches hold of the typhoid germ by the coat tail and thus holds it back."

But let us return to the symptoms of typhoid fever. The most prominent one is *diarrhœa* of a thin pea-soup character, ranging from one to twelve per day, but very often, in my experience, the diarrhœa is absent, and instead the patient is constipated. *Rose-colored spots* of a bright red color appear on the abdomen about the eighth day, sometimes they appear over the whole body. *Tenderness and gurgling* in the right iliac region is said to be one of the diagnostic signs. The *nervous symptoms* consist in headache, coma vigil, subsultus tendinum, and delirium, which is often pronounced—are all prominent symptoms; of course, there are many symptoms of typhoid fever which I shall not attempt to discuss, the object of this paper being a discussion of the most important points.

Complications.—The most frequent complications are intestinal hemorrhage, due to an erosion of blood vessels in the intestinal wall, and perforation of the intestines, characterized by acute pains, sudden fall of temperature, and collapse.

Diagnosis.—There is a tendency among physicians to call all fevers which run a course of a few weeks typhoid fever, but how often it is we

attend a case of fever through its entire course and are not able to say exactly what it is, and I agree with Goodhart, "We are too liable to label all fevers by a distinct name." Of course, we have to diagnose it from malarial fever, concealed cases of suppuration, and in the nervous cases from cerebro-spinal meningitis. I have seen the nervous symptoms, and especially opisthotonus, so marked in typhoid fever that it was almost impossible to make a diagnosis. We also have to diagnose it from appendicitis, which is done, in obscure cases, by a blood count—the leucocytes being increased in appendicitis, and stationary or diminished in typhoid fever. The prognosis of typhoid fever before the introduction of the Brandt treatment ranged between ten and thirty per cent.; since its introduction it ranges between one and ten per cent. It is especially fatal among negroes. Although more men (about three to one) have typhoid fever than women, still more women die of this disease than do men. In children, the prognosis is said to be more favorable. Such complications as hemorrhage and perforation greatly increase the death rate, as does also persistent high temperature. This leads up to the most important part of the discussion—viz., the treatment.

Treatment.—The Brandt cold water treatment needs no discussion, pro or con, as it is so generally recognized as the most essential part of the treatment. The most successful way to use this method is to dip the patient in a bathtub of cold water, in which he is to remain for ten or fifteen minutes; at the end of this time he is to be wiped dry and to be placed in bed. But this method, however, is almost impossible in private practice; so we have to resort to either cold sponging for from fifteen to twenty minutes, being sure to leave a thin film of water on the patient, as the evaporation of this is said to be the cause of the reduction of temperature; or we may use the wet pack, consisting of a sheet wrung out of ice water; place the patient in it and let him remain for fifteen to twenty minutes, rubbing over the sheet all this time with pieces of ice. This is my favorite way of reducing the temperature. Although this method has come into such prominence, we are still unable to say exactly how it brings down the temperature.

In the Journal of the American Medical Association for May 18, 1901, Dr. Williams suggests the use of warm evaporation baths in the place of cold baths, by wrapping

three-fourths of the patient with gauze wet in warm water, this gauze to be sprinkled at intervals with warm water (110-115 degrees Fahr.) so as to keep the patient wet, and fan him with a palm leaf or electric fan. Dr. Williams claims that the rapidity of the cooling depends upon the dryness of the atmosphere of the room. He further claims that out of twenty-two cases treated in this manner the average fall in temperature was 2.6 degrees Fahr., but he fails to state just how long the temperature stayed reduced. I have never tried this method, but I shall certainly test its efficiency in my next case of continued fever.

Treatment for intestinal symptoms has hardly been necessary since the introduction of the Brandt method, as this of itself, in most cases, controls the diarrhœa. I do not think it good practice to use anything for diarrhœa unless it exceeds six or eight actions per diem, as it is nature's way to eliminate the poison; but if it should become necessary to control the bowels it is best done by bismuth and some simple preparation of opium or comp. chalk mixture. The most annoying intestinal symptom to treat is the constipation of convalescence, as in this stage of the disease, if we give purgatives, we are liable to produce a perforation of the intestines. If possible, we should always relieve the bowels by enemata of soap suds and water, with a small quantity of turpentine. The hemorrhage is best treated by quieting the patient with a full dose of morphia, using cold to the abdomen, and if syncope be imminent, elevate the foot of the bed, and, if necessary, bandage the limbs so as to throw the blood to the brain. Ergot is advocated by some, but this has not proven to be practical. Perforation of the intestines demands the promptest treatment of all the symptoms or complications of this serious malady. In this complication, shall we give them opium, and stand with our arms folded and let them die? or shall we operate and close the perforation, and give the patient the last chance? Although my experience has been very limited in perforations due to this cause, I would say we should invariably operate. Statistics show that out of sixty-two cases operated on from six to twelve hours after perforation by different operators, according to W. W. Keen, forty-eight died, making a mortality of about 77 per cent., while in cases treated medically all die if it be a perforation; those cases of supposed perforation recovering being probably a circumscribed perito-

nitis without any perforation whatever. Turpentine stupes generally relieve the pains incident to meteorism or tympanites, but if they do not, the use of small doses of morphia are advisable. The use of the milder soporifics are at first indicated for the nervous symptoms, and if these do not suffice, opium in some of its forms should be used, 1-4 of a grain of morphia sometimes being necessary. The heart's action should, of course, be stimulated by the use of strychnia, digitalis, alcohol, and the diffusible stimulants. Bed sores should be prevented by changing the position of the patient from time to time, and by bathing the exposed parts with alcohol or any astringent antiseptic solution. I will pass by the antiseptic and specific treatments, only saying that they have generally resulted in failure. In conclusion, I desire to say that of all the treatments the most important is to keep the patient quiet in bed, and feed him on nourishing liquid food, such as milk, beef tea, and beef broths.

Now, gentlemen, I realize that this is a very superficial paper on so important a subject, but its whole object is to bring out a discussion on some of its most salient points, and if this be accomplished, I shall feel that this paper has answered its purpose.

SOME THOUGHTS ON CYSTITIS.*

By C. N. BROWN, M. D., Webster, W. Va.

There is no class of cases where an injudicious use of remedies proves more deleterious than in inflammations of the urinary tract, and possibly more errors are made in the selections of remedies to relieve these very common and distressing affections than any other to which the human flesh is heir. The bladder is a rebellious organ, a very sensitive viscus, and when diseased, impatient, so to speak, to resent any misleadings. This being true, it is of vital importance that the remedies be well chosen and applied.

Mistakes are often made by giving stimulating diuretics in these cases, causing an increased vascularity and tension to an already inflamed membrane. The long continuation of copious and other nauseating mixtures often causes an irreparable disorder of digestion, while a knowledge of the chemical action of acids and

* Read before the session of the Medical Society of the State of West Virginia, May, 1901.

alkalies to modify the urine is an important point, not always observed in treating cystitis.

There is no question that every mucosa contains pathogenic organisms which do not develop into diseased actions until lit up by some exciting cause.

There are said to be two causes of cystitis—*exciting and microbic*. Among the *exciting causes* may be mentioned the unskilled use of instruments, unclean instruments, growths, ammoniacal urine, calculi, retention of urine, irritating drugs, enlarged prostate, stricture, and gonorrhœa.

Some of the *pathogenic organisms* found in cystitis are the colon bacillus, coli-commune, streptococcus pyrogenes, and Hauser's proteus. They appear to be the cause of the decomposition of urine. The colon bacillus found in retention of urine decomposes urea and releases carbonate of ammonia. The urine becomes foul, ropy and ammoniacal. The streptococcus pyogenes is said to be the cause of foul acid urine. Hauser's proteus releases ammonia so energetically from the decomposition of urea that it is said to be sufficient cause for cystitis.

Mistakes are often made in these cases by washing out the bladder, wounding the tissue, and fertilizing the soil for more rapid development of bacteria. No matter how well sterilized and skillfully handled, the use of the catheter or sound is a dangerous procedure, unless there is a positive demand for them, as in case of stricture, retention of urine, calculi or chronic inflammation of the bladder. Van Buren and Keyes' work reports a case of a man aged 90 years, who had passed the catheter upon himself 35,000 times, and no harm had come of it. This, of course, is demonstrative of the trained resistance of the urethra where carefulness and cleanliness must have been a factor. The sensitiveness of the urethra varies much, and I think the indication for the use of sounds or catheters just referred to would be a safe rule to go by.

In determining the cause of cystitis, we have the microscope, which shows the characteristic pathogenic organism; the cystoscope and urinary analysis reveal the work of that organism, while the further knowledge obtained by physical diagnosis should help to constitute a rational plan of treatment.

A diuretic is said to increase the flow of urine by either increasing the blood pressure in the glomeruli or by acting on the secreting cells of the kidneys; but a diuretic to be useful, from a clinical standpoint, must, in most cases, pos-

sess soothing and healing qualities. I do not see where a stimulating diuretic could be anything but harmful in any disorder of the urinary tract, having its seat below the kidneys, except, possibly, to help expel calculi from the ureters or bladder, or to prevent clotting, as in hæmaturia.

Do not, however, understand me to say that a stimulating diuretic should never be used, for often they are of great value to eliminate toxic products from the blood, as in nœmia, rheumatism, suppression of urine, and the various fevers. Regarding the treatment of cystitis, I have nothing unusual to offer. Cases characterized by fever, pain, and tenesmus should, of course, receive an antiphlogistic treatment, acouite or veratrum; to modify the circulation, morphine and atropine by suppository or hypodermically; if pain and tenesmus are very great, warm local application over the bladder and perineum. Such measures, together with rest and the internal use of soothing and healing remedies, will bring about a cure in most cases.

The following formula is very good in acute or chronic cystitis:

℞. Powdered borax.	
Benzoic acid, ss.	ʒ ss.
Fl. ext. corn silk,	ʒ j.
Water q. s.,	ʒ iv.

Mix. S.—Dessertspoonful in water every 3 hours.

I do not think the treatment of chronic cystitis differs from the acute, as far as the internal administration of drugs is concerned. The patient should have in addition plenty of pure water to drink; he should avoid a stimulating diet, and the bowels should be regulated. The urinary tract should be disinfected, if possible. Salol and calomel given internally will help do this. The object of treatment should be to maintain normal urine in a healthy bladder. Daily cleansing out the bladder with a saturated solution of powdered borax as warm as can be borne is good, and it is a matter of great importance to the patient that this cleansing out the bladder be done the easiest and quickest way. Attach a gum funnel to an ordinary soft rubber catheter; pass catheter into the bladder, which can now be cleaned by pouring the solution into the funnel, and withdrawing the solution by simply depressing the funnel. This can be repeated until the water comes away clear from the bladder.

Patients who are in the habit of relieving themselves with catheters should be taught the

importance of keeping the instrument clean, and no other, except a soft rubber one, should be allowed. I knew a man who, in trying to relieve himself of an attack of retention of urine, wounded the prostatic urethra by pushing the wire through the end of the catheter. A large abscess formed in the bladder, and although I drew away a quart of pus, and used the greatest pains to keep the bladder clean, the infection was too great for the patient to recover.

Another case showing the peculiar way in which the cystitis was set up was that of an elderly gentleman (afflicted with enlarged prostate), who had been using pepper in which Paris green had been inadvertently mixed, the presence of Paris green being verified by chemical test. The patient was suffering from an attack of retention when I saw him. I relieved him with a catheter, and gave him a soothing diuretic, but on the fourth day there developed severe rigors, fever 105 degrees Fahr., great depression and delirium. I feared the formation of an abscess somewhere along the urinary tract, but instead there developed a cystitis complicated with orchitis. The left testicle suppurated and atrophied with no further trouble. Calomel, salol, and quinine were given as an eliminating and supporting agent, together with the internal use of corn silk, borax, and benzoic acid. Anodynes were used for the intense pain, which was present during the beginning of the attack, and after inflammation had subsided, the daily cleansing of the bladder with warm, mild antiseptic solutions was resorted to. The patient made a good recovery.

Certain proprietary preparations seem to have special merit in inflammation of the urinary tract. I am not averse to using anything which appears to help out in these cases. Sanmetto is of value in cystitis, especially when caused by enlarged prostate; cystogen is useful when the urine is foul and ammoniacal; urotropin is valuable for the same condition, and in infective diseases of the bladder.

I shall not write of the different causes of cystitis, and have only looked at this subject in a casual way. I don't believe a paper read before any society should be lengthy; only the essential points should be presented. This would give more time for the discussion, which is frequently more beneficial than the paper itself.

In conclusion, I wish to say that gonorrhœa is a very common cause of cystitis, and since we now have a better knowledge of its sequelæ than formerly, especially among women, and since

the disease is better understood, we are forced to see the sociological danger of gonorrhœa caused by its terrific spread among the people.

We, who in a measure are held responsible for the nation's welfare regarding the spread of disease and the protection of health, take great pains to mitigate the ravages of small-pox, scarlet fever, and other infectious diseases, while gonorrhœa—a disease which causes more suffering, more discord and lamentation, more cripples than syphilis, and more misery, all told, than either the diseases named—is it not true that we, the peoples' guardian, often conceal the garb of this dire monster by not thoroughly warning the people of its dangerous nature?

Proceedings of Societies, Etc.

BALTIMORE MEDICAL AND SURGICAL ASSOCIATION.

Meeting May 13, 1901, in hall of Medical and Chirurgical Faculty, 847 north Eutaw street, Baltimore, Md., Dr. E. E. Gibbons, *First Vice-President*, in chair; Dr. Eugene Lee Crutchfield, *Secretary*; Dr. Andrew J. Sauer, *Stenographer*.

The Ophthalmoscope as an Aid in Clinical Diagnosis.

Dr. Harlan read the paper on this subject, in the course of which he said that the use of the ophthalmoscope is not so difficult as many suppose, but a smattering knowledge of it is not of much use. The facilities that physicians in cities have of seeing its employment remove the difficulty of acquiring its use.

The ophthalmoscope will reveal optic neuritis found in lead poisoning, brain tumors, and abscesses. *Dr. Harlan* related a case of a young man who suffered with excruciating pain in the head, not due to error of refraction. Ophthalmoscopic examination revealed a double optic neuritis. The diagnosis was a probable brain tumor, and a subsequent operation that was performed by *Dr. Tiffany* showed sarcoma of brain.

Tabes dorsalis is sometimes discovered in its incipency by optic atrophy revealed by the ophthalmoscope. Small retinal hemorrhage is suggestive of rupture of blood vessels further back. *Bright's disease* is revealed by the ophthalmoscope as seen in cases of retinitis albuminurica,

and it is rare for a patient to live over two years after this has been discovered. This is sometimes the first thing that attracts the patient's attention. Albuminuric retinitis associated with pregnancy has also been discovered by the aid of the ophthalmoscope. If this occurs in the earlier months, abortion should undoubtedly be performed; if in the later months (seventh, eighth and ninth), the case may be left to run its course. Such patients are apt to abort in subsequent pregnancies.

Dr. C. Urban Smith asked: Has Dr. Harlan observed retinitis albuminurica in cases of chronic nephritis?

Dr. Harlan replied that it was very seldom seen in chronic cases.

Dr. John D. Blake: I recall some cases that do not bear out Dr. Harlan's advice as to producing abortion. When the trouble comes on between seventh and ninth month they can be bridged over until delivery.

Dr. D. Z. Dunott related a case of a man who died of apoplexy. An oculist said that for a year he had been expecting that man's death in that way, as his retinal vessels were sclerotic. Has Dr. Harlan observed any characteristic changes in hysterical affections?

Dr. David Street related several cases illustrating the benefits of ophthalmoscopic examinations.

Dr. James G. Wiltshire: I agree thoroughly with Dr. Harlan. The general practitioner should be acquainted with the use of the ophthalmoscope. Syphilis is sometimes discovered in this way; also often we recognize in this manner diabetes mellitus.

Dr. Harlan: I did not intend to create the impression that all patients did not live over two years with albuminuric retinitis. Some live four, five, or six years; but the rule is for them to die and under two years. Retinitis albuminurica never causes complete blindness. There is another condition (uræmic poisoning), that does cause total blindness, but when patients recover from this they invariably regain their sight.

Dr. David Street read a paper:

The Stethoscope—Its Use in Physical Diagnosis.

It is astonishing how late it was before the "stethoscope" was developed. Twenty-two hundred years ago Hippocrates spoke of rales in the thoracic cavity. But it was not until 1819

that the stethoscope was announced to the world. Then it was a solid piece of wood. Since then we have improved on this form of physical diagnosis, and now have the ampliphone and phonendoscope at our command. The principle involved is the vibration of sound waves. Probably this fact could be utilized in the stethoscope, water being said to be especially adapted to such transmission. Dr. Street exhibited an instrument which he devised, in which the sound is transmitted through copper wires. The sounds are heard through it with a peculiar metallic thud. Dr. Street first uses the unaided ear, then when an abnormality is discovered he employs the stethoscope to localize and intensify the diseased sounds. For this purpose the phonendoscope is better than the stethoscope. For physical diagnosis, it is not so satisfactory below the diaphragm as above it, but even here the stethoscope is of decided service.

Dr. Joseph T. Smith said that one fault with the phonendoscope and the ampliphone is that the disc (conducting) is too solid.

Dr. James E. Gibbons: Very true, as Dr. Street says, the physician can do his best with the instrument with which he is most familiar. I can learn more from the single stethoscope than I can from the double. The main idea in the use of the stethoscope is to localize sounds.

Dr. C. Urban Smith: If the patient can be kept in an upright position, the ear alone will answer; but if the patient is in bed, then the stethoscope must be employed.

Dr. Street: More can be learned from the unaided ear, but better localized through the stethoscope.

Dr. C. Urban Smith moved that the other papers be postponed till next meeting. Carried.

Dr. J. D. Blake moved that at our next meeting we adjourn until next October, and that the subject be finished at next meeting.

Dr. A. J. Sauer offered an amendment that during the summer months we meet once a month in a semi-social capacity. Original motion was carried.

Dr. D. Z. Dunott related a case of a man of athletic habits, who four years ago had to abandon rowing, etc., because of pain in his back. He married two years ago, and six months afterwards pain commenced in one shoulder, extended to the other shoulder, and then to all of the joints. Dr. Osler diagnosed the case as arthritis spondylitis. This man had a peculiar sweating of oil, and had to go to bed, to die, as

every one thought. One morning he surprised his wife by walking down stairs. When the case fell into Dr. Dunott's hands he thought it was tuberculosis. He used Sayre's extension upon it, and much improvement followed.

Dr. J. D. Blake: What other treatment did you employ?

Dr. Dunott: Syr. ferri iodidi, ol. morrhue and albuminous diet. I wish to state that the urine was normal, and there was no taint of syphilis in this case.

Dr. J. D. Blake: I would suggest larger doses, and would use hydriodic acid. Massage is also beneficial in these cases.

Dr. C. Urban Smith: I think that the trouble is due to pressure of the muscles interfering with innervation, nutrition, and drainage of the spine.

Dr. Dunott: There was in this man's lungs an old lesion, no longer active, which was of a tuberculous nature.

Meeting held May 27, 1901. Dr. C. G. Hill, President, in the chair.

Dr. Charles G. Hill reported a case bordering on the domain of surgery and involving natural history. The specimen presented to Dr. Hill was from a gentleman who had captured a male raccoon. After his capture there seemed to be considerable consternation among the raccoon family, especially among the females. He made a post-mortem examination of the captured animal, and discovered nothing peculiar until he observed the male organ, which (in this animal) is permanently ossified, but in this particular instance there was a permanent deformity owing to a previous fracture.

Dr. Herbert Richardson read a paper,
The Use of the Sphygmograph and the Sphygmometer as Guides to Diagnosis and Indications for Treatment.

Dr. Herbert Richardson, in his paper, referred at length to the variance of blood pressure, numerically rating it while the patient was in bed, sitting, walking, talking, after muscular exercise, and at rest. He showed how pathological conditions may early be recognized, and spoke of the physical conditions of the ventricles. In fatigue and in nervous conditions, the pulse wave is weakened, but on assuming the horizontal position there is restoration of strength. Various times of the day affect changes. Age, after fifty years, causes decrease. There is a lower pulse wave also in cases of obe-

sity; also after mental work it becomes depressed. After the ingestion of solids and certain liquids it is affected. In functional heart diseases, he uses these instruments to determine blood pressure. Dr. Richardson recited a number of his experiences with these instruments at Mt. Hope Retreat. He urged the employment of the instruments early in diseases as helpful in diagnosis.

Dr. Charles G. Hill said that the use of these instruments is not only a revelation in diagnosis, but also an inspiration to treatment. By their use he has been led to observe conditions of blood pressure which are often of great importance. Of course they are not always of consequence, but indications for treatment are often suggested by the revelation of these instruments. One effect of thyroid extract is to increase oxidation and dilatation of the capillaries. The sphygmograph shows when this remedy is needed, and also what remedy is to be employed to induce sleep in certain cases. The subject has opened up for him a vast field for observation of practical importance.

Dr. Richardson: The advantages gained by these instruments obviate the shotgun prescriptions of digitalis, strophanthus, nitro-glycerine, strychnine, etc., and show exactly which one of the drugs is called for. The selection of the drug depends on the variance between the maximum and minimum rate. The pulse should also be taken.

Urinalysis—Its Value in Diagnosis and Treatment.

Dr. E. L. Whitney read a paper on this subject. Care should be taken to see that the vessel to contain the urine for examination is clean. Do not use chloroform as a preserver; it will only precipitate albumen; even the aldehydes have their disadvantages. The urine should be examined fresh. No quantitative analysis can be made from a single specimen. The whole amount for twenty-four hours should be collected, measured, and the specimen taken from this amount. Diet must be taken into consideration in making urinalysis.

Dr. H. Richardson: My experiences with patients at Mt. Hope has not been so successful as Dr. Whitney's.

Dr. George Reuling: Changes in the eye, especially in the retina, are often discovered and verified by urinalysis. Also, in diabetes, the lens becomes cloudy and cataractous before the general practitioner discovers sugar in the urine.

Dr. Charles G. Hill: It is the duty of every practitioner to examine the urine in every case of importance. What is of the most importance is the quantitative analysis.

Dr. J. E. Gibbons: While recognizing the importance of urinalysis, it is necessary to avoid "flying off at a tangent." Albumin and tube casts sometimes disappear. Caution must guide prognosis.

Dr. E. G. Waters: How are cylindroids to be distinguished from casts?

Dr. E. L. Whitney: Cylindroids are not absolutely devoid of significance. Casts are often digested by pepsin and the acid of urine. The urine varies according to food—its kind and amount. In life insurance examinations the mistake is made of saying that sugar is present when it is not. In a case that I treated in a young unmarried woman I found spermatozooids in the urine, and soon after there was a speedy marriage following this information. Another case I recall where a man told me he noticed improvement after taking flaxseed, and had a reduction from 1 per cent. to .02 per cent. of sugar. The specimens were diluted, which caused the mistake.

Where Shall We Spend Our Next Vacation?

In the paper by Dr. A. J. Sauer he referred to ocean voyages, local seaside resorts, and the haunts of the mountains, especially those of Eastern New York. He illustrated by pictures along the road of the New York, Ontario and Western railway some places noted for scenery, etc. He referred to the reports of the Loomis Sanatorium at Liberty, New York.

Dr. John Neff suggested that we go to the meeting of the American Medical Association, St. Paul, Minn.

Shall the Association Become a Section of the Medical and Surgical Faculty?

It was regularly moved and seconded that this question be postponed until the first meeting in October, 1901. Dr. J. E. Gibbons offered an amendment that the question be indefinitely postponed. Dr. Taneyhill said that he could not see how a society could become a section of another association. The question was discussed by Drs. Crutchfield, Gibbons, Blake, Hill, and Pennington.

It was finally decided to indefinitely lay the matter on the table. Dr. Waters moved to adjourn until our first regular meeting in the coming October. Carried.

Analyses, Selections, Etc.

Automatic Safety-Valve Stopper—A Device Preventing the Bursting of Peroxide of Hydrogen Bottles.

The great trouble with peroxide preparations is that if the containers are tightly corked, the oxygen which separates and is set free, slowly but constantly as time passes, accumulates, until the bottles can no longer stand the pressure and burst, or the corks are driven out. Of the two alternatives, the bursting of the bottles is the most objectionable feature on account of the danger attached to it.

Containers of the hydrogen peroxide, U. S. P., which is a comparatively weak solution of H_2O_2 , yielding but 10 volumes of oxygen, may be closed with a wooden stopper, which, by the porous nature of the material, permits the escape



(a) Puncture.

Cut No. 1. Illustrates the cross section of the safety valve rubber cork, showing the wooden top and the puncture at the bottom. A thin strip of paraffined paper is inserted into the puncture.

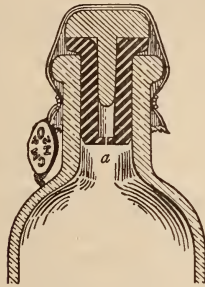
of the gas almost as soon as it is set free, thus avoiding explosion and rupture of the bottles or the driving out of the corks.

While these wooden stoppers answer very well for solutions of H_2O_2 , responding to 10 volumes of oxygen or less, with stronger solutions, such, for instance, as Marchand's peroxide of hydrogen medicinal (15 volumes), or his hydrozone (30 volumes of oxygen), they are quickly attacked by the solutions, as are also the ordinary corks, and within four months are completely oxidized, not merely bleached, but rendered so soft that they cut like put cheese. From that time the goods are unfit for sale.

In order to prevent these difficulties, and especially to obviate the bursting of the bottles containing hydrozone, Mr. Marchand, the manufacturer of that article and other well-known brands of peroxide of hydrogen, has devised an ingenious stopper, which he calls the "automatic safety-valve rubber cork," and which is shown in the illustration.

The material of the stopper is vulcanized rub-

ber. The beveled end is punctured through in such a manner that when the pressure in the bottle rises above 5 to 8 pounds to the square inch (according to the thickness of the rubber at



(a) Puncture.

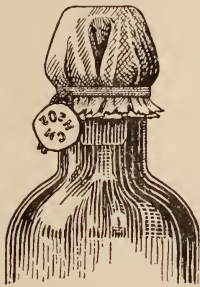
Cut No. 2. Illustrates the cross section of a bottle corked and capped with vegetable parchment and paraffined muslin; no wire.

the bottom, which may vary slightly), the excess of free oxygen finds free egress, and thus relieves the tension.

This device is first inserted, and a plug of porous wood is then driven in, thus stiffening the rubber, and completing the operation of "corking."

The capping consists of vegetable parchment covered with paraffined muslin, no wiring being used or needed.

It is easily seen that this style of closing the bottle obviates the possibility of bursting. As-



Cut No. 3. Illustrates the top of the bottle with the seal.

suming even, that through some imperfection of the stopper, the puncture should close, as soon as the pressure rises to a point far within that required for rupture of the bottle, the stopper,

not being wired down, will yield and be forced out.

Retail druggists who have for so many years been the chief sufferers and losers from the bursting of the peroxide containers, and the deterioration of the substance otherwise from the causes indicated above, will welcome Mr. Marchand's invention as a happy solution of what has to them been a very serious problem in the past, since it will enable them to supply their trade with the higher solutions of hydrogen peroxide, and especially that preparation of Marchand's for which the stopper was particularly designed, "hydrozone," which carries 30 volumes of oxygen.

The device described above—the automatic safety-valve stopper—having entirely obviated the danger rising from the explosion of bottles in handling, there is certain to be a largely increased demand for Marchand's concentrated solutions of the peroxide of hydrogen (which alone will be corked with the patented stopper), since physicians anxious to obtain quick results will never prescribe anything but the most active solutions, or those richest in active oxygen, and since druggists will be protected absolutely against loss by deterioration or explosion. The medical profession is being thoroughly advised of Mr. Marchand's new method of closing his bottles of "peroxide of hydrogen medicinal" and "hydrozone," and will be certain to avail themselves of the advantages thus guaranteed them. —*National Druggist of St. Louis, April, 1901.*

NOTE.—Remember there is no popping when corks are removed.

Book Notices.

Students' Manual of Venereal Diseases. By F. R. STURGIS, M. D., Sometime Clinical Professor of Venereal Diseases in the Medical Department of the University of City of New York, etc. *Seventh Edition. Revised and in Part Rewritten by F. R. STURGIS, M. D., and FOLLEN CABOT, M. D., Instructor in Genito-Urinary and Venereal Diseases in the Cornell University Medical College, etc.* Philadelphia: P. Blakiston's Son & Co. 1901. Cloth. 12mo. Pp. 216. \$1.25.

Of the numerous "Manuals," etc., of venereal diseases, this must rank as among the best. The

vast experience of the author, with his opportunities as a clinical professor on these diseases, having always at hand a corps of able helpers to follow up the history of cases, makes his statements authoritative in questions of diagnosis and treatment. The book is not controversial. Everywhere facts as observed are summarized, and the natural deductions clearly stated—the important points being emphasized by italicized print. Thus it becomes an excellent text-book for class lectures, and for examination occasions. Further than this, it is the book for the practitioner—affording him in short space the real practical information he needs in the treatment of a case. This book is to be commended to the attention of all doctors who have much to do with venereal diseases—whether gonorrhoeal, chancreoid or syphilis, and the syphilides.

Introduction to the Differential Diagnosis of the Separate Forms of Gall Stone Disease, Based upon his own Experience Gained in 433 Laparotomies for Gall Stones. By PROF. HANS KEHR, Halberstadt. *Authorized Translation.* By WILLIAM WOTKYNs SEYMOUR, A. B., Yale, M. D., Harvard. Formerly Professor of Gynecology in the University of Vermont; Surgeon to the Samaritan Hospital, Troy, N. Y., etc. *With an Introduction by* PROF. KEHR. Philadelphia: P. Blakiston's Son & Co. 1901. Cloth. 12mo. Pp. 370. \$2.50.

Easier reading translations have been made. One reading the book has sometimes to stop his study of the subject to study the meaning of the language used. But the remarkable experience of Prof. Kehr in having occasion to do so many laparotomies as 433 for gall stones entitle his work to careful consideration. With regard to the necessity for operation, the author occupies a middle path. "If von Winawer says that, with the diagnosis, 'gall stones,' the indication is also given for operation, then he goes too far; and if Kraus, of Carlsbad, would permit surgical intervention only upon a vital indication, so is he also wrong. By the middle path, we best reach our end; and we ought never 'to attempt an operation without weighing well what will be the reward and purpose of the hazard.'" While yet a few cases defy absolute diagnosis, we know of no one work wherein so much of valuable help in differential diagnosis can be secured as in this. The Table of Differential Diagnoses on pages 84, 85, and 86 is of very great help in the consideration of questions of diagnosis. It is a good book.

Editorial.

The Army Canteen.

During the session of the Association of Military Surgeons of the United States Army, held in St. Paul, Minn., May 31st, Lieutenant Louis L. Seaman, late of the First United States Volunteer Engineers, read a paper, which condemned the act of Congress that lately abolished the army post exchange or canteen from the camps of United States soldiers. It is affirmed that this act of Congress was secured by the indefatigable work of the Woman's Christian Temperance Union. Facts are brought out to show that only about eight per cent. of the entire force of the regular army are total abstainers from alcoholic drink. Excessive drinking in camp is quickly observed, and the offenders are punished. The fact that the soldiers felt that they could get their drinks in camp led to conservative indulgence. Whereas, since the congressional abolition of the canteen in the army, the number of monthly court-martials has rapidly increased. The following is a copy of the preamble and resolution which were practically adopted unanimously by the Association of Military Surgeons of the United States:

"Whereas, The Association of Military Surgeons of the United States, now in session at St. Paul, recognizes that the abolition of the army post exchange or canteen has resulted, and must inevitably result, in an increase of intemperance, insubordination, discontent, desertion, and disease in the army; therefore, be it

"Resolved, That this body deplores the action of Congress in abolishing the said post exchange or canteen, and, in the interests of sanitation, morality and discipline, recommends its re-establishment at the earliest possible date."

Colonel Reed, of Wyoming, offered a supplementary resolution, which was adopted, constituting every delegate a committee to see the congressmen from his own State, and further provided for a committee of three to labor with Congress. This last committee is to act with the Legislative Committee of the American Medical Association.

What to do about this question of allowance of whiskey to soldiers is a knotty question. Total abstinence as a universal or even as a general law governing masses of people is not a demand of nature nor of morals. Of only a relative few is total abstinence required.

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Original Communications.

NEW FINDINGS IN OPHTHALMOLOGY.*

By E. H. HAZEN, M. D., Des Moines, Iowa,

Emeritus Professor of Ophthalmology, College of Physicians and Surgeons, Des Moines, Iowa.

Oculists know that eye strain is due to other difficulties than errors of refraction, and that many cases are ill at ease when these errors are corrected. We know that these cases go from glass fitter to glass fitter, seeking relief, and when this is not found in change of formula of glasses, the trouble is attributed mostly to general or constitutional debility, and prescriptions of medicine, diet or climate are resorted to. In many cases I believe this is because of a want of sufficient recognition of some of the troubles of the appendages and their psychological connection.

The method of examination of the ocular muscles and the instructions for disciplining them as laid down in the books are crude, inefficient, and in want of that scientific precision which is characteristic of ophthalmology, which, it is claimed, is practiced with more scientific exactness than most other branches of medicine and surgery. I say this, notwithstanding there are some good instruments for detecting heterophoria. When the trouble is attributed to want of balance of the ocular muscles, a prism is often given to be worn continuously, or tenotomy is resorted to. If muscular discipline is attempted, the method to carry it out is crude, and the results not as satisfactory as might be.

I have made special efforts for the last ten years in this particular line, and have constructed an instrument called the Kratometer, which, I believe, answers to all the tests, and also is used for treatment of these troubles. The results of easier examination and successful treatment jus-

tify me in presenting it to your attention. I do not claim to have solved the treatment for all muscular difficulties, but think I can contribute somewhat to the problem.

Without explaining the usual methods here, I will say that the requisites I deem necessary in examination and treatment are:

1. Smooth manipulation, steady and on straight lines, as the muscles of the eye are very susceptible to inaccuracies of movement, and will not answer correctly when proper care is not exercised.

2. The tests should be made with the prisms, cylinders or rods with exact axes.

3. The instrument should be constructed on the level and the plumb, and the apertures through which the person examined looks, should not be so large that the head may be allowed to get out of the primary position.

When all this is done much more accurate information is obtained than by the usual practice.

Much more importance is given, I think, to the want of balance in the muscles (heterophoria) than is warranted. The method of finding this condition is more definite when the position of the lenses, cylinders or rods are used as above described, than in the common way. But in whatever relation the eyes may be *caught* in their relation to one another, I venture to affirm that much more latitude can be given to the construction of the length of the muscle, deformity of the orbit, which may be, and may not be, the most common cause of heterophoria, which interpretation one infers from reading the literature on this subject.

I think muscular imbalance is a treacherous element by which to be guided; that this phenomena varies exceedingly. In many severe cases of muscular asthenopia there is equilibrium found, and heterophoria is often developed in its treatment, and yet the case gets well.

From my experience with the kratometric examination and treatment of the muscles of the

* Read at the meeting of the Iowa State Medical Society, May, 1901.

eyes, I cannot but believe that until we discover a method by which we can ascertain the "intrinsic" or "latent" misadjustment of the anatomy of the muscles, and verify the assertions regarding what is called "latent heterophoria," we must turn more attention to the innervation, and assist nature in applying life to the muscles. These investigations show that the amount of heterophoria is not at all commensurate with the symptoms of trouble manifested, and the study of imbalance should serve to aid us in the concomitant phenomena, rather than the phenomena should serve to magnify the importance of heterophoria.

I have given numerous tables with this paper, by the study of which one can see what an unreliable element this imbalance is by which to be guided in the correction of symptoms that are sometimes serious. Authors disagree as to the normal point of rest, some holding that it is in divergence. As to the theory of "latent heterophoria," and the manner of developing it, is questionable. The vagaries of its appearance in different degrees in cases—some days being orthophoric, and the next day showing four to six degrees of heterophoria—are puzzles, and tend to unsettle faith in its importance, and it is not well when these facts are presented to hide behind the assertions of "latent heterophoria."

We may justly affirm that nature has a way of making good what the anatomist does not explain, who assumes the misfit by putting in the living force which we call innervation, and applies a greater or less amount to the muscle as the demand requires. Then, again, when the heterophoria is ascertained, but little information is obtained. Why is it so many persons have heterophoria and yet have no trouble with their eyes? It is a significant fact.

There is less importance given in ophthalmological literature to the strength of the muscles than the imbalance, and some writers ignore it; but from my study of the matter I would transpose this estimate of value of examination, of position of eye-balls to that of the musculo-dynamics, or to the innervation of the muscle. It is true that the phenomena of the force and its strength can only be measured by its action in the muscles, but we may be enlightened if we keep more in thought the physiological condition, and not so much the anatomy of the region. If I understand the books, the tests of the duction are made more for the purpose of estimating what they call the latent heterophoria.

To ascertain the duction or strength of the muscles the crudity to which I refer is most apparent. The practice of putting before the eye prisms from the trial case—first of a high and then of a low degree, one after the other, with the axis at haphazard angles, and making the change in a frame upon the nose of the patient—is exceedingly at fault. A prism put before the eye in this way may be corrected at one time, and the next few minutes it cannot be. It may be corrected when placed over one eye, and not when put over the other eye. The result of investigation in this way may be very different one day than the same method carried out the next. The fusing of the two images is really accidental.

To follow out what I deem to be an improvement I have here batteries of prisms, one increasing by one degree with base on side. They are run up before the right eye or down before the left for testing adduction, and the opposite way, base in, for abduction. The other battery increasing by quarter degrees, with base down, or at right angle to the length, which two batteries fulfill the requirement as far as I know. These batteries run in a groove, giving steadiness and precision of movement. A disk of four prisms is fixed in the end of a slide, with intervals of five degrees, which are brought in perfect angles before the eye, one of which is turned before one eye, and when this is overcome the battery is carried past the other eye. It is found that sometimes in adduction to that first corrected fifteen or twenty degrees can be overcome. When the highest degree is thus obtained it is found it will accord very nearly with that obtained on second trial, either at the same sitting or that of the next day.

SYMPTOMS.

Many symptoms are those of errors of refraction, and it is difficult sometimes to differentiate them. The symptom of blurring, for instance, is as often occasioned by muscular asthenopia as accommodative asthenopia, but has generally been attributed to the latter. The eyes in severe cases have a dull and uninteresting look; the person disinclined to fix eyes, and, indeed, avoids the effort of close observation, averting the look as one of guilty conscience. The inability to look upon moving objects, or when moving themselves upon a succession of stationary objects, is a prominent symptom. Redness, tearing, swelling about lids, intoler-

ance of light, lancinating, sticking, shooting pains, neuralgia in eye, forehead, temple, back of head, in line of muscles, pain in back of head, shoulders or spine is a concise enumeration which might be amplified in individual cases. One symptom that cannot be attributed to errors of refraction is an inclination to press upon the eye-ball, either by forcible tension of the orbicularis or a pressure by the hand, which relieves the tensions of the recti and gives temporary rest.

TREATMENT.

It is conceded that in all cases of eye strain the refraction should be corrected first, but I have found many wearing low powers for relief of their eye strain, who, after taking gymnastics, have discarded their glasses. The correction of imbalance by graduated tenotomy of other than severe cases is being distrusted by ophthalmologists, and the relief attempted by wearing prisms constantly is as bad as prescribing morphine for pain without removing the cause which gives rise to it. It is much like it, in that it is only palliative, and soon requires an increased amount, when at last the radical correction with hook and scissors seems then justifiable, but, however, it has been created or at least increased by the prescriber himself.

And the wearing of a prism for a few days to "develop the latent heterophoria" is like an accidental overdose of drug that goes beyond palliation to deadening of the innervation. When tenotomy is performed there has been no new strength added. It is thought by shortening or lengthening the muscle that as much strength will not be required, but a weakness has been added in the cutting, which the improvement in position may not be a sufficient advantage to overcome the lost strength. Of course this argument is only applicable to moderate degrees, it is not advocating to do away with surgical interference entirely, but I believe the dernier resort can be put further in the background in the field of ophthalmology, and this, too, will include a large number of cases.

In 1896 I first instituted the treatment which I will here give. For several years I carried it out as the cases fell into my hands, but was not awakened to its full value until a short time since, when I found the cases I had treated did not relapse as I had expected they would, but have remained free from most of the symptoms for which they sought relief. The treatment of the cases I present consists in gymnastic exer-

cise once a day solely, no drugs being used. I did not debar them from use of the eyes, either, but advised to desist when pain arose. It consists in disciplining the defective muscle to exercise its utmost, fusing the two lights produced by the action of a prism on a candle at twenty feet distant.

The kratometric treatment consists in placing before one eye a prism the strongest that can be overcome, and then passing before the other eye prisms by regular intervals of strength until the eyes are unable to fuse the images. This method, with decided interruptions between the prisms with smooth manipulation, seems to awaken the innervation of the nerve. The brain seems to have forgotten how to apply the force. It is thus educated to do its work again. This process is repeated five to seven times at a sitting until the normal standard is attained, and continued then for two or three days more. The number of treatments averages about twenty, some more and some less. The success attained in the relief of the distressing symptoms is exceedingly gratifying and unexpectedly permanent.

Dr. Geo. Gould, in 1894, at the Pan-American Ophthalmological Section of the Medical Congress (*Ophthalmic Record*, Feb., 1894), said: "It would seem that as conservative and wise physicians we should not longer indulge in this glamour of surgical procedure, but with wise conservatism we should seek to remedy defects by physiological and medical methods, rather than by surgical methods. The developing of the weak nerve centres is the true and rational method of procedure in these cases."

CASES.

Case 1. August, 1896. Miss M. B., Indianola. Student, age about 20 years. Deficient in constitutional tone. I had corrected refraction, but on returning to study had trouble again, pain of a smarting, lancinating character. Orthophoric. Adduction, 19; abduction, 8. Having exhausted my knowledge on this case, I sent her to Chicago to Dr. Holmes, who found nothing to do but to give gymnastic exercise on the internal recti. The endeavor to carry out this instruction resulted in the first steps of this treatment. In fifteen treatments I brought the recti to the standard, 50, and discharged her. She remained free from the eye trouble and was able to prosecute her studies moderately. She remains well to this day.

Case 2. November, 1896. High school student. Had had trouble with eyes since going to kindergarten; remained for hours at a time in a dark room; intolerance of light, especially artificial light; headache about eyes, could get relief with hot applications. She wore weak cylinders. Vision good, but found it difficult to get a clear vision because of blurring or double vision. Esophoria, 2 1-2. Adduction, 20. Removed glasses. Treatment: Adduction, 23 treatments, when the esophoria was 1 1-2. Remained in school while treating, and improved from the start. January, 1901, has been free from pain and only on intemperate use experiences inconvenience. Has not worn glasses since.

Case 3. January, 1897. W. G. R. Connected with the newspaper, member of the Legislature. I had fitted him with glasses under a cyclopegia, but he was not relieved. For seven years he had not been able to use his eyes in the evening. In the daytime could use them but two hours, thirty minutes at a time at the most. Eyes smarting and itching and headache. Esophoria, 2; adduction, 5. In 32 treatments adduction 50. He used his eyes that winter night and day as any member of the Legislature. In the winter of 1898 he continued well.

Case 4. February, 1897. Mrs. J. B. D., age about 30. Had an attack of iritis in right eye three years before, which left eyes weak. Had been under good physicians and two oculists. Vision good. Severe lancinating pains and feeling of eye-balls being drawn back, especially at night. On waking in the morning was obliged to rub the eyes. Unable to use eyes with any comfort. Esophoria, 10; adduction, 35. Treatment, adduction. In 22 treatments was relieved entirely. The winter of 1898 had la-grippe, and seemed to effect eyes somewhat, but did not relapse.

Case 5. May, 1899. W. H. W., age about 42. Travelling man. Good constitution and physique; had had neuralgia in and about eyes for fifteen years. Unable to use eyes at near work; deprived entirely from reading on the cars. Consulted eminent oculist in Boston, and was wearing a prism prescribed by him, which availed nothing. Examination showed he was emmetropic. Orthophoric. Adduction only 5. I gave him the kratometric treatment on adduction daily when in the city, which was broken into sometimes at long intervals, and it extended to September; 30 treatments in all.

After the fifth treatment he had no more neuralgia, and has been free from it since. Heterophoria was developed—first exophoria and then esophoria.

Case 6. May 25, 1897. Dr. S., age about 35. Addicted to much reading, for three or four years had been troubled with redness of eyes on reading; eyes hot and dry, feeling of sand under the lids, which would grow worse if reading was continued, when the letters would dance and become blurred, when, in a short time, he would be unable to open his eyes. The swollen condition showed itself under the eyes, like the symptoms often attributed to disease of kidneys. Esophoria, 2 degrees; adduction, 5 degrees. The kratometric treatment of the adductors resulted in attaining 50 degrees in 25 treatments, when all disagreeable symptoms were removed, and he has had no return of the trouble since. In this case, as in many, the heterophoria increased.

Case 7. July, 1897. C. S. H., postmaster, Boone, Iowa. Had for several years difficulty of fixing eyes on an object and holding them there, more at a distance than at a near point. Riding on a railroad or attending a theatre caused much aching of eyes, especially on returning home, and in the morning it was with much difficulty that they could be tempered to the light. Generally it took until noon to restore them to a normal feeling. The symptom of fitful gaze was very marked in this case. He was unable to look one in the eye but for an instant. Examination showed that he had esophoria of 2 1-2 degrees; adduction, 9 degrees. In 31 treatments he adducted 50 degrees, and most of the symptoms had disappeared. His esophoria increased to 4 degrees. On last account, two years afterward, some of the symptoms had returned, but has been able to keep in his work.

Case 8. September, 1897. J. S., age about 25. Teacher of music. Neuralgic pains back of eyeball, back of head and neck, and down the spine. Eye watering; subject to nausea. Exophoria, 2 1-2; adduction, 4; abduction, 8. Treatment, adduction. In 28 treatments she could adduct 55, and most of the symptoms were relieved.

The cases given are but a few of the cases I have treated by this method, some taking more treatments for their relief and some less. The percentage of cases of satisfactory results are of as high a per cent. as those in any other class of eye trouble.

EXAMINATION OF EYE MUSCLES

Of 33½ Children in the Des Moines Schools, from Fifth to Eighth Grade, age 10 to 16 years.

The scholars were designated by number, the grade, age, and whether or not they had trouble with their eyes; and if any, what symptoms were noted briefly. The common method of using square prisms was used free from the instrument to see what prism they could overcome. The test was then given by the Maddox rod for lateral and then vertical deviation. The number of inches on the cross bar was noted, and deviation measured also by prism. Care was taken to have the aperture through which the candle at twenty feet shone, but a half inch in diameter to get the hyperphoria, and a quarter degree was noted. Twenty-nine of the cases had hyperphoria of this amount, but in my tables I do not use this amount that I might conform to the report of other observers. These tests were also made by Maddox double prism for heterophoria at the same distance, the double prism also for cyclophoria, then Von Graefe test at sixteen inches with ten degree prism, base down. In high degrees of heterophoria the red glass was used over one eye. The duction power—adduction, abduction, and sursunduction—carrying the battery of prisms over R. E.

Of the 334 examined there were four with blind eye, two strabismus, three dummies, making nine cases deducted from 334, which leaves 325, from which I compute my statistics. Of these half were boys and half girls. One hundred and fourteen, 35 per cent. of the number, claimed they had no trouble with their eyes. Twenty-two more said at first they had no trouble, but on questioning them further admitted they had had headache, but did not attribute the symptoms to any connection with the eyes. The remainder had symptoms of headache—forehead, temple, and back of head—eyeache, dizziness, watering, blurring, double vision, smarting. Hurting on use of eyes. Forty-eight had vision below standard. A few of these had one eye 20-xx. There were 23 wearing glasses, 19 had worn glasses, but had discarded them.

The refraction was not corrected before the examination of the muscles was made. The tables herewith will give further results of this examination.

From my experience in this examination, and

in the treatment of eye difficulty, I believe more persons are suffering from muscular asthenopia than accomodative asthenopia, and many are wearing glasses for slight errors of refraction to correct symptoms that arise from muscular trouble. A large percentage have removed their glasses after this treatment.

An unexpected result to me is the permanency of the relief which I had not hoped for in the beginning, and I believe this treatment will be successful in a very wide field of distressing symptoms.

Examination of 325 children in schools of Des Moines, Ia.—Table showing the—phoria.

Esophoria.			Exophoria.			Hyperphoria.			Recapitulation.	
Deg.	No.	Deg. No.	Deg.	No.	Deg. No.				Pr. ct.	
½	44	½	19	½	24	Orthophoria,		58	18	
1	42	1	25	¾	12	Esophoria,		203	63	
2	28	2	10	1	6	Exophoria,		61	19	
3	27	3	0	1¼	4	Doubtful,		3	..	
4	24	4	2	1½	1			325	100	
5	9	5	5	2	1					
6	7	6	1	1	2	Hyperphoria,		52	16	
7	2	7	9	1	2	Cyclophoria,		50	15	
8	5	8	12	1	1					
9	3	9								
10	1	10	61		52					
11	2	11	19		16	per ct.				
12	4	12								
13	1	13								
15	1	15								
19	1	19	1		Ortho-	phoria.				
20	1	20			Cyclo-	phoria.				
25	1	25								
				58		50				
			203	18	per ct.	15		per ct.		
			63	pr. ct.						

Examination of the Extrinsic Muscles of the Eyes—The Phoria and Musculo-Dynamics of 100 consecutive cases, schools of Des Moines, Ia., ages from 10 to 16 years.

Esophoria.	Exophoria.	Hyperphoria.	Adduction.		Abd'n Sursum.	SYMPTOMS.		
			Prism in Hand.	Kratometric.				
Deg.	Deg.	Deg.	Deg.	Deg.	Deg.			
.....	1	0	5	15	2	No trouble.		
4	0	10	14	16	3	Headache on use.		
Orth..	0	10	14	19	9	No trouble; headache.*		
1	0	5	12	14	6	No trouble.		
.....	1	0	5	15	14	6	Waters.	
5	0	15	26	8	2	Blur; sees double.		
.....	½	0	5	9	7	4	Blurs; rubs.	
2	0	10	34	32	5	2	Headache over eyes.	
Orth..	0	5	12	12	7	2	Headache.	
11	0	10	25	19	5	1	"	
2	0	15	21	22	7	2	"	
.....	1	0	5	14	12	6	2	Hurts sometimes.
2	0	10	15	4	1		"	waters.
Orth..	0	5	11	14	3	1	3	Styes; headache.
.....	½	½	5	10	9	3	1	No trouble.

*Afterwards admitted headache.

Examination of the Extrinsic Muscles of the Eye—Cont.

Esophoria.	Exophoria.	Hyperphoria.	Adduction.		Abd'n Sursum	SYMPTOMS.
			Prism in Hand.	Kratometric.		
Orth.	0	20	27.25	4	2½	No trouble; headache.
1....	0	5	20	2	2	No trouble.
15....	0	15	17.16	5	2	No pain
3....	0	10	27.27	3	2½	Hurt on severe use.
4....	0	5	15.15	6	2	"
2....	0	5	20	5	1½	"
6....	0	5	14.13	3	2	Smart on reading.
Orth..	0	10	19.18	7	2	Headaches, temples.
6....	0	5	7.8	3	3	"
13....	1	0	5 7.6	4	2	No trouble.
0	0	5	20	8	2	"
0	0	5	9.10	5	2	"
0	0	10	16.16	4	2	"
0	0	10	25.30	5	1	"
0	0	5	7.7	5	2	"
0	0	10	21.21	5	2	"
0	0	10	12.13	3	2½	"
0	0	10	16.18	3	2	Waters.
3....	0	10	30.25	14	?	"
2....	0	5	30	6	2½	No trouble.
4....	0	10	18	9	?	"
4....	?	5	11	8	1½	"
1....	0	5	13.11	8	2	"
Orth..	½	5	13.12	6	2½	"
Orth..	0	5	10	5	2	"
9....	0	10	14.18	12	3	"
1....	1½	10	20.20	7	1	"
1....	0	10	19.19	7	1	"
3....	0	10	25.27	6	2	"
1....	0	5	20.22	3	2½	Headache on reading.
1....	0	5	20.20	12	2	Headache over eyes.
2....	0	15	20.24	5	1	Headache on use.
6....	0	10	14.15	2	1	Ache in forehead on use
5....	0	5	8.7	5	1	Eyes water.
3....	3	10	13.12	4	2	Eyes water on reading.
Orth.	0	10	16.18	4	2	No trouble.
1....	0	10	18.16	4	1½	"
12....	0	15	16.22	5	1½	"
0	0	5	13.12	5	2	"
1....	0	10	20.18	1	1	Esotropia
Orth..	0	5	7.7	12	1½	No trouble.
0	0	5	9.12	4	2	"
Orth..	0	10	19.19	3	2	"
4....	0	10	14.14	6	1½	Headache.
2....	1½	10	23.23	4	1	No trouble.
Orth..	1	10	20.18	4	½	"
1....	0	10	18.17	2	1	"
1....	0	10	18.17	2	2	"
2....	2½	5	23.24	6	2	"
3....	½	5	8.13	2	2	"
4....	0	5	24	6	2	"
1....	0	5	18.17	7	2½	"
1....	0	5	9.8	6	2	Headache; pressure rel.
½	0	10	13.14	6	2½	Headache.
4....	0	15	19.19	6	3	No trouble.
3....	0	5	16.17	4	2	Headache over eyes.
7....	2	5	18.15	7	1	Headache.
19....	0	5	14.12	4	1	No trouble.
2....	0	5	19.20	8	2	Double vision.
Orth..	0	15	25	6	2	Headache.
Orth..	0	5	14.11	4	1	No trouble.
Orth..	0	5	9.10	5	2	Smarting, headache.
Orth..	0	10	15.35	4	3	Pain in and above eyes.

Examination of the Extrinsic Muscles of the Eye—Cont.

Esophoria.	Exophoria.	Hyperphoria.	Adduction.		Abd'n Sursum	SYMPTOMS.	
			Prism in Hand.	Kratometric.			
Orth..	0	20	31.30	14	3½	Headache and back of—	
.....	2	½	10	13	2½	No trouble.	
Orth..	0	5	8.8	5	1½	"	
½	0	5	12.11	5	1½	Headache on use.	
Orth..	0	5	21.22	6	1½	Headache.	
Orth..	0	5	14.13	6	2½	Hurt after reading.	
Orth..	1	10	19.20	8	2½	"	
9....	0	15	25.25	1	1½	Dizzy.	
Orth..	2	0	10	23.26	15	4	Ache on reading.
0	0	5	20	5	1	"	
Orth..	0	15	25.25	5	1½	Headache on use	
2....	0	10	18.19	4	1½	Headache after use.	
Orth..	0	10	18.19	7	2½	Used to have headache.	
½	0	5		3	2	No trouble.	
8....	0	15	20.21	4	1½	Trouble in reading.	
1....	0	5	10.20	3	2½	No trouble.	
2....	0	5	8.7	5	2½	"	
2....	0	15	25.35	8	1½	Ache after reading.	
½	0	5	7.10	11	2	No trouble.	

THE RELATION OF PELVIC DISEASES TO INSANITY.*

By JOHN C. DOOLITTLE, M. D., Independence, Iowa,
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In presenting my views on this subject, I am aware that they will not coincide with the views of many who are present. My opinions have been formed chiefly from my association with, and examinations and after treatment of insane women in the State Hospital at Independence. Formerly we did not give every patient admitted to the hospital a thorough gynæcological examination, but only those in whom some pelvic disease was suspected, or where there was a history of such disease given by the patient or her friends. For several years, however, each patient at her admission has been given, not only a thorough mental examination, but a physical examination, including, in practically every case, an examination of the pelvic organs. In some patients we find a very small opening in the hymen, and others are so opposed to an examination and resist to such an extent that a thorough bimannual examination cannot always be made.

For special reasons anæsthesia is not resorted

* Read at the Iowa State Medical Association, at Davenport, May 15, 1901.

to unless there is good cause to believe that a more thorough examination is essential to the patient's welfare. Under these conditions it is quite probable that not all the pelvic disorders are found and recorded.

During the five years I have been on the female service in this hospital I have examined over 650 women at or soon after their admission. A little less than 300 of them have received gynecological treatment. Comparatively only a few have received surgical treatment. The greater part of the work has been done with electricity, local applications, tampons and antiseptic douches. I do not think any one of these women recovered from her mental derangement solely through gynecological treatment. In many cases the patients seemed to recover from their mental and pelvic diseases simultaneously. In almost all cases the pelvic conditions were benefited by treatment, usually resulting in improvement of the general health of the patient.

To formulate the few statistics I present I have taken only those examinations made during our present biennial period, as during this time practically every woman admitted has been given a gynecological examination. During these twenty-two months 276 have been admitted. In over 66 per cent. of these cases some pathological condition has been found in one or more of the reproductive organs. This does not include the physiological changes due to old age.

The following lesions were found, in some instances several being present in the same patient:

In 70, lacerated perineum; in 68, lacerated cervix; in 32, erosion of cervix; in 3, cervical polypus; in 18, flexion of the uterus; in 20, other fixed displacements of the uterus; in 40, subinvolution, and in 3, uterine myoma. In three patients the reproductive organs were not normally developed. In two patients both ovaries had been removed, and in one patient the uterus and both ovaries. Four women were found to be pregnant, and one patient was found to be a male. In a number of cases perineorrhaphy and trachelorrhaphy had been more or less successfully performed. Eighty per cent. of those admitted were married women.

There was a positive history of heredity in 47 per cent. of these cases. In only a small per cent. was heredity excluded, and in the remaining cases a complete and reliable anamnesis could not be obtained.

In the cases of trachelorrhaphy and perineorrhaphy I have been able to observe, there has resulted no material beneficial effect on the mental condition.

My observations of ovariectomies on the insane have been limited to ten cases. They are as follows:

Four years ago a large ovarian cyst with both ovaries was removed from a patient who had been in the hospital for several years. She was a case of dementia præcox (primary dementia), and since the operation has gradually become more demented.

A few months ago ovariectomy was performed on two patients for very rapidly developing dermoid cysts following typhoid fever. They were both cases of dementia præcox, and there has been no mental improvement in either case since the operation. The operations were done in the three cases mentioned at the hospital, and simply for surgical reasons, and with little hope of any mental benefit.

Two cases of dementia præcox were operated on, and both ovaries removed while the patients were absent from the hospital on parole. There has been little or no change in the mental condition of one. In the other the mental condition has been worse since the operation.

In one case, dementia præcox developed soon after the removal of a large abdominal tumor and both ovaries. This patient is now in the hospital, in excellent physical health, but permanently demented.

One patient, a single woman, had some uterine trouble following an abortion. She became taciturn and depressed. Both ovaries were removed with the hope of improving her mental condition. She was soon after admitted to the hospital, and is now in poor physical health and very badly and permanently demented.

In a case of melancholia both ovaries were removed at the onset of the disease, with the hope of relieving the patient's mental condition. She was soon after admitted to the hospital in a very confused and despondent condition, and remained there until she suicided a year later.

In one case a hysterectomy and ovariectomy were done and a few months later a perineorrhaphy was performed. A few months after this the patient became insane, and was sent to the hospital.

Ovariectomy was performed in one patient who had always been peculiar and unreliable, and who, after the operation, became unmanageable and was sent to the hospital, where she re-

mained two years, but was discharged in her normal mental condition.

When we consider the relation between the nervous system and the functional activity of the reproductive organs it might seem probable that any irregularity or diseased condition of the pelvic organs would have a corresponding influence on the mental condition of the patient. This, however, does not hold true.

I think it is probable that pelvic disease in women may, in certain cases, be a prominent factor in the etiology of insanity. Occasionally the pelvic disease may seem to be the chief factor in etiology. I doubt, however, if in any case the pelvic trouble is the sole cause of the insanity. It has been my experience that in almost all such cases if the anamnesis of the patient and her family is carefully studied, it will be found that she is predisposed to insanity. Either she as an individual is unstable or below par mentally, or she has an inherited predisposition.

It is often evident that some pelvic disease is a constant source of irritation to the nervous system, and that it helps lower the vitality of the patient, impairing her physical health; and thus if she is predisposed, she may become insane the same as she would if her health were impaired through any other channel. I think if the pelvic trouble is recognized in such a patient, and she is properly treated in time, she may often escape insanity. If she is not thus predisposed any amount of pelvic disease will not, in my opinion, cause her to become insane.

There is no relation between the intensity of the mental symptoms and the severity or extent of the pelvic disease. Frequently when the pelvic disease and mental trouble seem to be intimately associated, we find only a trivial pathological condition of the pelvic organs. Again, we may find extensive disease of one or more of the pelvic organs which bears no relation to, and has no influence over the mental disease. A grave or malignant disease of the reproductive organs is seldom if ever the cause of insanity.

I have said there is no relation between the intensity of the mental symptom and the severity of the pelvic disease. This rule holds good in regard to the relation of menstrual disorders and insanity. Often when there seems to be a most intimate association between the menstrual periods and the mental disturbance little or no disease can be detected in the organs involved in menstruation. It is also true that we may have extensive ovarian and tubal dis-

eases in insane women which seem to in no way influence their mental disorder.

Some patients who have been regular in their menstrual periods until they become insane do not menstruate during the entire attack of insanity, but after they have entirely recovered from their mental disturbance will again menstruate regularly and normally. Sometimes it seems as though the mental disease might produce some disturbance of the menstrual functions. Some women will menstruate regularly during their entire attack of insanity with little or no inconvenience. I think we are called on to prescribe much less frequently for menstrual troubles in insane patients than we are in an equal number of sane women. This is probably due, in part at least, to their disregard of physical pain or their inability or lack of desire to communicate their feelings and wants to others. I know only a very few women among our patients at the hospital who are always worse during their menstrual periods than they are at other times, although many of them are occasionally worse during these periods, but it seems to be more often accidental than it does a matter of cause and effect.

To me it seems rather strange that all insane women are not more disturbed during their menstrual periods than at other times, from the fact, as is generally conceded, that most women, and particularly those in poor health, are more nervous and irritable, or at least more uncomfortable during their menstrual periods than they are at any other time. If this is the case in sane women, is it at all strange that insane women should be more depressed or more nervous, irritable, or excited during these periods than they are at other times?

If a woman who is on the border line of insanity when her menses appear should, under the increased nervous strain due to menstruation, show the first decided symptoms of insanity, we have no right, I think, to consider menstruation as the cause of her insanity, but should consider it only an accident and look for some cause preceding this.

Although masturbation is not a pelvic disease, it may sometimes be the result of pelvic disease or irritation of the pelvic organs; and in this connection I wish to say that masturbation is more often the result or effect of a weakened or diseased mind than it is the cause of insanity, although it is frequently given as a cause simply because the patient has practiced the habit to

some extent or has been seen to masturbate after she has become insane.

There is a diversity of opinion as to the result to be obtained from surgical operations on the pelvic organs of insane women. Some seem to think a very large per cent. of mental cures may be accomplished by surgery. Dr. Burke, of the Ontario Asylum, gives as the result of work in this direction at that hospital the following:

In 110 cases operated on there were three deaths; 36 per cent. recovered mentally; 29 per cent. were improved mentally, and in 32 per cent. there was no mental improvement. These cases, however, had all been selected, and no doubt show a much larger per cent. of improvements and recoveries than otherwise would have been obtained.

Dr. Tomlinson, of the St. Peter State Hospital, Minnesota, gives the following as the result of operations on seventy cases selected from 231 patients:

The pelvic condition was cured in 22 instances, improved in 26, and in 22 there was no improvement. There were no mental cures; 29 were improved mentally, and in 41 patients the mental condition remained unimproved.

Dr. Carpenter, of Columbus, Ohio, has compiled the reports of operations on 206 patients selected from 2,000 insane women, with the following conclusions:

In selected cases 33 per cent., and in unselected cases 5 per cent. may be expected to recover mentally.

It is my opinion that the per cent. of improvements and recoveries depends entirely on the selection of the cases, and in those patients where the mental organization is defective and when the psychosis is of the degenerative type, the per cent. of recoveries following surgical operations will be very small.

Conclusions:

1. Pelvic disease is often associated with mental disease, and may be a factor in its etiology, but seldom, if ever, the sole cause of insanity.

2. Pelvic diseases and menstrual disorders are not associated with any particular characteristic psychosis.

3. There is no apparent relation between the intensity of the mental disturbance and the severity and extent of the pelvic disease.

4. Pelvic diseases in insane women should receive the same treatment when practicable as in the sane, and for the same reasons.

5. Surgical operations on those of unstable

and defective mental organization, and on those hereditarily predisposed, will usually result unfavorably and leave the patient in a worse mental condition than before the operation, and this is particularly true when there is no local pelvic disease.

6. The best results from surgical operations may be expected in the hysterical and those especially disturbed at the catamenia.

COCCYGDYNIA—CASE AND SPECIMEN.*

By A. R. SHANDS, M. D., Washington D. C.

I have given the above title to my paper because of the fact that it was with the hope of affording some relief from the apparently excruciating and persistent pain in the region of the coccyx of the case under consideration, and not that any such condition was suspected to exist as the operation revealed. My diagnosis was coccygodynia, and not caries of the coccyx, as proved to be the case, as shown by the specimen here presented. The report is given with the hope that the discussion will throw some light upon this case that presented so many obscure conditions, in order that in future it may aid in diagnosing with some degree of accuracy should any of us encounter such a case, and thereby afford more prompt relief than was done with my unfortunate patient. I do believe that there must have been some pathological connection between the suffering of this patient, which had existed several years, and this carious bone, although she had been under the care of very skillful physicians, all of whom had always attributed her suffering to hysteria and had treated her accordingly, with absolutely no relief of her condition.

Miss B., age 22. Family history excellent, parents living in perfect health; has also several adult sisters and brothers living. No history of any of her people being of a nervous temperament. She was a perfectly healthy child until sixteen years old, when she had a very severe case of diphtheria, after which I am told that she was never very strong. Her illness, about to be described, began about two years after the attack of diphtheria.

In August, 1897, I was asked by Dr. Henry

* Read before American Orthopedic Association at its fifteenth annual meeting, held at Niagara Falls, N. Y., May 11-13, 1901.

D. Fry, of my city, to examine her spine, as it was thought she might have some disease of her vertebral column. I found her to be an unusually well-developed woman, with no organic disease except a decided heart murmur, which I was told had never given her any especial trouble. At the time that I first saw her she had been confined to her room and in bed most of the time for about two years. Her favorite position in bed was on her side, with her knees pressing against her abdomen, heels in her nates, chin on her sternum, and her entire spinal column arched backward, very much like a cat on a rug before a warm fire on a cold day. She had been in an extremely nervous condition during this two years, and was, so she said, never free from pain in some part of her body, and often in many places at the same time. At times her pain was most severe in her stomach. At such times she would take no food. At other times it would be most severe in her abdomen, especially in her pelvis. She had always been regular in her menstruation. At times she would be very constipated, and at other times just the opposite would be the case. Headache and nausea would sometimes be almost constant for months at a time. I was told by her physician that on one occasion she vomited almost constantly for a month; during this time she was nourished altogether by enemata. At this time it was suspected that she had a cancer of the stomach, until the vomiting stopped as suddenly as it had come on, and again she took food freely with a relish. For weeks at a time she would scarcely sleep at all; fits of low spirits were common, also fits of laughing and crying, first one and then the other; her manner during these two years was eminently that of a hysterical person. I happened to see her on one occasion have a coughing spell, which was more like the barking of a dog than a human cough; this cough would be incessant for hours, and was only relieved by a hypodermic injection of morphine, but would return just as soon as the effects of the morphine wore off. She had always been opposed to the use of morphine, and it was with difficulty that she could be persuaded to allow it to be given to her. This attack of coughing lasted for three days and stopped as suddenly as it came on, never to return—there always being something new to develop, such as difficult breathing, almost like an attack of asthma; a choking sensation, etc.

Upon examining her spine, I found it to be perfectly flexible in all directions, with no evi-

dence of disease whatever or deformity of any description; but there was not a spot on her spine from the coccyx to the base of her skull that was not apparently painful on pressure. It did not appear to be any more so at one point than at another.

My *diagnosis* was a *hysterical spine*, for I could find nothing that led me to believe but that her painful spine was only one of the many hysterical conditions that had existed all along. I wish to especially emphasize, however, that the pain in her spine was the only condition that had always been present, there never being a time that pain could not be produced by pressure on a particular spot. The physicians—and there had been many—informed me that she had had every form of hysteria known to them. I advised the use of the Paquelin cautery to her spine. This was done freely, but with no result.

I saw nothing more of the patient until January, 1899, about eighteen months after my first examination. At this time I was consulted because she was suffering intense pain in the region of the coccyx. The pain had been severe for several months, so much so that she could not sit. I found that pain could apparently be produced by pressure at any point along the spine, but much more severe in the region of the coccyx. There was nothing that I could see or feel to account for the pain being more severe at this point; there was no redness or infiltration of the soft tissues to lead me to believe that any disease existed in this bone, but as this seemed to be the central focus of the pain, I advised the removal of the coccyx. This advice was readily accepted, and accordingly the bone was removed through the sacro-coccygeal synchondrosis.

The specimen that I have shown you presents the following peculiarities. From the distal end of the bone there extends an osteophyte 1.4 of an inch long and about 1.8 of an inch thick, with a carious cavity involving about half of the new bony growth. On both sides of the last section of the coccyx there is another osteophyte; one about the size of the one described, and the other about half that size. In the proximal section of the coccyx there is a cavity about the size of a pea.

The wound healed by primary union, and the patient did well; the pain in the region of the coccyx was entirely relieved, and the spinal irritation was much benefited. It is a great regret that I had not an opportunity of seeing the final result of my operation and the care that I had

bestowed upon her. The patient died about four months later from a trouble independent of the spinal affection. She really died of inanition, the old nausea having returned, which prevented her from taking nourishment through the natural channel. She emaciated very rapidly, which, added to her weak heart above referred to early in this report, caused her death.

In conclusion, I wish to inquire of this Association whether it is possible that this irritable spinal condition was started in the first instance by a reflex spasm proceeding from the coccygeal nerves which may have been irritated by the caries of the coccyx. The diseased condition and abnormal appearance of the bone surely indicates a very slow diseased process. The spinal irritation preceded all of the various hysterical symptoms that I have given, and there were many that have not been mentioned. There was no history of the patient having ever been considered of a nervous temperament until after she began to suffer with pains in her spine. If it was the case that this condition was caused by the disease in the coccyx, it is surely reasonable to believe that an early removal would have saved her years of suffering and probably have prolonged her life.

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and unirritating. If highly acid, the bicarbonate, citrate, or acetate of potash is useful. The urine should not be too alkaline for fear of precipitation of phosphates and the possible formation of calculi. Keep the bowels well open with laxative mineral waters or epsom salts. Unless the urine is excessively acid, the patient may be given benzoic acid or buchu in infusion. When pain is great, hyoscyamus, belladonna, hops, and camphor should be tried. Opium should be omitted, if possible, but if nothing else will control the pain, it is best administered in suppositories inserted in the bowel.

As soon as the acute symptoms have passed, or if the case comes to us in its second stage, then the drugs to be preferred, as far as internal treatment is concerned, are balsam of copaiba, oil of sandal wood, and tar. These are the drugs generally prescribed; but we have had much better and quicker results from saw-palmetto and large doses of *uva ursi*. Such treatment may, and often does, suffice for the milder cases, but in the severer forms it often fails.

The last-named remedies are of the greatest benefit when employed in connection with local treatment, which is the sheet-anchor in all chronic varieties of cystitis. This consists in douching out the bladder with medicated solutions. Even thorough irrigation with plain warm water aids very materially in giving the patient relief of distressing symptoms. Many agents have been recommended for local application; among the older being decoction of oak bark, solutions of tannic acid, carbolic acid, potassium chlorate, acetate of lead, sulphate of zinc, alum, and nitrate of silver, followed later by iodoform, permanganate of potassium, and others.

The use of iodoform in this disease suggested to us the use of *europfen*, which we have now employed in upwards of fifty cases with good results, except in the small percentages in which surgical measures were required. As to the curative effect of this drug, it is all we could ask for or expect in this disease, but it has one disadvantage—that of precipitating to the bottom in an aqueous mixture. This, however, can be overcome in several ways. We employ it in cystitis as follows: The patient lying on his or her back in the most favorable light, a soft rubber catheter is introduced and the bladder emptied, if the urine has been retained; if much pus, mucus, blood, and debris are present (which is often true in long-standing cases), and plug up the instrument, I inject plenty of warm water

EUROPHEN IN THE TREATMENT OF CYSTITIS AND URETHRITIS.

By C. W. CANAN, M. D., B. S., Ph. D., Orkney Springs, Va.

The above diseases are of so common occurrence that we believe a review of their treatment will be of interest to the profession. Because of the anatomical relations of the parts they are frequently seen together; this is especially true where one or the other has been allowed to assume a decided chronic form. Few conditions cause greater suffering and few are as prone to render the patient susceptible to a second attack. They are also likely to leave intractable troubles behind, such as sterility, gonorrhoeal rheumatism, and chronic prostatic troubles. Therefore, the treatment should be as thorough as possible.

In *cystitis*, in its acute stage, the patient should be put to bed (except in mild cases), the skin made to act gently, and a light, unstimulating diet prescribed. Render the urine bland

through the catheter until the organ has been properly emptied. I then slip the end of the catheter over a piece of glass tubing three or four inches long, in which is inserted a nozzle of a large hard rubber dressing syringe filled with the medicated solution, the point of the nozzle being found to fit in the end of the glass tube nicely. Owing to this arrangement, I can watch the outflow, and if the europen precipitates I remove the syringe, shake the fluid thoroughly, and finish the injection. Another very excellent addition to this appliance is a short piece of rubber tubing to fit over the end of the glass tube; the opposite end can then be slipped over the nozzle of a household or fountain syringe, and the injection watched as before. The quantity of europen and the medium used should be governed by the indication in each case. Ten grains of the former and two ounces of the latter are the proportions generally used. Gentleness and cleanliness are two essential elements in treating cystitis. Forcible injections or extreme distention are very painful in some cases, and lay the foundation for grave troubles. By using the dressing syringe as above set forth the operator can control the flow at will. When the urethra and bladder are extremely sensitive (as is often the case) and the introduction of the catheter or injection painful, one grain of morphine may be added to the solution of europen with beneficial results, or the urethra may be filled with a two per cent. solution of cocaine. In nervous, sensitive, hysterical patients an anodyne suppository inserted up the rectum a few hours before the procedure is excellent treatment. In ordinary cases of cystitis, not due to foreign bodies or stone in the bladder, one injection with europen with proper internal treatment and rest will be sufficient to produce a cure; but in long-standing chronic cases, in which the lining of that organ has been more or less destroyed, or ulceration has taken place, it may require a number of such injections.

Cases are occasionally seen in which the bladder is so sensitive that it will not retain a spoonful of urine; a few drops being sufficient to bring on tenesmus and terrible agony. In such cases it is better to introduce a soft rubber catheter, or one made especially for this purpose, and I leave it in place to prevent any accumulation of urine whatever. It is superfluous to say that a catheter so retained should be removed and cleansed often, and great care should be taken in thoroughly washing the parts before introducing any instrument. Much good will result

from large hot water douches in the vagina in the cystitis of females.

In urethritis, specific and non-specific, the treatment to be effectual must be carefully adapted to the condition in which the patient presents himself or herself. We claim that urethritis is simply a catarrhal inflammation of the urethral mucus membrane, like a catarrh of any other mucus tract; that both the specific and non-specific forms are due to some micro-organism which may or may not be gonococcus, and that the treatment to be successful must consist in the use of both astringent and anti-septic remedies.

In the early stage of this disease put the organ at rest absolutely; forbid genital excitement; render the urine bland and non-irritating; demand abstinence from stimulants, especially malt liquors, and direct a certain line of diet. If the patient cannot leave his work, have him abstain as much as possible from exercise. As to food, highly-spiced dishes, salads, curries, salt food, and articles difficult of digestion should be avoided. The amount of meat should be reduced; vegetables can be taken freely, except asparagus; tea and coffee in moderation; tobacco may be allowed in small quantities in those addicted to its use. Drinking freely of water or flaxseed tea should be encouraged. The alkaline mineral waters are sometimes useful. Perfect cleanliness is essential, not only to comfort, but to recovery. If the trouble is a specific gonorrhoea the pus accumulating about the glands should be removed, and if irritation occurs, the parts should be lightly dusted with europen and boracic acid, equal parts, and the organ hung loosely in a pocket containing absorbent cotton and fastened to the underclothing or a suspensory bandage. Europen may be dusted into the bag over the cotton, to deodorize the secretion and prevent irritation and sores from forming on the prepuce and glands. One good feature of europen in this disease is that it has no tell-tale odor.

To relieve the chordee, many drugs have been recommended, but few of them are reliable. Opium is one of the best, but its by-effects, especially on the bowels, contraindicate its use, except when absolutely necessary. Large doses of spirits of camphor are sometimes beneficial. We have found three-grain doses of monobromate of camphor with tincture of hyoscyamus of value. But, on the whole, bromide of potassium in thirty-grain doses, given at three, six, and nine o'clock every evening, will gradually

control this troublesome condition. It may be given every three hours throughout the twenty-four until the patient is well under its influence, when a dose or two every evening will be sufficient. Another very simple and excellent procedure for the relief of chordee is to have the patient immerse the penis and testicles in a bowl of hot water for fifteen minutes before retiring, care being taken not to allow the water to become cool, but keeping it as hot as can be borne. Most all patients clamor for injections from the beginning, but I am more and more convinced by experience that all local meddling during the acute stage is injurious.

The occasional success I have observed from early injections I am persuaded are exceptional or illusionary, or the case was the recurrence of an old lingering gonorrhœa. When the disease has reached its height and begins to decline, as evidenced by a decrease in all the acute symptoms—viz., the smarting and swelling of the prepuce and urethra, and the disappearance of the chordee—then antibleorrhagics and local treatment will do good. As the acute symptoms decline, antibleorrhagics have their place in the treatment if prescribed at all. Of these there are many, the principal of which are cubebs, copaiba, and oil of sandal wood. Dr. Keyes' rule here should always be kept in mind, "If these remedies are digested, they do good, but when they are not digested they do harm." When all signs of the acute inflammation have passed away in general, and the process tends to localize itself in certain portions of the urethra, local treatment is then indicated. Drugs said to have curative power in this disease when used in the form of injections are as numerous almost as patent medicines, and many of them are worthless, while others are harmful.

In the last few years we have almost exclusively confined ourselves to the use of euophen, unless some special indication forbids its application. The strength we prescribe ranges from two to ten grains per ounce, according to the indications of individual cases. I employ the same quickly-constructed instrument as described in the treatment of cystitis, except that the soft rubber catheter and the glass tube are enlarged near the end to fill up the meatus of the urethra. If there is a cystitis as a complication, I use the complete instrument as mentioned above. This instrument is also used in old chronic cases of posterior urethritis, where the patient has considered himself cured and the running has returned upon the slightest in-

discretion. These cases often go from one physician to another, and still the trouble is not cured permanently, because the disease germs become pocketed in the folds of the mucous membrane of the post-urethral region, and the slightest irritation brings them into activity. In these cases I first throw into the bladder ten grains of euophen suspended in two ounces of boiled water. The patient is then directed to retain this for a few minutes, while I pass the largest catheter that I possibly can. This is at once withdrawn, and the patient made to void the injected solution. If a good-sized instrument can be passed, one large enough to put the mucous lining of the urethra well on the stretch, one treatment is sufficient to effect a cure. In many cases of posterior urethritis all that is required is to pass a large instrument, and then inject a solution of euophen, enough to balloon the urethra well, and have the patient retain it for a short time. These injections should be repeated every third day by the physician until the cure is complete. The patient should never be allowed to use euophen injections himself. In all the milder forms of urethritis, the simple use of this remedy will be followed by a permanent recovery.

Correspondence.

Ventral Fixation of Uterus for Anteflexion with Great Dysmenorrhœa.

RICHMOND, VA., July 2, 1901.

Editor Virginia Medical Semi-Monthly:

I write to report a case in which I made a new (to me) application of an old operation.

On the 19th of April, 1901, at the Virginia Hospital, Richmond, I performed a ventral fixation of the uterus (in case of Miss J.), to remedy *anteflexion* of this organ, which was attended each month with excruciating dysmenorrhœa. The operation succeeded well, but it is yet too early to report results beyond the fact that they appear favorable.

I may mention incidentally that I removed the appendix at the same time that I did the "ventral fixation." The appendix was a very long one—about seven inches in length—and it was attached by the meso-appendix throughout its whole length.

I was assisted in the operation by Drs. A. L. Gray, Charles M. Edwards, Charles B. Brock, and William West.

I am not aware that this operation has ever before been resorted to for the relief of *anteflexion*, although I have not had opportunity of doing more than hastily glancing over the pages of a few standard works on gynecological operations, in which I fail to find mention of the operation for this special condition. I would be glad to be informed if I am correct in this surmise. Very truly yours,

JACOB MICHAUX, M. D.

323 East Franklin street.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

The third annual meeting was held at St. Paul, Minn., June 4th and 5th, *President*, Dr. James P. Tuttle, New York, in the chair; Dr. William M. Beach, Pittsburg, Pa., *Secretary-Treasurer*. After the reading of the minutes of the previous meeting and receiving the treasurer's report, the Society entered upon scientific business.

At the conclusion of the scientific business, the following *officers were elected* to serve during the coming year: *President*, Dr. Thomas Charles Martin, Cleveland, O.; *Vice-President*, Dr. George J. Cook, Indianapolis, Ind.; *Secretary-Treasurer*, Dr. William M. Beach, Pittsburg, Pa.; *Executive Council*, Drs. J. M. Matthews, Louisville, Ky.; James P. Tuttle, New York, N. Y., and J. Rawson Pennington, Chicago, Ill.

Prof. Dr. Sonnenberg, Berlin, was elected to honorary membership in the Society, on motion of Dr. William M. Beach, Pittsburg.

The Society adjourned to meet at Saratoga, N. Y., in June, 1902.

The following is a brief synopsis of some of the more important papers presented during the session:

Malignant Tumors of the Rectum.

Dr. James P. Tuttle, New York, N. Y., read the paper. In his consideration of this subject, the essayist divided malignant tumors of the rec-

tum into four classes—connective, epithelial, muscular, and irregular tissue growths.

It was stated that with those in his own practice, together with those mentioned in the literature of the subject, there were 29 of the melanotic type and 14 of the non-melanotic.

Sarcomas occur in the rectum as irregular deposits beneath the mucous membrane, in shape being round, elliptical, and sometimes resembling a hypertrophied tonsil. They rarely, if ever, assume the smooth plaque-like form of deposit, such as is seen in carcinoma. The surface being always rough, unequal, "muriform," and the mucous membrane movable over the growth in its earlier stages, is a condition which distinguishes them from carcinoma. They originate in the sub-mucosa, and as they grow may appear as sessile tumors, and eventually develop a distinctly polypoid shape. They may also appear as a general fibrous thickening of the wall, and be mistaken for a simple inflammatory stricture.

The mucous membrane covering sarcomas is comparatively normal, although if the tumor becomes very large the membrane may become congested, œdematous, or ulcerated, and even adherent to the growth through inflammatory processes.

Sarcomas in the rectum may occur single or multiple, and vary in size from that of a hazel nut to a good-sized orange. One case reported was as large as a cocoanut.

Sarcomas of the rectum present a variety of colors, generally that of the normal mucous membrane, although sometimes they are dark red, grayish black, bright red, pale yellowish pink, or as black gangrenous masses. Often in the multiple form, the different tumors will present varying appearance.

Sarcomas may occur at any portion of the rectum or sigmoid, but the majority are situated low down near the anal margin.

Sarcomas differ from the carcinomas by their rapid growth. Differing from sarcomas in other portions of the body, these sarcomas are said to have a distinct tendency toward ganglionic infection.

Metastasis is one of the chief characteristics of sarcomas of the rectum. If the growth is primary, all possibility of metastatic deposit should be eliminated, or else the operation will be of no avail.

A complete resume of the histology was given under the following heads: Round or globe cell sarcomas, spindle or fusiform, giant cell, alveolar, and mixed.

Melanosis does not alter the type of the tumor or change the character of its component parts. It takes place in all types, and may involve but one part of a tumor, or only one or two tumors where they are present in multiple form.

Sarcomas of the intestine always develop from submucosa, and ordinarily do not affect the mucous membrane until, by pressure, tension and ulceration, through friction and infection by the fecal mass, it may become involved. The causes and influences which bring about the production of sarcoma are as little known as those of carcinoma.

Age cannot be proved to have any direct influence, although it occurs more often late in life, and there is apparently no relationship between the sexes and this disease.

Symptoms are at first very vague. There may be a sense of fullness, or the feeling of the presence of a foreign body, or the first symptom may be bleeding and discharge of mucus.

The protrusion of sarcomatous tumor is more frequent than that of carcinoma, but less so than in other forms of rectal neoplasms.

There is no odor peculiar to sarcoma. After ulceration has occurred and there is a production of pus, the odor changes to that of decomposing tissue, but never assumes that peculiar, characteristic, and disgusting odor which is found in carcinoma of the rectum.

If the sarcoma is low down, and involves the sphincter, producing traction and pressure, the patient may suffer considerable pain. But if it is high up, and of an infiltrating form, the patient may go to the very door of death without any knowledge of its existence.

The state of the bowels in sarcoma of the rectum varies according to the type of the tumor. There may be either constipation or diarrhoea. The latter may be caused by the mobility of the growth and its location near the margin of the anus. Constipation may be caused upon mechanical grounds. Flatulence, indigestion, and loss of appetite are associated with sarcoma of the rectum, as they are with all other neoplasms of this organ.

Cachexia is not well marked. Reflex digestive disturbances are noted. Decrease in strength, loss of flesh, swelling of the feet and abdomen, rapidly succeed one another when the sarcoma is once well developed.

Dysuria is frequently present. The lungs and pleura may become affected.

The diagnosis of this condition lies between carcinoma and villous tumor. It is less sessile

than carcinoma, and less pedunculated than adenoma. It is more firm than adenoma, and has a less degree of induration than carcinoma.

In its attachment, its roots do not spread out, producing that general infiltration of the mucous membrane that one finds in carcinoma. Its attachment is very abrupt. To touch it is more undulating and irregular than carcinoma, but has not the granular and dendritic divisions which one finds in villous tumor, and in adenoma. The latter occur largely in children, whereas sarcoma is a disease of middle or advanced life.

When it is a question between sarcoma and multiple adenoma, the multiplicity of the growths, the excessive diarrhoea, together with the comparatively fair condition of the patient's health, may be mentioned upon the side of adenoma.

Between sarcoma and carcinoma, the distinct odor of the latter is enough to make the decision positive.

In the early stages of the disease, the fact that mucous membrane moves easily over the growth distinguishes it almost positively from carcinoma.

The final test depends upon the microscopic examination of a section from the real substance of the tumor itself.

Personally, the reader was opposed to making an incision to obtain the section unless the case was an operable one and the patient consented to an operation if the microscopic examination showed a necessity for one.

The treatment of the disease consists in the radical removal of the growth. A ligature to pedunculated sarcomas ought never to be considered. If the growth is single and in the wall of the rectum, a posterior proctotomy may be done. If it is diffuse, involving the entire circumference of the rectum, total excision of the organ is the only recourse.

While there is some evidence of the value of the serum therapy in the treatment of the sarcomas elsewhere, the advocates of this method lend no encouragement by their results in the treatment of this condition in the rectum.

Artificial ani may give great relief in carcinoma, but it neither relieves nor checks the progress of sarcoma.

President's Address.

The president, Dr. James P. Tuttle, of New York, in his annual address, discussed the various phases as to whether or not it would be ad-

visible for the American Proctologic Society to continue as an independent association, or apply to the American Medical Association for admission as a proctologic section. He spoke at length of the advantages of meeting at the same time and place of the assembling of the great medical body. He spoke of the desirability of being brought into closer contact with the general profession, from whom they had much to learn, and to whom they have many debts to pay.

The profession should be educated to realize the fact that there is more proctology than they now believe. The average practitioner's conception of this subject is that it consists in tying off piles, cutting through fistulas, and stretching the sphincter muscles for fissure.

Year after year the speaker stated that men attended his clinics who said they were determined to make a specialty of rectal diseases. They expected to become accomplished specialists in from three to six weeks. They wanted to see as many operations for piles as possible during that time. They didn't mind if a fistula or fissure was thrown in for good measure, but "piles" was their conception of proctology. The most carefully prepared lecture on demonstrations of new methods of diagnosis and the teaching of intestinal pathology are all lost upon them, for they are there to learn to treat *rectal diseases*—i. e., *piles*. When they have spent three or four weeks in this deep and profound study these men go back home full-fledged rectal specialists, and sometimes are made professors of the branch in some provincial college.

The speaker did not want for one moment to reflect upon those noble practitioners of general medicine who attend post-graduate schools intent upon learning how to diagnose and treat disease. All honor is given to these men who know their deficiencies; who sacrifice so much to keep abreast with the progress in medicine, and who go back to their homes and unpretentiously give their patients the benefits of the knowledge gained by honest study.

The essayist scored the mushroom specialist and the advertising charlatan, who, he said, were molding public opinion upon proctology. They publish their advertisements and scatter their pamphlets everywhere, until the public commence to make their own diagnosis. The family doctor was said to be partially to blame for this condition of affairs, as he so often diagnoses these conditions without examination.

The advertising charlatan would have the public believe that the regular physicians never

make a study of rectal disease; that his instruments are patented, and that successful methods of treatment are known only to him.

The reader stated that it was the aim of the American Proctologic Society to show to the medical profession, and through it to the public, that there is something more in the subject; and questioned if there was a better way of accomplishing this than by interesting the American Medical Association sufficiently in it to establish a proctologic section, where they could meet the general practitioner, tell him what they are doing, and learn from him his needs.

The reader favored the attempt to organize a proctologic section.

Another point considered in the address was the qualifications for membership in the Society, and in closing the speaker said:

"All over the country there are springing up specialists in rectal diseases, made by short terms of study at some post-graduate school, or by being elected professors of this branch in some small college. As a rule they are without experience or learning in the branch, and accept the position simply on account of the title and emoluments. On the other hand, there are a large number of general surgeons whose hospital appointments require their doing large amounts of rectal surgery. The first class will be knocking at your doors for admission, but they bring no offerings in the fruits of their labors. The latter class will only come by invitation, but when they do, they will bring a rich experience and many practical observations gained in general surgery, but useful to the specialist.

Holding a chair in some little medical college does not entitle a man to membership in this Society, and being a general surgeon or practitioner should not debar him. Let us select our members with such care that in the future we can never wish that this or that one had not been let in."

It was moved that the president's address should be open for discussion.

On motion of Dr. Martin, the chairman was authorized to appoint a committee to consider the president's address, and select a time for its discussion. At a subsequent session the committee reported the following resolution:

Your committee would recommend that a vote of thanks be tendered Dr. Tuttle as a recognition of his valuable contribution to the literature of malignant disease of the rectum.

Your committee are agreed that this time is inopportune for negotiation for admission to the

American Medical Congress, and that at present it is inadvisable to attempt the organization of a section on proctology in the American Medical Association. Therefore we recommend the adoption of the president's suggestion, that our next meeting be at the time and place of the next meeting of the American Medical Association.—Joseph M. Matthews and Thomas Charles Martin, *Committee*.

When the subject was opened for discussion, President Tuttle moved the adoption of the resolution, thus reversing the opinion expressed in his paper. He had come to the conclusion that the interests of the specialty could be best subserved by remaining an independent society. Dr. J. M. Mathews, of Louisville, Ky., also took this stand. After some further discussion the resolution was adopted as read.

Disease of the Sigmoid.

Dr. George B. Evans, Dayton, Ohio, read a paper on this subject.

The essayist discussed the question as to whether or not the rectum was the receptacle for feces, or whether the latter is arrested, detained, and accumulated in the sigmoid flexure of the colon. The reader inclined to believe that the rectum was the receptacle.

From its situation and anatomical relations, the reader was convinced that the sigmoid is oftener the seat of obscure abdominal diseases than has generally been suspected. In appendicitis there is often reflected pain over the whole abdomen, often in the left iliac region over the sigmoid. Now, if this is true, the converse is also true. This point was illustrated by reference to a patient who had a distinct history of appendicitis. The condition was promptly relieved by flushing the sigmoid and colon with large quantities of hot boracic solution. This treatment was advised in all cases of supposed appendicitis. It can do no harm, and might do good.

Patients should be examined: First, by palpation and percussion, both in recumbency with thighs well flexed, and in the erect posture; second, digital; third, by a combination of the two; fourth, by ocular examination, using the tubular speculum; fifth, if the speculum should fail to enter the sigmoid, then use the Wales bougie.

The reader was confident that many of the so-called catarrhal conditions of the bowels are congestion, if not inflammation, of the sigmoid, attended with large discharges of mucus, accompanied with pain over the abdomen. In these

cases the sigmoid and colon are washed with hot boracic solution, using as much as one or two gallons. If the results are not satisfactory, 3 ounces of a 50 per cent. solution of fluid hydrastis are added and applied through a Wales bougie.

After the inflammatory changes have taken place the task is more difficult. If we find the stools mixed with pus and mucus there is ulceration, and if the rectum is healthy, the trouble will be found in the sigmoid. A case was reported illustrating this point, which yielded readily to the flushing method.

Moderate exercise and a liberal and nutritious diet of milk, soft boiled or poached eggs, and plenty of fresh air and sun baths are valuable adjuncts.

Syphilitic ulceration should be treated constitutionally and locally as described. The incunation method alternately with the iodides in conjunction with the passage of the bougie is indicated. If the case be an operative one, it is a question whether there should be a total resection with end to end anastomosis, or a resection and then an anastomosis by passing the distal end of the sigmoid through a slit in the rectum, holding the sigmoid *in situ* by means of traction sutures passed through the muscular walls of the sigmoid, leaving the sutures long enough to emerge from the anus clamped by long artery forceps across it. If neither of these methods be practical, resort must be had to colostomy. The latter is palliative; the former radical, and the question is who will advise it; when and under what conditions would it be justifiable?

The reader was also fully convinced that grippe was an important factor in sigmoiditis.

Recto-Colitis.

Dr. William M. Beach, Pittsburg, Pa., read a paper on this subject.

The essayist described recto-colitis as a condition of the rectum and colon that generates functional derangements consequent upon varying degrees of inflammation of its mucous membrane. A clear exposition of the anatomic elements of the gut and its auxiliary structures was given.

Omitting malignant diseases, recto-colitis was considered under the following stages: Congestion, atrophic catarrh, hypertrophic catarrh, and ulceration.

Simple congestion, due to engorged blood vessels, may be ephemeral, and express itself lo-

cally in the form of dysentery and tenesmus, and the excretion of an enormous quantity of mucus. This condition, if allowed to continue, becomes chronic, developing usually the hypertrophic catarrh: Epithelium is shed, valves swollen and thickened, narrowing of rectal straits, diarrhœa alternating with constipation.

Atrophic catarrh is usually accompanied by the constipated habit; dry, hard stools, and minute anal fissures. Secretions are insufficient on account of gland impairment. Atrophic recto-colitis is rare.

The ulcer is the culmination of the inflammatory process, and in the experience of the reader rarely occurs above the sigmoid flexure.

The symptoms of recto-colitis are (1) local or physical; (2) constitutional or rational, and the reader described them fully.

From the standpoint of the proctologist, the question was asked, "*Is chronic recto-colitis curable?*" To answer this question it became necessary to study clinical experience. The reader called attention to cures reported by Matthews, Martin, and other proctologists, and referred particularly to one type, congenital or functional narrowing of the recto-sigmoid strait. In many of these cases the spasm is so strong when the instrument touches the inflamed surface that the strait is entirely closed; in others there is a prolapse of the sigmoid. A case was reported which had been referred to the reader by a neurologist. Examination revealed piles, and proctoscopy revealed a very sensitive rectum covered with glairy mucus; the sigmoid strait narrow and spasmodic with great pain at the upper part of the sacrum. The treatment consisted of a nightly administration of a saline; a daily injection of hot water: then, through the proctoscope, a mopping of the entire surface with sweet oil, and then through a narrow tube attached to a Davidson syringe, a half pint is thrown into the colon, while the patient is in the Martin position. After peristalsis and tenderness subside, mildly astringent solutions are sprayed and rectal massage given. The reader had had most excellent results with the proctargol spray.

Recto-colitis, due to mechanical obstruction or irritation, can only be relieved by removal of cause; to clear the field so that the remedies applied locally might be efficacious.

Abrasions, pin-point denudations of epithelium should be touched with pure carbolic acid or solution of silver nitrate. If the mucosa presents a deeply injected appearance, bland reme-

dies were thought to be more efficacious, such as albolene. Valvular hypertrophies were reduced by the use of a two-bladed divulsor wrapped with cotton.

Internal medication was necessary to correct intestinal secretions and to allay neural symptoms.

Recto-colitis, due to polypus, hemorrhoids, fistula, or stiff valves, is to be cured by the removal of these conditions. In conclusion, the essayist said:

Our discussion of the treatment of recto-colitis consists in:

1. That it is a condition of the rectum and colon of varying degrees of inflammation.
2. A knowledge of the anatomical bearings of the rectum and colon is necessary to understand the symptoms and reflexes.
3. The symptoms are local and systemic.
4. Recto-colitis may be catarrhal or ulcerative.
5. It may be acute or chronic.
6. When dependent upon polypus, hemorrhoids, fistula, etc., the cure depends upon their removal.
7. Chronic recto-colitis, due to altered secretions, anæmia, and congenital narrowing of the sigmoid strait, is difficult to cure.

Anal Pockets.

This paper was read by Dr. Louis J. Krouse, Cincinnati. The Doctor first entered into a very exhaustive study of the so-called anal pockets, in which he gave the results of his own observations and those of other investigators. He discovered by his researches that these pockets were present in the rectums of the living to the extent of 80 per cent., but that they were entirely absent in the dead. In conclusion, he said:

That the so-called anal pockets may be the cause of certain diseases located in the lower outlet of the bowel I cannot gainsay, but I believe that they are most likely the frequent predisposing cause of an irritable ulcer of the anus.

If we examine the rectum in the quiescent state, when the bowels are empty, we find that the anus is closed; the anal valve and its corresponding sac are absent. But when the bowels move, the anal canal is opened, and the anal valve becomes prominent, the same as would occur had an anal speculum been introduced and opened. Should a hardened fecal mass pass through the anal outlet, with a prominent pseudo-valve protruding, then this valve would

most likely be caught by the moving mass and possibly be torn, producing what might be termed an irritable ulcer of the anus.

The Treatment of Rectal Prolapse.

Dr. J. Rawson Pennington, Chicago, Ill., read a paper on this subject.

In considering the treatment of rectal prolapse it is essential, first, to recognize the pathologic condition. The object of treatment is: (1) Reposition of the prolapse; (2) its fixation in the normal position; (3) prevention of recurrence.

He believes that some of the most important factors in the production of rectal prolapse are to be found within the intestinal canal, and considers the *plica transversalis recti et sigmoideæ* as one of the most, if not the most, important causative factors. He continued by saying that various procedures have been devised for the treatment of this malady, but to be successful, the operation selected must be determined by the variety and specific conditions of the prolapse; otherwise it will be a failure.

Of these procedures he mentioned (1) those having for their object the production of adhesive inflammation between the coats of the intestinal walls; (2) narrowing the anal canal; (3) amputation; (4) reposition and bony fixation; (5) reposition and intra-abdominal fixation (colopexy or sigmoidopexy); (6) Thur Brantz massage; (7) electricity; (8) ligature.

He recommended: (1) For prolapse of the mucous membrane only, reclining posture, adhesive straps, cauterization or amputation; (2) for reparable, non-ulcerated prolapse of all the coats of the rectum and colon invagination remove the cause, if possible, and try massage and electricity. Should these fail, then resort to colopexy; (3) for incarcerated irreparable ulcerated prolapse, circular resection, according to the technique of Mikulics and Nicholadoni. The operation of colopexotomy, procto-coecopexy, procto-sacro-coecopexy, procto-sarcopexy, Gersamy's twist and the circular suture of Thiersch are rarely indicated.

A New Method for the Removal of Hemorrhoids Under Local Anesthesia

Was explained by Dr. Thomas Charles Martin, Cleveland, Ohio. He stated that non-malignant anal growths could be removed painlessly without resort to general anesthesia by means of a technique which he would describe, provided it be performed by the trained hands

of an operator who thoroughly understands the principles of infiltration anesthesia, and who, furthermore, has been sufficiently persevering to master the difficulties encountered in the application of those principles to this operation.

Dr. Martin presented an instrument consisting of a hollow cone 3.25 inches in length, .75 of an inch in diameter at its distal extremity, and 1.75 inches in diameter at its proximal end. One quadrant of the cone is fenestrated. This is occupied by a movable blade with a serrated edge, which makes contact with the cone's serrated edge. The movable blade is sheathed in the cone when the jaws of the clamp are separated. When it is introduced it may be made to receive the pile without irregularly expanding the anus. The great essential to painless manipulation of the sphincter is the even distribution of pressure throughout its circumference.

The patient should be placed in the Sim's posture, and the light focused on the field of operation.

The different tumors being located, the summit of each should be infiltrated with a 1-10 of 1 degree solution of eucaine. A very fine needle should be employed. Care should be taken, or else, instead of effecting an infiltration of the structure, the anesthetic may be driven at once into a blood space and directly into the circulation.

Each pile to be operated upon is seized by a curved hemostat, which should be surrendered to an assistant, who should radiate it from the anus and well out of the way of the operator.

The well lubricated clamp should now be introduced into the anus, with its blade pressing against the tumor, which is first to be removed. When the instrument is buried to its shoulder the fenestrum should be buried, into which the hemorrhoid is pulled. The pressure incident to the introduction of the clamp is often sufficient to express the eucaine from the tumor, so that re-anesthesia becomes necessary in order to perform the manipulation necessary to carry the tumor completely within the clamp. The clamp should now be closed and locked, and the growth cut away by means of scissors.

If secondary hemorrhage is feared, the wound should be locked-stitched with cat gut. If it be of the connective tissue or fibrous variety, the pedicle should be cauterized. The wound should be treated as in any other surgical procedure. The use of this clamp gives the operator a clean field and a clear view. The pile is "dry docked."

This clamp demands that the wound shall be linear in form and parallel with the axis of the anus.

This method of clamp operation is inapplicable to inflamed or thrombotic piles.

Local anesthesia is a surgical refinement; skill in effecting it may be acquired only by the exercise of patience and practice.

Dr. Geo. J. Cook, Indianapolis, discussed in a general way the employment of caustic agents in the treatment of hemorrhoids. His discussion was very thorough. The conclusion that he drew was that such agents for the most part should not be used, and that he recommended operative procedures whenever possible.

Foreign Bodies in the Rectum, with a Report of a Case.

Dr. Lewis H. Adler, Jr., Philadelphia, Pa., read his paper by title, but the case was deemed of sufficient interest to bring before the Society, even in the absence of the author.

A man 60 years of age was admitted to the wards of the Polytechnic Hospital, Philadelphia, December 1, 1900, with a history that he had been wearing for a long time an instrument which he called a pile-supporter, and that it had suddenly slipped within the bowel, and could not be removed.

Several attempts were made to remove the foreign body before succeeding. It was the handle and valve of a steam radiator pipe. The patient left the hospital the third day. Upon admission to the hospital the man's son informed the resident that his father was addicted to masturbation, and that he employed the wooden knob to further that habit. Subsequently the physician, who had referred him to the hospital, presented me with a large, bent piece of iron rod about fourteen inches long and one-fourth of an inch in diameter, which the patient had used for the insertion and withdrawal of the knob. The hooked iron rod and knob were exhibited to the Society by Secretary Beach.

Sanmetto in Uterine Congestion.

Dr. M. J. Halsey, Fowler, Ind., says: "I have found Sanmetto perfectly satisfactory, and I take pleasure in recommending it in cases of uterine congestion, having tried it and proved its efficacy in such a case. I have placed it in the foremost of my list of favorite remedies for congestion of any mucous membrane in the body."

Analyses, Selections, Etc.

Clinical Experience with Adrenalin.

Dr. Emil Mayer, Surgeon to New York Eye and Ear Infirmary, Throat Department; Fellow American Laryngological Association, etc., contributes a valuable paper to the *Philadelphia Medical Journal*, April 27, 1901. He says that the aqueous extract of supra-renal gland is perhaps the best culture medium known. Its instability, the involved method of preparation, its unsightliness, and the inexactitude of its various strengths tend to make us welcome a preparation that is exact, stable, and above all, clean. Dr. Jokichi Takamine undertook the task of isolating the active principle of the supra-renal gland. He obtained a substance in stable and pure crystalline form, which raises the blood pressure, and which he named "*adrenalin*."

The author has used solutions of adrenalin chloride, 1 to 1,000, 1 to 5,000, and 1 to 10,000. His cases were all rhinological. Blanching of tissues followed the application of the strongest of these solutions in a few seconds, and was very thorough. In no instance was there any constitutional disturbance. He has employed no supra-renal extract since for any purpose whatever.

The effect of the solutions was not altered by their change to a pink color; they were used for six weeks. Subsequently a small amount of chloretone was added to the fresh solutions, and now there is but slight change of color, and no floccules appear.

Thirty-five cases are reported in tabulated form, showing that the usual effect of the aqueous extract of the supra-renal gland was obtained. A few operative cases bled freely, but in every instance the hemorrhage was promptly checked by a second application of adrenalin. The adrenalin was used not only as a hemostatic, but for the relief of nasal congestion, as a diagnostic aid, and for the continuous treatment of acute inflammatory affections of the accessory sinuses.

The author arrives at the following conclusions:

1. Adrenalin solutions supply every indication for which the aqueous extract has been used.
2. They are sterile.
3. They keep indefinitely.
4. Solutions 1 to 1,000 are strong enough for

operative work; and 1 to 5,000 and 1 to 10,000 for local medication.

5. They may be used with safety.

In this connection it is interesting to note that Dr. E. Fletcher Ingals, of Chicago, also has had a very satisfactory experience with "adrenalin." In a paper entitled "Notes on Adrenalin and Adrenalin Chloride" (*Jour. Amer. Med. Association*, April 27, 1901), he reports that he experimented with solutions, varying from 1 to 1,000, to 1 to 10,000, of the chloride of adrenalin in distilled water or normal salt solution, and kept careful records until satisfied of its activity. In nine cases a very small quantity of a spray, of one part of chloride of adrenalin to 10,000 parts of water, was applied to the nasal cavities, with the effect of blanching the mucous membrane quickly, and in most cases causing contraction of the swollen tissues similar to that caused by cocaine. The first solution used was made with distilled water and caused smarting; normal salt solution was then used as the solvent with perfect satisfaction. The smarting may have been due to the presence of a small quantity of formalin, in which the atomizer had been washed just before use.

Experiments were also made with insufflations of a dry powder, consisting of 1.5 degrees (75 parts) each of bichlorate of sodium and bicarbonate of sodium; 3 per cent (150 parts) light carbonate of magnesium: one part of adrenalin to 5,000 parts sugar of milk. This powder cleared the nasal cavities when obstructed by swelling of the turbinated bodies, and diminished the secretions decidedly. A case of daily epistaxis was relieved by sprays of a 1 to 10,000 solution. Another of conjunctival congestion from overwork was entirely relieved by the instillation of a similar solution. The author has had equally satisfactory results in cases of conjunctivitis, laryngitis—acute and chronic—acute laryngitis with edema glottidis, acute coryza, chronic laryngo-tracheitis with acute exacerbation, and in preparation for operations upon the nose.

In conclusion, the following results are presented: This remedy will be of great value in the treatment of acute inflammatory affections of the nasal cavities, either in sprays of 1 to 5,000, or in powders of 1 to 5,000, or 1 to 2,500, sugar of milk. In acute coryza and in hay fever, in epistaxis from various causes, in acute inflammation of the fauces, solutions of 1 to 1,000 will have good effects. In acute or sub-acute laryngitis, solutions of 1 to 1,000, applied with mode-

rate force, will give very great relief. It appears probable that vocalists may obtain sufficient relief from congested cords, for at least two or three hours, to obtain normal efficiency in the use of the voice.

In a paper read before the Chicago Laryngological and Climatological Association, W. E. Casselberry, M. D., called attention to the fact that adrenalin chloride solution is clear, colorless, odorless, sterile, and stable, if protected from heat, light and oxidation; it is non-irritating to mucous membranes. When applied locally it exerts identically the same vaso-constrictor influence as the aqueous adrenal extract. Sprayed into the nostrils in the strength of 1 to 10,000 it produces a visible change from turgidity to compactness of the turbinated tissues, and a decided pallor of the mucous surfaces. In the strength of 1 to 1,000, or even 1 to 5,000, it has the power to limit hemorrhage during operations, and is an aid in the treatment of epistaxis. It may be substituted for cocaine in all cases in which an ischemic effect is desired—e. g., to facilitate inspection of the deeper recesses of the nasal cavities and to make them more accessible. Adrenalin has little or no cerebral stimulant effect, exciting no desire for more of the drug; hence there is little risk of habit formation.

The author expresses the opinion that adrenalin should afford relief in asthma associated with bronchitis and vasomotor paralysis, although he would expect little benefit from its use in asthma characterized by bronchial spasm. It may be formed into an ointment with vaseline, or mixed with stearate of zinc, powdered starch, or sugar of milk to make powders for nasal or laryngeal insufflation. The bibliography is very comprehensive, covering the literature of the subject down to the present date.

Treatment of Bright's Disease.

The following is an abstract of a paper by A. G. Blincoe, A. M., M. D., Bardstown, Ky., presented to the Kentucky State Medical Society during its May meeting, 1901:

The most important measure in the treatment of acute Bright's disease are rest in bed, warm bed covering and underwear, and attention to diet, skin and bowels. Milk diet is best. The patient should drink freely of water and other simple diluents. Alcoholic and irritating diuretics are not advisable. Saline purgatives and hot, wet pack are best for scanty urine and dropsy. Warm fomentations, or dry cups, fol-

lowed by poultices, may be used for the pain in the back. Wet cups should not be used in children, and all the usual antiseptic precautions should be taken as if used in adults. Blisters, besides being open to the same objections as wet cups, are inadvisable, as the irritant substances of which they are composed may be absorbed and cause increased renal irritation.

Uremic coma is to be treated by elaterium or croton oil, hot baths or hot wet pack, venesection, nitro-glycerine, hypodermoclyses, or entoroclyses. Convulsions may be controlled by inhalation of chloroform while waiting for the effects of other remedies. Bromides and chloral and the remedies mentioned for coma may be used. Morphine, hypodermically, the most reliable remedy. After the acute stage has passed supporting measures, with iron preparations in small doses, and heart tonics if indicated. Meat diet is not to be resumed until albumen disappears from the urine. Lactate of strontium is used for atonic condition of kidneys. In chronic forms many hygienic and dietetic measures should be used, with treatment of symptoms and complications as they arise. Small doses of iron, if there is anemia, nitro-glycerine for high arterial tension, digitalis in ten minim doses, with saline laxative for cardiac dilatation, shortness of breath, scanty urine, and local dropsy. For the minor uremic manifestations, such as restlessness, delirium, etc., and for the dyspnea and Chryce-Stokes' breathing of advanced arterio-scleroses, morphine is of especial value.

Summer Diarrhoea.

In the large class of summer diarrhoeas of children and adults, with griping in the bowels and flatulence, the use of *Listerine*, in doses varying from ten drops to a teaspoonful (with or without water), has a most salutary and pleasing effect. It can be administered at short intervals after eating, as soon as regurgitation, distention, or acidity occurs. Its action in arresting excessive fermentation is prompt; besides, it exerts a decided sedative influence on the mucous membranes of the stomach. The thymol, menthol, and boracic acid which, with the quota of alcohol necessary to their proper admixture, form the principal elements of *Listerine*, lend to this compound a special value in this class of cases.—*New York Medical Journal*

Book Notices.

Compend of Human Physiology. (*Blackiston's Quiz Compend No. 4.*) Especially Adapted for the Use of Medical Students. By ALBERT P. BRUBAKER, A. M., M. D., Adjunct Professor of Physiology and Hygiene in Jefferson Medical College, etc. Tenth Edition, Revised and Enlarged. With Illustrations and Table of Physiological Constants. Philadelphia: P. Blakiston's Son & Co. 1900. Cloth. 12mo. Pp. 270. Price, 80 cents net. Interleaved Edition for Taking Notes. \$1.25 net.

This "Blakiston's Quiz Compend. Series" has justly become about the most popular of such sets, being specially well prepared, after years of experience of the authors and numerous revisions of the books. They need only examination of their contents to prove the correctness of the claims that "these *Compends* are based on the most popular text-books and the lectures of prominent professors, and are kept constantly revised so that they may thoroughly represent the present state of the subjects upon which they treat. * * * They contain information nowhere else collected in such a condensed practical shape." We might suggest, however, that Figure I., attempting to illustrate the diagrammatic longitudinal section of the body, should be changed to one a little more accurate. Many an error has been perpetuated by a wrong drawing. The illustration of the liver in this drawing leaves a wrong impression upon the beginner's memory as to its relative position, shape, etc. Its relation to the diaphragm can be more accurately illustrated without injury to the diagrammatic purpose of the figure.

International Medical Annual. *A Year-Book of Treatment and Practitioner's Index.* 1901. Nineteenth Year. New York: E. B. Treat & Co., 241-3 W. Twenty-third street; Chicago: 199 Clark street. Small 8vo. Pp. 682. Cloth, \$3.

While this *Annual* was a little late in delivery to this office, it has not lost any of its value thereby. In the list of thirty-four "contributors" to this volume, while the great majority are familiar names as authors and contributors to former issues, we recognize some whose names for the first time appear on the title page. Although the majority of them are distinguished American writers, a number of them are foreigners, but none the less able contributors. These *Annals* are well up to date, and well present the latest plans of treatment, etc.

The section on *Pulmonary Tuberculosis*, by Professor C. Ruata, of Perugia, Italy, is a masterpiece. The treatment of pertussis by anti-diphtheritic-serum, accidentally discovered to be beneficial in whooping cough, while the serum was being used in a case of diphtheria complicated by whooping cough, is worth consideration. That part of the book devoted to new treatment is especially useful for the general practitioner, for in it will be found articles covering the whole range of medicine and surgery. This "International Medical" series becomes more valuable as years pass along, for during the years of publication each volume contains the advances in medicine of the year preceding publication.

The Medical News Pocket Formulary for 1901. By E. QUIN THORNTON, M. D., Demonstrator of Therapeutics, Pharmacy, and Materia Medica in the Jefferson Medical College, Philadelphia, etc. *Third Edition. Revised and Enlarged.* Lea Brothers & Co., Philadelphia and New York. 1901. Wallet-sized. Leather-bound volume of 287 pages, with pocket flap and pencil. \$1.50 net.

This convenient size pocket *Formulary* contains about 1,700 prescriptions, representing the latest and best therapeutics. It is arranged alphabetically under the headings of the various diseases for quick reference. Quite often cross references are made. It might have been better, had more synonyms been used in their alphabetical arrangement, referring the reader to the exact page where the subject is considered. Thus, anasarca is not mentioned in the alphabetically arranged part of the text. This book will serve many a practitioner a useful and important part when he goes to the bedside to make his diagnosis and to plan the line of treatment to be pursued.

3,500 Questions on Medical Subjects, Arranged for Self-Examination. *Third Edition. Enlarged. With Questions of the State Examining Boards of New York, Pennsylvania and Illinois.* Philadelphia: P. Blakiston's Son & Co., 1012 Walnut street. 1901. 16mo. Pp. 230. Price, 10 cents.

This book of questions for the medical student or for the doctor who is brushing up to stand medical examinations before State boards of medical examiners, or army and navy boards, etc., makes proper references to standard works in which the correct replies will be found. Opposite each printed page is a blank page, on which memoranda may be entered. It includes

in systematic arrangement questions in each department of medicine and surgery, including anatomy, physiology, etc., usually taught in the up-to-date colleges of the country. Most of the boards now have separate examinations on histology, pathology, bacteriology, etc. While such questions are asked all through the book, they should be collected in one part, so as to better help the student or physician to be examined. The book is "dirt cheap" at ten cents a copy.

Editorial.

The Medical Examining Board of Virginia

Held both an executive and an examining session at Staunton, Va., June 24th, 25th, 26th, 27th. The results of the examinations will appear as soon as the Secretary, Dr. R. S. Martin, Stuart, Va., receives and tabulates the returns from the several examiners. The next session of the Board will be held at Richmond, Va., December 16th, 17th, 18th and 19th, 1901. During the recent session the Board adopted the following resolution:

"Resolved, That the Medical Examining Board of Virginia will, in future, decline to recognize the diploma of any college which does not conform to the requirements of the Association of Medical Colleges of the United States."

The Virginia Examining Board also introduces the following amendment or addition in the resolution relating to reciprocity on its part with other State Boards. After stating that every applicant who claims recognition by virtue of having passed another State Board, the amended resolution goes on to state that he "shall present with his petition a diploma from a reputable college, together with an attested certificate from a State Medical Examining Board *having the requirements as our Board,* and shall pass a satisfactory oral examination before a committee of the Board." The words italicized are the added clause in the amended resolution.

Facts and Figures from Census of 1901, Etc.

The New York Pharmaceutical Association, Yonkers, N. Y., has issued a neat booklet of 64 pages, which contains some of the most interesting, instructive, and generally useful matter ever distributed free of charge to the medical profession. Good maps of the United States show the accession of territory, the number of inhabitants to each physician and dentist, etc.

We are sorry not to have space to speak more at length about the booklet; but that is of less importance, since any doctor can get a copy who writes to the firm for it.

The "Papyrus Ebers."

The famous "Papyrus Ebers," written during the reign of the Egyptian king, Bicheres, 3,500 years ago, was discovered by the celebrated archaeologist, Georg Ebers, in 1872, when an Arab brought him a metallic case containing a papyrus roll, enveloped in mummy cloths, which he claimed had been discovered between the bones of a mummy in a tomb of the Theban Necropolis. A complete description of the papyrus and its history is included in the reproduction which the makers of Hemaboloids are presenting to their friends in the medical profession. In fact, the Palisade Manufacturing Company, of Yonkers, N. Y., who are the makers of Hemaboloids, furnish a fac-simile reproduction of the beginning of the earliest medical treatise extant, together with transcription into hieroglyphics, and translation of a portion of the text. This complete description of the papyrus and its history is certainly extremely interesting to physicians and antiquarians generally. A copy will be forwarded by the Palisade Manufacturing Company, Yonkers, N. Y., to any physician who may inform this company that he has failed to receive a copy.

Physiological and Pathological Action of Alcohol.

The July number of the *Quarterly Journal of Inebriety*—the only journal published devoted exclusively to the scientific study of inebriety and alcoholism—contains a symposium of the most authoritative scientific papers recently read before medical societies in this country and Europe on the physiological and pathological action of alcohol. These papers contain the latest facts and conclusions on the action of alcohol as a beverage and medicine, and is of absorbing interest to every physician and person interested in this topic. Extra copies of this large edition will be mailed to any address on receipt of seventy-five cents in stamps or currency. Nothing better could be done than to send a copy of this number of the *Quarterly* to some friend who is not yet too far gone to be saved by a knowledge of facts and figures. The editor, Dr. T. D. Crothers, Hartford, Conn., is conservative, and one of the most reliable men in this country.

Dr. Richard Ferguson,

Formerly of Richmond, Va., has located in Columbia, S. C., to practice the specialty of eye, ear, nose and throat work. It will please his many friends to learn through the Columbia newspapers that he led the class of 46 of those who attempted the examinations before the South Carolina State Board of Medical Examiners during its recent session. His mark was 97 3-5—over three points beyond the next successful candidate. By the way, it is not an easy matter to pass this South Carolina Board. Of the 46 applicants, about twenty-five per cent. failed to pass. We congratulate our friend, who stood so well also before the Virginia Board of Examiners several years ago.

University of Pennsylvania, Medical Class of 1876, Association.

The 1876 class of the Department of Medicine of the University of Pennsylvania held its first annual banquet at the University Club, Philadelphia, at 7 P. M. on Alumni Day, the 11th of June, and effected a permanent organization for the benefit of its Alma Mater. The following officers were elected: President, Chas. A. Oliver, A. M., M. D.; Vice-President, William H. Klapp, A. M., M. D.; Secretary, Francis M. Perkins, A. M., M. D.; Treasurer, Benjamin F. Baer, M. D., with an executive committee of twelve members, who will meet at the call of the president.

Remedies for Cholera Infantum, etc.

During the summer the Abbott Alkaloidal Company is advertising its remedies for cholera infantum and other summer diseases, with the bold assertion that with these agents properly applied there is no need for a solitary infant's death from these maladies. Is it not worth while to look into the matter and see what is the foundation for such faith?

New Orleans Polyclinic.

Fifteenth annual session opens November 4, 1901. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work.

For further information, address Dr. Isadore Dyer, Secretary, New Orleans Polyclinic, Post-office box 797, New Orleans, La.

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Original Communications.

TONSILITIS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.*

By A. L. Gray, M. D., Richmond, Va.,

Professor Physiology, University College of Medicine.

There is no disease in the whole catalogue that confronts the practitioner oftener and perplexes him more than some of the forms of acute tonsillitis. Aside from the desirability of an early diagnosis for purposes looking toward its alleviation, we are called upon frequently to make a speedy differentiation from diphtheria for reasons of prophylaxis. That the diagnosis is not easy or even possible in the early stages in some instances, without the aid of the bacteriologist, is to my mind a positive conclusion. In order to bring out important facts, it is necessary to take up and discuss briefly the clinical varieties.

There are two forms usually described—the *parenchymatous* or *suppurative*, and the *lacunar* or *follicular*.

The *parenchymatous* or *suppurative* form, which is commonly known as *quinsy*, after some violation of hygienic laws, usually exposure to cold or wet, comes on suddenly, with perhaps one or more chills, followed by fever, which may reach 105 degrees or 106 degrees Fahr., rapid pulse rate and great prostration. During and preceding these symptoms the patient complains of aching in the throat and pain on swallowing. Inspection of the throat most frequently shows one side to be affected. The tonsil itself may be enlarged and reddened, but oftener the inflammation seems to exist in the peritonsillar tissue, and the whole pharynx on the affected side seems to be involved. Not infrequently involvement of the opposite side follows in rapid succession, and

the space between the fauces becomes almost obliterated. In a large proportion of these cases the inflammatory process proceeds to pus formation, the abscess usually pointing toward the mouth.

This form is usually simple of diagnosis, and for this reason of less interest than the follicular or lacunar form. It is here that our skill is in some cases taxed to the utmost. Under this may be classed ulcerative, herpetic, pseudo-membranous and necrotic forms.

Follicular tonsillitis is most common in adolescence and early adult life, though the infant and those in advanced life are not exempt. I have seen it in a child of two years, and in the aged. In the latter, however, it is rare, owing to the disappearance of the adenoid tissue of the pharynx after middle life. Sex seems to have no influence, nor do I think the statement that rheumatism is a predisposing cause can be substantiated. That the disease is due to bacterial invasion is most probably the correct theory. Whether it is due to a specific organism remains yet to be absolutely determined, but there are strong reasons for this belief. How else can we explain the fact that many members of the same household will be successively attacked, or, as I have known, persons visiting a family in which the disease has attacked some member, and in the course of a few days develop an attack? Another view and the one most commonly accepted, is that persons surrounded by the same conditions of imperfect hygiene are rendered similarly resistant to the invasion of bacteria, which are found in the throat in health, such as the streptococcus and the diplococcus lanceolatus.

Let us consider briefly the pathological condition. In each of the above varieties we find an enlarged and reddened tonsil with more or less involvement of the crypts. The most common appearance is an exudation of a yellowish-white caseous material escaping in lumps or strings from the glandular crypts. In some instances,

*Read before the Richmond Academy of Medicine and Surgery, June 25, 1901; Dr. Stuart McGuire, President, in the chair, Dr. Mark W. Peyser, Reporter.

however, instead of this material exuding, it appears to have become encysted and calcified, and is not discharged until after the acute inflammation disappears and the swelling begins to subside. Not infrequently two or more adjacent crypts become distended with this material, forming, as it were, minute abscesses which rupture into each other, leaving a ragged depression or ulcer, from the bottom of which is poured this caseous exudate. Occasionally, also, patches appear, in color identical with those of diphtheria, but usually not so thick; nor do they possess the same tendency to spread to the surrounding parts, but attain a certain size in the course of a day, which they maintain. These may be found not only in the tonsils, but also on the adjacent structures. They are due usually to streptococcal infection.

Another pathological condition is the appearance of herpetic vesicles, which rupture and leave small white ulcers. These may appear on the tonsil and adjacent parts as well. We also sometimes find a pale, milky-white membranous appearance on the tip and margin of the uvula and pillars of the fauces, due to the lepto-thrix buccalis, a normal inhabitant, which is always ready to attack an abraded surface in the mouth, or to the *oidium albicans* or thrush parasite.

Considering the various pathological conditions which present themselves, and the signs and symptoms based thereon, there are unquestionably cases arising in which to make a correct diagnosis without the aid of the bacteriologist is an absolute impossibility; and I am convinced that the statements of many physicians who claim to have treated diphtheria for years with scarcely a mortality without the aid of antitoxin, and even before the age of antisepsis, are erroneous in the extreme, and their glowing statistics apply not to diphtheria, but to some form of follicular tonsillitis. That a bacteriologic examination in the onset is impracticable in many cases cannot be denied, and in these our powers of differentiation are most severely taxed.

As to the modes of onset of the two diseases, they must be admitted to be in many instances identical. An initial chill or convulsion, subsequent rise of temperature in some instances to an alarming degree, with delirium accompanying, pains in the head, neck, back and joints, and great prostration, are common to both. We must look, then, to the throat alone to guide us in our prognosis and treatment.

The throat appearances in diphtheria, as told in most of our text-books, leave us under the impression that whenever we find a grayish white or yellowish, pseudo-membrane on the tonsils, which cannot be easily removed without abrading the surface, and especially if seen on the adjacent mucous membrane, a positive diagnosis of this disease must be made. This is manifestly incorrect. In cases of tonsillitis which present an ulcerative appearance, the bases of these ulcers are at first covered with a dirty, yellowish or grayish necrotic tissue, which may continue firmly adherent for several days. These ulcerations are by no means always confined to the tonsils, but may appear on the posterior pharyngeal wall. The cases which simulate diphtheria most strongly are those in which we have here and there patches of distinctly superficial, pseudo-membrane produced by fungi or bacteria other than the Klebs-Loeffler bacillus. These patches will generally be found discrete, and the point of most value to us is that they do not rapidly spread at their margins in an even layer, but retain their size and shape, and when due to the lepto-thrix buccalis, are very thin and milky-white in appearance. Whenever practicable, however, in any case in which there is a shadow of doubt, a competent bacteriologist should be called in at the earliest possible moment, lest valuable time be lost and our labors be in vain.

As regards treatment: At the onset it is well to give a brisk saline purge, treating the febrile symptoms with one of the antipyretics. I have found phenacetine, grs. v, codeine sulphate, gr. 1-4, administered every three hours, to afford great relief from the headache; and salol in doses of three to five grains every four hours, the most satisfactory remedy for the aching joints.

In the parenchymatous form, in the early stages, the ice bag, or a substitute, externally, and cracked ice given the patient at short intervals, or ice cream, will be found both agreeable and beneficial. After the inflammatory process has progressed, hot poultices or fomentations will be found more soothing and more apt to reduce the inflammation. Counter irritation in the form of tincture of iodine or hot turpentine stupes will be productive of much good. Scarification of the swollen parts will give great relief, and as soon as pus be detected, it should be evacuated, preferably through the anterior surface of the soft palate, as this is the location at which the abscess usually points; and through

an incision at this point the abscess cavity can be readily cleansed without causing much discomfort to the patient.

In the follicular variety, if begun in time, ice applications, both internally and externally, may sometimes abort an attack. After it is well established there is no better treatment than a spray of equal parts of hydrogen peroxide and water to clean off the exudate, and as a germicide, followed by a mixture of the tincture of ferric chloride and chlorate of potash in equal parts of glycerine and water to be applied to the tonsils and surrounding inflamed surfaces, with a camel's hair brush, four or five times a day. In the intervals, some demulcent application, as a spray of menthol or thymol in liquid vaseline, will lessen the difficulty in swallowing, and be found most grateful to the patient. The ammoniated tincture of guaiacum given internally and as a gargle is most warmly recommended by many as a specific. Counter irritation externally to the throat is desirable in this form also, and is probably best produced by rubbing with cloths sprinkled with oil of turpentine or spirits of camphor. The diet should be semi-solid or liquid, as it is swallowed with less difficulty and does not tend to keep up the inflammation by mechanical irritation. Following this line of treatment, I have seldom found the disease to continue longer than three or four days.

It is my firm belief that in the near future follicular tonsillitis will be found to be due to specific bacterium, and that its infectiousness will be firmly established; and I think we err when we allow our cases to be closely associated for any length of time with other members of the family or household. For while it is not a grave malady, so far as mortality is concerned, I know of no febrile disease that renders its victim more miserable for the time being, and I think that by isolation for a short time we may confine the disease to a single individual, and thereby avert much suffering.

901 East Clay Street.

DISCUSSION.

Dr. Jacob Michaux agreed that a specific cause would probably be found for tonsillitis. The comparatively high temperature accompanying such a limited focus of infection seemed to argue a particularly virulent germ. He had obtained better results from the simple tincture of guaiacum, in small doses frequently repeated, than from the ammoniated tincture. Re-

garding tonsillar pus formation, he could not recall a collection existing in the gland itself. He had found some difficulty in keeping open the incision, especially in children.

Dr. J. S. Wellford disagreed as to the infectiousness of tonsillitis, for he had seen numbers of individuals who had several attacks, other members of the family escaping. In elderly people the tonsils were often absent, due to destructive effects of abscesses; and he, therefore, was of the opinion that these abscesses were tonsillar and not peritonsillar, the pillars being still present. He thought that follicular tonsillitis in the early stage was easily diagnosed from diphtheria, the latter almost invariably commencing at one point and radiating therefrom, while the former involved a number of points at first separate but later coalescing. In nine out of ten cases thorough cauterization of each point with nitrate of silver, and the use of an astringent gargle, were all that was necessary.

Dr. H. H. Levy said that follicular tonsillitis could be invariably diagnosed if seen before thirty-six hours had elapsed from the beginning of invasion, because of the isolated spots which represented exudation in the lacunæ. Notwithstanding *Jacobi's* statement, he had never seen diphtheria begin in spots, and to disprove it, had had made often bacteriological examinations. The disease could be cut short by proper treatment. An ordinary case recovered of itself in five days, sometimes three days, if the throat were kept clean, as by a salt wash. Where there was headache, intense limb pain and high temperature, he gave sodium salicylate. If the temperature were not high and pain not great, he gave internally bichloride of mercury and tincture of iron; and he had seen a spray composed of bichloride of mercury, gr. j, chloride of ammonium, gr. xx and water ℥ij, used every hour or two, cause entire disappearance of the deposit in thirty-six hours.

Dr. R. D. Garcin did not believe in the bacterial origin of tonsillitis, his experience coinciding with that of *Dr. Wellford*. He did believe, however, that rheumatism was a predisposing cause. In his own case, salicylate of sodium was the only agent that gave relief, and in another in which there was a temperature of 107 degrees Fahr., and the tonsils had been twice lanced, the remedy reduced it. His patients did not recover in five days, though the acute symptoms might subside in that time.

Dr. Levy said that he, and most physicians,

believed that bacteria did cause disease; that a great many of them existed in the mouth; and that physicians ought to preach that under certain circumstances they might cause disease in various parts of the body. In a number of hospitals cleansing the mouth was preliminary to operation, because during anesthesia the patient might suck material into the lungs and produce pneumonia. The absolute strength of the body depended upon the health of the cells of the body; and that part which was weak fell prey, under exposure, to disease; that healthy, did not. Regarding its duration, he had never seen follicular tonsillitis last longer than five days.

Dr. Wellford rejoined that it was not necessary to explain inhalation pneumonia by a germ which might have remained dormant otherwise. Ether was a compound body, the decomposition of which, to obtain its oxygen, strained the lungs. Chloroform did not produce the disease, because it did not contain oxygen. He contended that nine-tenths of all affections were due to ptomaines, not bacteria. If the cells were weak, why could they not produce disease in the absence of germs?

Dr. W. F. Mercer stated that pus in the tonsils was rare. He had seen but one or two cases in which it had originated as the follicular form. In differentiating tonsillitis from diphtheria, it would be well to bear in mind that the exudate was more of a whitish-yellow, and that in every case the tongue was heavily coated, which, as a rule, was not true of diphtheria at first.

Dr. Gray, in closing the discussion, said that he had often noticed the discrete follicles mentioned by *Dr. Wellford*, and thought them a valuable point; but had never seen account of them as of diagnostic value in any literature. As to the infectiousness of the disease, he had read an article since writing his paper which stated that follicular tonsillitis was an acute infection, having an incubation period of four days. He thought it strongly probable that this was true, but whether it was due to a germ existent in the throat in health, or one adventitious, no one could say. He believed that some individuals were predisposed to it; that by some hygienic violation a point of diminished resistance was produced in the tonsils; but, without the added germ, the disease was impossible. He agreed with *Dr. Levy* regarding this. He had found that ninety per cent. of his cases of follicular tonsillitis never had rheumatism, but it would be strange if two such common affections did not attack the same individual at some time.

PENETRATING GUNSHOT WOUND OF THE ABDOMEN.

By THOMAS D. BURGESS, M. D., Metewan, W. Va.

On the 9th day of June, 1901, I was called to attend John McGuire, age 42 years, a coal miner, in the employ of the Logan Consolidated Coal and Coke Co., for gunshot wound of the abdomen. He received the injury at 7:30 o'clock P. M. The weapon used by his antagonist was a 38 calibre Smith and Wesson pistol. I first saw the patient at 10 o'clock P. M., and upon examination, I found that he had a penetrating gunshot wound of the abdomen, the ball entering the left side of the abdomen midway between the navel and the anterior superior spinous process of the ilium. He had eaten a full supper one hour previous to receiving the injury, but had vomited freely soon after being shot.

Upon probing the wound I discovered that the missile had penetrated the abdomen and ranged in the direction of the bladder. The patient complained of severe pain in the lower part of his abdomen, and had frequent desire to urinate with inability to pass urine. By the introduction of a catheter I was able to draw a small quantity of bloody urine. There was tympany and tenderness of the abdomen, and manifestation of a moderate degree of shock.

When probing the wound there was an escape of what seemed to be bloody urine and intestinal gas. Owing to the inconvenience and danger attending a laparotomy in one of the houses of a mining town, it was two hours before we were prepared to operate on the patient.

At 12 o'clock midnight I laid the patient on the table in the house in which he lived, and with the assistance of *Dr. Z. A. Thompson*, of Thacker, W. Va., I opened the abdomen in the median line, the incision extending from two inches above the navel to the symphysis pubis. The abdominal cavity contained a considerable quantity of blood and urine, and a small amount of extravasated contents of the small intestine. The intestines were brought out, and, upon examination, I found that my patient had ten gunshot holes in the small intestine, all of which I repaired by the Lembert suture, using fine silk as a ligature.

After sewing up the intestine I examined the bladder, and found one bullet hole in it near the summit, which I also repaired with the Lembert suture and fine silk ligature.

I did not flood the abdomen, but mopped it

dry with a sponge moistened in a 1-4000 solution of bichloride of mercury, treating the wounded intestine and bladder in the same way, care being taken to sponge out the excess of the solution before using it in the abdomen.

I then returned the intestines to the abdominal cavity and closed the abdomen in the usual way, using heavy silk ligature. I did not use drainage of any kind, but made a complete closure of the abdomen, dressed the incision with 10 per cent. iodoform gauze, covered with a thick layer of absorbent cotton, and applied a neat fitting binder.

The patient soon recovered from the chloroform which was used as the anesthetic, and rested comparatively well during the remainder of the night.

At 8 o'clock on the morning of the 10th of June I saw the patient, and found him suffering considerable nausea and vomiting, with a pulse of 96 full and strong, and a temperature of 101 degrees Fahr. A catheter was introduced, and nearly one pint of urine and small blood clots were forcibly passed from the bladder. I ordered the catheter introduced every six hours, but the patient would voluntarily pass his urine before the time for the use of the catheter, consequently it was never introduced but one time. I gave him an hypodermic injection of morphine sulphate, gr. 1-4, and atropine sulphate 1-150 grain. I also gave him 1-2 minin of creosote in elix. bisnuth and pepsin 3j, alternating every three hours with 5 grain doses of salol, after which he soon ceased vomiting and rested very well, requiring no more opiates. He was allowed to have a reasonable quantity of crushed ice and ice water.

After the expiration of two days I allowed my patient to have sweet milk and chicken broth, which diet I kept him on for one week, when I gradually increased his diet, and at the end of two weeks from date of injury he was allowed to have the ordinary diet in moderation, excepting coarse vegetables and fruits.

On the third day I began giving my patient 1-2 grain of calomel every two hours, and continued until he had taken four grains, after which he was given one teaspoonful of sulphate of magnesia every three hours until he had taken four doses, when his bowels moved nicely, and subsequently remained open by giving one teaspoonful of sulphate of magnesia every other day. There was a moderate amount of tympany and eructation of gas until the fourth day,

when, after the action of the calomel and magnesia and the use of the creosote and salol previously mentioned, it gradually subsided, and at the end of one week the patient had only the normal tympany of the bowels.

During the first week the patient's pulse fluctuated from 84 to 96, and temperature from 99 to 102 degrees Fahr., the highest temperature and pulse rate being in the first three days. After the eighth day the pulse and temperature remained normal, and my patient had an uneventful recovery.

The stitches were removed from the abdominal incision on the eleventh day.

On July 10th, thirty-one days after the injury, I applied a silk-elastic abdominal supporter, and had my patient get up and walk. He is now entirely well, suffers no inconvenience, and is able to go anywhere he desires.

CLINICAL VALUE OF SOME OF THE NEWER HYPNOTICS—DORMIOL; CHLORETONE; HEDONAL.

By ALBERT E. BROWNRIGG, M. D., Concord, N. H.,

Fellow of the Massachusetts and New Hampshire State Medical Societies, Assistant Physician New Hampshire State Hospital.

After a brief introduction on the use and abuse of hypnotics there follows remarks upon the methods employed in testing the hypnotic powers of drugs and the errors to be guarded against. The author then proceeds: "From the nature of the case, it can then be readily seen that it is not always an easy thing to obtain a just appreciation of the hypnotic value of a drug. This difficulty is especially great in private practice, where often the imperfect reports of the patients themselves furnish the only basis for conclusion. As is well known, insomnia is most troublesome and frequent in certain diseases of the brain and nervous system; and probably the greater part of the hypnotic remedies manufactured are used in many public and private institutions for the care of the nervous and the insane. And those places offer, too, special facilities for the careful selection and observation of suitable cases in testing the properties of new sedatives.

In the recent investigation of the compara-

tive value of some of the newer hypnotics in the New Hampshire State Hospital, at Concord, N. H., the compounds *dormiol*, *chlorotone*, and *hedonal* received, among others, most careful attention. After a brief separate description of the properties and physiological actions of each, a summary of their comparative value as hypnotics will be attempted. Special attention is drawn to the fact that all the cases in which they were tried were such as offered no probability of natural sleep on account of continuous nervous unrest and noisy agitation; so that it seemed fair to refer the prompt effects to the action of the drug alone.

DORMIOL.

Dormiol, $\text{CCl}_3\text{C}(\text{OH})_2\text{C}(\text{CH}_3)_2\text{C}(\text{C}_2\text{H}_5)_2$, is a chemical compound of equal molecules of chloral and amylene hydrate. Its chemical name, therefore, would be Dimethylethyl-carbinol-chloral or amylene-chloral. At ordinary temperatures it is a colorless, limpid, oily fluid with a specific gravity of 1.24, and it is not decomposed by boiling. It is volatile, with a peculiar penetrating odor and an aromatic, slightly burning taste. It is readily soluble in alcohol and the fatty and ethereal oils. With an equal quantity of water it forms a milky fluid, which slowly becomes a perfectly clear 50 per cent. solution of the drug, and in this form is supplied to the trade. It is usually dispensed in a 10 per cent. aqueous solution; but this weak solution is not permanent, and has to be kept cool and from light. For a full report on the chemical properties of dormiol the reader is referred to an article by its inventor, Dr. E. Fuchs, in the *Zeitschrift für angewandte chemie*, 1899, No. 49.

Physiological Actions.—External—Dormiol possesses marked antiseptic properties, but is too irritating and painful to apply to abraded surfaces. When applied on cotton to the skin and bound on so as to hinder evaporation vesication over the area of direct contact is produced, surrounded by a wide margin of erythema. Hypodermically, it produces considerable pain and local irritation.

Internal.—Although the taste is not very agreeable, patients take weak solutions remarkably well. We have given it several hours after food as a rule, and in no case has it given rise to disagreeable gastric sensations. The appetite is unimpaired even under its continued use, and it is not constipating. It probably is not decomposed in the stomach, but circulates in the

blood unchanged. It is very rapidly absorbed, often producing its systematic effects within fifteen minutes after ingestion. In over two hundred and fifty instances in which its effects were closely watched no depression of the heart or respiration was noticeable beyond that natural quiet sleep. At first this was a matter of considerable surprise when observing, for instance, an agitated melancholiae, who would almost immediately after taking the drug quiet down and drop into a dreamless slumber. Of the effects of poisonous doses, we have had but little experience. In one case, however, owing to a mistake on the part of the druggist, four drams of the 50 per cent. solution was given instead of the same amount of the 10 per cent. solution that had been ordered. Thus the patient took 120 grains, or five times the usual dose. The patient slept all night and late into the next day. He could be easily roused, and was perfectly rational, but very drowsy. After eating a very hearty dinner he fell back as in a faint. His heart beat was regular and strong, and 88 per minute. He slept for nearly all that day, rousing only for meals, all through the next night and part of the next day, and it was not until the third day that the full effects had disappeared. This excessive dose was purely accidental, but fortunately served to show the comparative harmlessness of the preparation, as no ill effects were noticeable on the heart, respiration or digestion.

It is on the functions of the cerebrum that dormiol seems to have its first and chief action. As to how the nerve cells in the brain are affected you would not guess. To the theory advocated often of late, which prettily explains the action of hypnotics by picturing a sudden retraction of the dendrites of the neurons under the stimulus of the drug, and a consequent disruption of nervous continuity in the brain centres, resulting, first, in incoherence of thought and act, wanderings, drowsiness, with, finally, complete mental inaction we cannot lend our sanction. What we do know is that dormiol will almost invariably quiet nervous unrest and induce sleep, and often in the severest grades of mental exaltation and depression. Occasionally, however, it fails. This may be due to a deranged stomach, or but indicate especial personal tolerance to the drug. In the vast majority of instances it has proved of eminent value, one of the safest, surest and quickest hypnotics that we possess, particularly in the various stages of mental depression.

In a tabular view, giving an analysis of two hundred and fifty cases, in which the effects of dormiol were studied, is given the disease and immediate conditions causing the insomnia, with the time and amount of the dose, the time of first going to sleep, the duration of the sleep, with the condition of the patient on awaking, together with the condition of the heart before giving the dose, and about a half hour after it had been administered. In 37.6 per cent. of the cases sleep was induced within fifteen minutes after ingestion of the drug; in 43.2 per cent. in from 15 to 30 minutes, so that in all about 81 per cent. of the patients went to sleep in less than half an hour, while the average interval between the administration of the drug and sleep in all cases was only 26 minutes. This places dormiol, we think, at the head of the list of hypnotics administered by the mouth in regard to rapidity of action. In 15 per cent. of the cases a second or third dose had to be given to induce sleep, and in about 6 per cent. no sleep occurred. In these last cases, however, the dose was not repeated, but most of these became more quiet and restful. In only two instances, or .8 per cent., no effect whatever was noticeable.

The duration of the sleep varied from 1 hour to 10 1-2 hours. The average duration was five hours. When the patients awakened in one or two hours, they were apt to be somewhat drowsy and quiet for some time thereafter. But after a sleep of four or five hours they almost invariably showed no further effects of the drug, and might immediately continue their talk or activity as if no interruption had occurred. In no case did any one complain of subsequent headache or other disagreeable subjective symptoms, which so often follow the administration of chloral and some other hypnotics.

CHLORETONE.

Chloretone is a white crystalline solid, which at body temperature slowly sublimates to reform in glistening white needles. It has a strong camphoraceous odor and taste, and is readily soluble in chloroform, acetone, strong alcohol, ether, benzine and glacial acetic acid, but only slightly soluble in water. It melts a little below the boiling point of water, and boils at 167 degrees centigrade. Dilute acids or alkalis seem not to affect it in the least. Its chemical formula is said to be $\text{CCl}_3 \cdot (\text{CH}_3)_2 \text{C} \cdot \text{O} \cdot \text{H}$ and its chemical name would therefore be trichlor-tertiary-butyl-alcohol.

and its chemical name would therefore be trichlor-tertiary-butyl-alcohol.

Physiological Actions.—*External*—Laboratory experiments show that this drug also possesses marked antiseptic properties. Blood serum and other organic fluids keep indefinitely when saturated with about one-half of one per cent. of chloretone. It will also destroy living bacteria. Thus it has been used as an antiseptic wash in burns and other painful injuries both on this account and because of its powerful local anesthetic properties when applied to abraded surfaces or to mucous membranes. Dilute solutions are very safe and efficient as local anesthetics when given hypodermically as a substitute for cocaine.

Internal.—When ingested it soon produces anesthesia of the mucous membrane of the mouth, throat and stomach. Thus it may be retained in irritable stomachs when most other things might be speedily ejected. It is not absorbed very quickly, and it is usually nearly an hour before systemic effects are produced. The patients first complain of the taste and of disagreeable sensations in the stomach, which are apt to cause anorexia and some impairment of digestion. They then describe a peculiar parasthesia of the extremities, pricklings, formication, and such like, which may pass on to more or less complete general anesthesia. Those effects may be dominant for some time previous to sleep. In a case of acute mania with symptoms of exhaustion a large dose had been given about 11 A. M. He continued active about his room until the middle of the afternoon. Then he grew quiet, but was determined to stand. He seemed dazed, and physical examination revealed considerable anesthesia of the skin over his whole body. It was only after considerable effort that he was induced to go to bed, but soon afterwards he dropped into a quiet sleep, which lasted well into the next day. In this case the heart beat, though regular, was much slowed and became markedly weaker.

Chloretone seems to have selective action upon nervous tissue, and it is in this way that it produces its hypnotic effect. It lulls to inactivity both motor and sensory cells, but the latter would seem to be sooner and more gravely affected than the former. By thus relieving any bodily pain and cutting off the many influences of the surroundings which tend to stimulate sensory reflexes, chloretone isolates the mind, so to

speak, from its disturbing influences, and a dreamless sleep is soon induced.

From an analysis of 71 cases, sleep followed in 18.3 per cent. within 15 minutes after administering the drug, and in 29.5 per cent. in from 15 to 30 minutes, so that in nearly 48 per cent. of the cases sleep was induced within the first half hour. This is little more than half as many as went to sleep under smaller doses of dormiol. In nearly one-fourth of the cases three or four doses had to be given before sleep was produced. The average time of all cases between the last dose and the time when they first dropped to sleep was 48 minutes. The average duration of the sleep was four and one-half hours. Even after awakening there was a tendency to anesthesia and drowsiness for some hours, though no permanent untoward effects were ever noticed. A few of the patients soon learned to dislike this preparation both on account of its taste and also from the disagreeable after sensations, which were rather hard to describe, but uniformly disagreeable.

HEDONAL.

This a derivative of urethane, and is a fine, white crystalline powder, insoluble in cold water, and but slightly so in alcohol. The usual dose is 15 to 45 grains. From our experience in 35 cases, we cannot speak as unguardedly of its uniform results as have some others. In only 8.2 per cent. of the 35 cases studied was sleep produced within fifteen minutes after the first dose and in less than 30 per cent. within the first half hour; while in over 25 per cent. no sleep occurred on the night hedonal was used. The interval between the last dose and the first sleep averaged 37 minutes. The sleep, though quiet and restful, was easily disturbed with an average duration of 2 1-2 hours. No disagreeable after effects were complained of, and no depression of the circulation or respiration was at any time noticeable. The drug did not seem to affect the appetite or digestion at all, and, in fact, one of its chief recommendations is its innocuousness. This is associated unfortunately with such feeble hypnotic powers as make it generally unreliable in emergencies, but certainly applicable to the milder forms of simple insomnia.

CRITICAL SUMMARY.

In contrasting the relative merits of these three hypnotics—dormiol, chlorotone, and hedonal—but a few of their general characteristics will be touched upon.

On account of its perfect solubility and more agreeable and more easily disguised taste, *dormiol* is taken much more readily than either of the others. The abominable taste and anesthetic effect of chlorotone make it especially objectionable in this connection. In our hands both dormiol and hedonal have proven perfectly safe in any ordinary dosage, even when given repeatedly to feeble or exhausted patients. With chlorotone, however, as above stated, we have seen symptoms of dangerous depression, beside which its disagreeable by and after effects render its field of usefulness more restricted. In the respect to its rapidity of action, dormiol stands easily first. Next, perhaps, comes hedonal, with chlorotone a later but more powerful third. On account of the accompanying subjective symptoms, chlorotone ought not to be employed for simple sleeplessness, but is sometimes invaluable where pain or bodily discomfort is a causative factor. Hedonal and dormiol are more purely hypnotic in their action, and both give refreshing rest, both physical and mental. The duration of the sleep with dormiol is apt to be longer than that with chlorotone, and much longer than that produced by hedonal.

CONCLUSIONS.

Hedonal, we would say, is applicable to slight forms of insomnia unassociated with bodily pain or severe mental excitement. It is valuable as a "placebo," having a direct though not very powerful tendency to produce sleep. Patients take it quite readily, and it should be useful in a very large class of cases in general practice.

Chlorotone is a powerful and pretty certain hypnotic if given in sufficient doses. Its general use to produce sleep, however, should be discouraged on account of its secondary effects. But these very defects may make it especially valuable in certain selected cases. Its action should always be carefully watched. The disagreeable subjective sensations it may produce are oftentimes insurmountable objections to its employment.

Dormiol.—While certainly not the most powerful sedative that we possess, dormiol answers well the requirements for a generally serviceable hypnotic. Its rapidity of action, we believe, is unsurpassed by any other hypnotic taken internally. This characteristic, together with its ease of administration, reliability in almost all forms of insomnia unattended with great bodily discomfort, and almost total absence of by and

after effects, subjective or objective, make it one of the most valuable acquisitions to the physician's armamentarium of recent years. It probably will win a place in the Pharmacopœia.

A NEW AND ORIGINAL METHOD OF OPERATING UPON THE INGUINAL CANAL.

By JACOB MICHAUX M. D., Richmond, Va.,

Professor of Obstetrics, University College of Medicine, Richmond, Va.

It is not without some degree of hesitation that I appear before this learned body with a paper upon so simple a topic. And yet, Mr. President, when looked at from another standpoint, it may be readily seen that it is a matter of no small importance. The whole subject-matter of my brief paper, then, sir, is to advocate the original method introduced by the writer in performing Alexander's operation (shortening the round ligaments of the uterus)—viz., of separating the fibres of the aponeurosis of the external oblique muscle, and drawing them widely apart with retractors along the line (i. e., in the vertical plane) of the incision.

The old method was in all operations upon the inguinal canal to divide all the muscular and other structures upon the grooved director with the knife.

The obvious advantage of my method is that a stronger wall is made by the uncut fibres of the aponeurosis of the external oblique than can be gotten by the method hitherto universally in vogue—any argument here in defense of a stronger wall in all operations involving the inguinal canal would be a mere waste of words and time. In closing the incision I have always included the fibres of the aponeurosis of the external oblique along the margins of the opening made by the separation in the stitches in order to secure firm union. This method, as the title of this article indicates, is applicable to all operations involving the inguinal canal—that is to say, operations upon the various hernie involving the canal, and in Alexander's operation.

I wish to say that a gentleman in Canada wrote a brief notice of his discovery and use of this method of performing these operations some twelve months after I had reported mine to the Academy of Medicine and Surgery of this city. I am sorry I cannot recall the gentleman's name,

nor the name of the journal in which it was published.

The advantages are: It is perfectly simple, as the fibres of aponeurosis of the external oblique run nearly parallel with the canal.

The wall is much stronger with the uncut fibres than with cicatricial tissue. It requires no more time than section does. It does not involve any further delay or danger than the old method. It is more rational to preserve an organ than to cut it, *ceteris paribus*. The healing is as prompt and recovery as complete.

I have thus far had uniform success with this method, and I have performed a number of operations for both hernia and shortening the round ligaments.

321 East Franklin Street.

AUTOPSIES, HOW MADE, AND THEIR INTERPRETATION.

By C. W. CANAN, M. D., B. S., Ph. D., Orkney Springs, Va.

If there is any one branch of medicine in which the general practitioner lacks training and knowledge, it is in making autopsies or *post-mortem* examinations. To be successful either in medicine or surgery requires a thorough knowledge of pathology. This can only be gained by holding numerous autopsies. The guiding principle in medical education is, that if disease is to be treated intelligently its histological basis must be clearly understood. Pathology is now becoming to occupy the place it deserves in the curriculum of all standard medical colleges; but the greatest fault in preparing the student for his life work is in holding too few autopsies. Each class of students should be made to hold one autopsy after another under the guidance of their teacher on pathology. They should be made to hold the autopsy themselves and find all *post-mortem* changes and pathological conditions and explain them. I doubt if there is any better standard by which to estimate a physician than his method of conducting an autopsy and the interpretation of the pathological findings.

It is a lamentable fact that physicians as a whole assume a very indifferent attitude towards pathological investigation. The busy practitioner says he has no time for making autopsies, and the other class have but few opportuni-

ties. We were asked to be present at an autopsy some time ago, and we have not seen a subject for years in which there was such a store of knowledge; but the greater part of it was obliterated by the way the work was done. The abdominal viscera were first dissected, which severed the diaphragm and large vessels, causing the heart to empty its chambers and fill the abdominal cavity. Therefore the pathological conditions were almost obscured. It is while holding autopsies that the physician has an opportunity to correct or prove his diagnosis. It will prove to him that hastily-formed diagnoses or careless examinations bring surprises and humiliation. It teaches him charity for his brother physicians. It reveals errors and teaches us our best lessons, while at the same time it exerts an educating influence over the public, and should be encouraged. It tends to remove prejudice, besides contributing to the interest of the physician's work and to his medical knowledge.

Make *post-mortem* examinations and scientific use of every opportunity to confirm or correct your diagnosis and to become more familiar with the machinery of life whenever fitting cases or questions as to the cause of death from unknown diseases present themselves. But while doing so remember that all civilized and all savage nations respect the dead, and that the important uses of the dead to the living are the only, but all-sufficient, reason for dissecting the dead. Therefore never allow it to be inferred that you are cutting or mangling the bodies of the dead to gratify idle curiosity, or to satisfy yourself alone, or to show how skillful you can use the scalpel, or that your feelings and emotions have passed through a process of hardening, or that it is a very great favor to be allowed to do it; but put it emphatically on the higher ground, that it is done and only done for the benefit of science and in the interest of suffering humanity, that it may be for the good of those with whom you are then talking. Never hurry at any time while making autopsies, and especially while holding them in private families; but take time to do them thoroughly, and be exceedingly careful to avoid unnecessary mutilation; let your neatness and manner show that you have the greatest respect for the family and their sleeping dead. Let this be the more pronounced if you operate before an audience of non-professional persons. After you have finished your work and made notes for future study and reference hide all traces of your knife as thoroughly

as possible, and at your leisure you can compare what you have discovered with your view of the cause before death. When the opportunity of making an autopsy presents itself, you should defer making the examination for a few hours after death, out of respect to both the dead and the living, if possible. This is necessary also because the hypostatic congestion that naturally follows death is often mistaken by the public for *anté-mortem* changes, and frequently gives rise to gossip such as "only in a trance," etc., which may cause doubt and dissatisfaction in the minds of the family. It is well to always point out this condition when present, its true nature and cause, and its complete lack of significance. In holding an autopsy the principle which should govern any special method is to obtain in the best manner possible an inspection of the various organs in their normal relation. The method that we have found to give the best results is to open the abdomen first for inspection, but leave it to be dissected after we have finished our examination of the thorax.

When a *post-mortem* is held with reference to various medico-legal points, as in case of murder or suicide, it should begin by a thorough inspection of the outer part of the body. When the examination is made some time after death it becomes quite difficult to differentiate between injuries and *post-mortem* changes in the skin. The physician should be very careful and reserved in his remarks, as large interests, as in accident and life insurance, may depend upon the proper interpretation of such small points. The external examination finished, the abdomen should be opened so as not to interfere with the normal relation of the different organs. Carefully inspect these, but do not sever any connections; then open the thorax and note the relations there. This done, sever the trachea, insert a finger into it by which traction can be made, and with a few careful strokes of the knife remove the lungs and heart together. These can now be carefully examined. By a stroke of the knife along the right and left border of the heart its chambers will be brought into view.

In obscure cases, where death resulted from asphyxia or paralysis, the right and left ventricles will be respectively overfilled. Clearing the heart of all attachments, except an inch or two of the aorta and pulmonary artery, by which the organ can be suspended, water should be allowed to flow into these to test the integrity of the valves. If the water disappears slowly from

the cavities it is due to the filling up of the coronary arteries. It is a very difficult thing to properly interpret valvular disorders. We have seen grave lesions and no insufficiency. This may exist in the heart muscle and not be recognized at the autopsy. Keep these things before you, and you will seldom coincide with the meaningless diagnosis of "heart failure." In opening up the valves draw aside the pulmonary artery, or it will be divided by cutting out from left ventricle through the aorta. This should always be done with a sharp pair of seissors. Leaving the thorax, the omentum and spleen should be next examined; while some prefer to examine the stomach and duodenum, these should be opened *in situ* by one incision. Following this, the liver pancreas and mesentery can be inspected. For the sake of cleanliness, the intestines should be left for the last. The urinary organs should be examined consecutively—first, the kidneys; second, the ureters and bladder, and third the genitals. The kidneys should be divided from their convex border through the pelvis, so that we have a comparative view of their different structures.

There are two methods for removing the skull-cap so as to expose the brain. The first is the circular method of sawing off the calvarium. The second, which is to be preferred in private practice, and is quicker, consists in cutting out an elliptical piece from the vortex, beginning at the ears and going with the saw anteriorly and posteriorly until the fontanelles are reached. This does not disturb the tissues of the face.

The brain substance can be best examined by one of two methods; the first is to open the lateral ventricles, and then by making concentric long incisions, lay open the brain like the leaves of a book. The second method is to make horizontal sections with a broad knife from convexity to base. I prefer the second method, because it so admirably exposes the region of the internal capsule, where minute hemorrhages are so liable to occur, but the operator will use his good judgment as to which method will best help him to ascertain any special pathological condition he may be looking for, and at the same time be able to see all others that may be present. Any method that minutely subdivides the brain and brings every part of its structure into view is the one to be followed, for the reason that a very small lesion, sufficient to cause profound disturbance, or even death, might otherwise be readily overlooked.

In holding autopsies in private practice, you cannot go into it so thoroughly because of lack of time and surroundings, but it should be done as thoroughly as possible, so as to derive all the benefit you can. A good clinical history will aid you very materially in interpreting your pathological findings. Some may think this is a reflection on the resources of pathology, but it is not, for many diseases may run a fatal course and leave no clue as to their existence except what has been gathered in the clinical history. Many able pathologists, after holding a *post mortem*, have been at a loss to account for death, when the clinical history was brought forward and cleared up the case. These are the exceptions, for in most instances the knowledge gained from the autopsy confirms the diagnosis or clears up those that were in doubt.

The thorough understanding of pathology is indispensable to the physician, for he who understands disease the best will treat it the best. Therefore, he who is skilled in pathology and is competent to make pathological examinations and rightly interpret them, has attained one of the aims of progressive medicine.

Anodyne Treatment of Acute Peritonitis.

According to *Medical News*, McCaffrey ("The Etiology, Pathology and Treatment of Acute Peritonitis") observes that the most pronounced indication for treatment in peritonitis is that for the relief of pain. Blisters and counter irritation, the older resorts, are practically useless. Hot water bags and poultices are far superior, but the relief they afford is only temporary. In some cases the ice bag is more grateful than hot applications. But whether hot or cold is employed, it should be relied upon only until other lines of treatment can be instituted. Papine should be given in teaspoonful doses every hour, and the doses repeated frequently enough to afford the desired results. Relief from pain, short of narcosis, should be sought, and this is generally easily obtained by proper dosage. Papine does not produce nausea, but rather prevents this symptom. In the event of the development of more or less prostration, a proper stimulant, such as strychnine or nitroglycerine, should be judiciously employed.

Correspondence.

Physicians' Orphan Home, Bristol, Tenn.-Va.

To the Medical Profession:

Realizing the great need and true philanthropy of a Physicians' Orphan Home for the proper care and training of children left dependent by members of the medical profession, a self-constituted committee on location, representing Ohio, Wisconsin, Texas, Tennessee and Virginia, selected Bristol, Tenn.-Va., as suitable place for such a home.

This conclusion was arrived at after the consideration of a number of places, the idea prevailing among the committeemen that no place surpassed Bristol in that it is not only centrally located with reference to the greatest number of physicians in the United States, but is in a southerly mountain climate, being 1,800 feet above sea level, naturally healthful and possessing inspiring scenic effects.

Educational advantages was another point which the committee had in view in making a selection, and Bristol is noted for its educational facilities.

For the purpose of carrying into effect a plan at once so magnanimous and so urgent, a meeting of the committee was held in Bristol on December 21, 1900, at which time an organization was effected.

Officers.—G. M. Peavler, *President*; N. H. Reeve, *Secretary*; John C. Anderson, *Treasurer*; John S. Harris, M. D., *Cor. Sec'y*.

Vice-Presidents.—Drs. C. A. Abernathy, Pulaski, Tenn.; Chalmers A. Parker, Fort Worth, Texas; Francis M. Prince, Bessemer, Ala.; A. Garcelon, Lewiston, Me.; J. W. Smithwick, La Grange, N. C.; I. C. Anderson, Holston Bridge, Va.; T. Ritchie Stone, Washington, D. C.; Harold N. Moyer, Chicago, Ill.; W. Seidel, Little Rock, Ark.

Board of Trustees.—Drs. G. M. Peavler, Bristol, Tenn.; N. H. Reeve, Bristol, Tenn.; M. M. Butler, Bristol, Tenn.; W. K. Vance, Bristol, Tenn.; E. T. Brady, Abingdon, Va.; A. S. N. Dobson, Limestone, Tenn.; John S. Harris, Minor Hill, Tenn.; Maj. A. D. Reynolds, Bristol, Tenn., and Hal. H. Haynes, attorney, Bristol, Tenn.

The organization has an option on elegant property in Bristol, including a beautiful modern building of 85 commodious rooms, all tastily furnished and carpeted, so as to be ready for use

immediately upon receipt of funds sufficient to open the Home. In the purchase of this property, conservatively valued at \$100,000, the Bristol Board of Trade has offered a magnificent bonus, conditioned upon the establishment of the Home, which leaves a balance of only \$35,000 to be raised in order to acquire a clear title to the property. The grounds are spacious, and there is room for such additional buildings as may be necessary to make this a home for dependent children of the profession from all parts of the country.

While \$35,000 will put the Home on foot, the plan has a philanthropic aim which anticipates both the maintenance and education of the children of the home, so that if the fund for this purpose, not considering endowments which will come afterward, reaches \$300,000, it will be no extravagance.

The necessity for the Home, the philanthropy of the plan, and the Christian principle upon which it rests, cannot fail to appeal eloquently to every heart in a profession whose ministrations among the sick and needy naturally broaden sympathly for those in distress.

This organization does not propose an assessment for the Home purpose, but will trust to the philanthropic spirit of the profession to contribute voluntarily the funds to make a Home that will be national in its character; and, on this basis, it is confidently expected that each member of the regular profession will contribute as liberally as he may feel disposed, income and financial circumstances taken into consideration.

If every one will help in this cause the character of home desired can be established without the slightest burden to any one member of the profession; and the weight of glory which it will work can only be estimated, in the highest sense, as it comprehends both time and eternity.

Now let us help and send in donations at once to *Treasurer Physicians' Orphan Home, Bristol, Tenn.-Va.* CAM ANDERSON, M. D.

Holston Bridge, Va.

Christian Scientists and Faith Cure Doctors.

The Legislature of Alabama during its last session enacted a law prohibiting so-called Christian Scientists and faith cure doctors from doing business in that State.

Proceedings of Societies, Etc.

Association of American Medical Editors.

The Annual Meeting of the Editors' Association was held at St. Paul, June 3d-5th, 1901. This was the most successful meeting held for fifteen years, both from point of attendance and the excellence of the papers presented. Of especial moment was the paper presented by Dr. Burnside Foster, of St. Paul, entitled "Some Thoughts on the Ethics of Medical Journalism," which was discussed by Drs. Lancaster, Gould, Love and others. At the instance of Dr. Foster, a committee consisting of Drs. Simmons, editor of the *Journal of the A. M. A.*; Gould, of *American Medicine*, and Foster, of the *St. Paul Medical Journal*, was appointed to amend the constitution and by-laws of the Association by adding certain rules concerning the nature of the advertising which is to be admitted to the pages of the journals in affiliation with the Association. These rules are to be binding on all members, the committee also being advised to suggest such revision of the constitution and by-laws as may be deemed advisable.

Among other papers read were those of Dr. John Panton, entitled "The Relative Value of Medical Advertising"; of Dr. Dudley S. Reynolds, entitled "Improvements in Medical Education"; Dr. Harold N. Moyer, "Relation of the Medical Editor to Original Articles."

The Association adopted resolutions favoring the establishment of a psycho-physiological laboratory in the Department of the Interior at Washington, D. C. It also appointed a committee to draft a resolution requesting the Board of Directors of the Louisiana Purchase Exposition Co., in charge of the St. Louis World's Fair, to recognize and commemorate in a suitable manner the great work done in medicine and surgery. *The American Medical Journal* was selected as the official journal for publication of papers and proceedings.

The annual dinner was held at the Metropolitan Hotel, June 3d, President Stone acting as toastmaster. The speakers were—Drs. Love, Stone, Moyer, Matthews, Marcy, Fassett, Hall.

The Officers for the ensuing year elected as follows: President, Dr. Alex. J. Stone, of St. Paul; Vice-President, Dr. Burnside Foster, of St. Paul; Secretary and Treasurer, Dr. O. F. Ball, of St. Louis.

The Executive Committee appointed for the

ensuing year consisted of Drs. Gould, Matthews, Lillie, Fassett, Marcy.

The next meeting will be held at Saratoga Springs, N. Y., in June, 1902.

Analyses, Selections, Etc.

Advertising in the Profession.

There is a wide difference of opinion as to what constitutes medical advertising. This is a most vital question of the present time. G. Frank Lydston contributes an article on this subject in *The Medical News*. Along this line in a portion of his paper he says:

It is my belief that "Thou shalt not advertise" was of necessity written in a Pharisaical spirit, and that it has been the cloak of more inconsistency and hypocrisy than anything ever written for the guidance of medical men. Whatever the conditions may have been at the time the code was written—and I do not believe they differed in kind from those prevailing at the present day—conditions nowadays absolutely demand advertising of one kind or another on the part of medical men. The physician may gloss this necessity over, and he may deceive himself into the belief that he is not given to advertising, but the fact still remains that he must advertise or starve. All roads lead to Rome, and it is by no means necessary that the physician should advertise in the newspapers or by handbills, in order to accomplish his ends; nor does it follow that he is unjustified or unworthy of respect because under the stress of his environment he advertises in one way or another. If the opinions of those who champion the cause of the commission-giving and commission-taking doctor should be accepted by the profession, it would no longer be possible to classify advertising on the part of physicians. There is nothing lower in the scale in advertising than the commission business. Give the medical man the privilege of sending out paid agents, or employing professional drummers on commission, and he will have nothing more to conquer in the world of advertising. Commission practice, in point of effectiveness, bears the same relation to ordinary advertising that accurate rifle-shooting does to inexperienced shotgun practice. With

the professional drumming sleuth on the trail of an operation case, it is hardly possible that it could escape. I believe, however, that the reputable members of the profession discountenance such methods as those involved in commission-paying, commission-receiving, and medical and surgical drumming.

The most important form of professional advertising are college advertising, church advertising, secret society advertising, and that indefinite something known as newspaper prominence, which is called advertising by the fellow who can't get it, and is considered a laudable enterprise by the fellow who does—the old story of the pigs in the clover patch. As is true of all other affairs in human life, it is a noteworthy fact that it is the pigs outside the fence that do most of the squealing.—*Charlotte Med. News*, May, 1901.

Drugs Taken by a Nursing Woman Which Affect the Nursling.

The following drugs have been found in milk: The purgative principles of rhubarb, senna, and castor oil.

Antimony,	Mercury,
Arsenic,	Copaiba,
Iodin,	Garlic,
Bismuth,	Cocain,
Turpentine,	Chloral,
Salicylic acid,	Hyoseyamus,
All Bromids,	Digitalis,
All Iodids,	Atropin,
Lead,	Ergot.
Iron,	

An unpleasant, but harmless, flavor is imparted to the mother's milk from the ingestion of—

Onions,	Cabbage,
Turnips,	Cauliflower.

(Fisher:—*Infant Feeding in Health and Disease*. F. A. Davis Co., Philadelphia and Chicago.)

[Advantage may be taken of such transmission in case of less powerful drugs; the "trituration" will surely be perfect when passed through nature's laboratory. It is not advisable to risk physiological dosage of—

Atropin,	Antipyryn,
Chloral,	Digitalis,
Cocain,	Ergot,
Hyoseyamus,	

unless the infant has been removed from the

breast until all danger of ingestion is past.—*Ed. Medical World.*]

Facts About Diarrhoea.

Prof. White (University of Dublin) proved by careful detailed studies as to the action of Angier's petroleum emulsion upon the various micro-organisms that inasmuch as petroleum offers no food for bacteria, they cannot thrive in this medium; consequently petroleum is both aseptic and antiseptic. By an elaborate series of laboratory experiments, he found that the petroleum emulsion inhibited alcoholic, lactic and butyric fermentation, as well as growth of putrefactive bacteria, which have their natural habitation in the intestinal canal.

Dr. W. D. Robinson, a well-known authority on diseases of the stomach and intestines, states in the *Medical News* (July 14, 1900): "I have extensively given petroleum and salol four times a day, and reclaimed the oil from the feces and found it to contain some salol and its components, phenol and salicylic acid. This proves the carrying of a chemical antiseptic and anti-ferment through the entire canal. It is a solvent of iodine, sulphur, betanaphthol, naphthaline, menthol, thymol, camphor and iodoform." By combination of any of the antiseptics mentioned with petroleum a germ-free condition of the intestinal canal is assured, and which is not, according to the highest authority, obtainable by any other means.

Dr. Fothergill, Director of the Clinical Laboratory, Manchester Hospital, England, employed the unusually large resources of his clinic to determine how infantile diarrhoea could be satisfactorily treated. This authority reported (*Medical Chronicle*), "Petroleum emulsion was used in thirty-four cases. One child died. In the remaining cases recovery was rapid and complete. There was no derangement of the stomach, vomiting ceased almost before the diarrhoea was checked, and the stools soon recovered their normal color and consistency. The emulsion seemed also to favor recovery from the accompanying bronchial catarrh. These experiments seem to prove that infantile diarrhoea can be treated successfully without the use of opium or astringents."

To Abort a Boil or Bone Felon.

Dr. Lummins recommends (*Med. Summary*) covering the boil or bone felon, as the case may be, with nitrate of mercury (citrine) ointment

to the thickness of an eighth of an inch. Keep this ointment in place for eight hours by a non-absorbent bandage, and thus renew the ointment every eight hours until all inflammatory signs disappear.

The Enno Sander Prize for 1901-1902.

The Enno Sander Prize of the Association of Military Surgeons of the United States has for 1901-1902 been generously increased by its founder to consist of a gold medal, valued at \$100, and \$100 in cash. The subject for this year is, "The Most Practicable Organization for the Medical Department of the United States Army in Active Service." The following are the conditions of the competition:

1. Competition is open to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States.
2. The prize will be awarded upon the recommendation of a board of award selected by the Executive Committee. The board will determine upon the essay to which the prize shall be awarded, and will also recommend such of the other papers submitted, as it may see fit, for honorable mention.
3. In fixing the precedence of the essays submitted, the board will take into consideration—primarily—originality, comprehensiveness, and the practicability and utility of the opinion advanced, and—secondarily—literary character.
4. Essays will consist of not less than ten thousand, nor more than twenty thousand words, exclusive of tables.
5. Each competitor must send three typewritten copies of his essay in a sealed envelope to the secretary of the Association, so as to reach that officer on or before February 28, 1902.
6. The essay shall contain nothing to indicate the identity of the author. Each one, however, will be authenticated by a *nom de plume*, a copy of which shall, at the same time as the essay, be transmitted to the secretary in a sealed envelope, together with the author's name, rank, and address.
7. The envelope containing the name of the successful competitor will be publicly opened at the next succeeding annual meeting of the Association, and the prize thereupon awarded.
8. The successful essay becomes the property of the Association of Military Surgeons of the United States, and will appear in its publications.

The Board of Award is composed of the Hon. William Cary Sanger, Assistant Secretary of War; Brigadier-General George Miller Stern-

berg, Surgeon-General United States Army, and an officer of the line to be announced later.

How to Cool Water Without Ice—A Practical Hint.

Where ice cannot be procured, water may be cooled by wrapping the pitcher containing it in a towel of loose texture which has been previously impregnated with ammonium nitrate (and dried), and moistening this with water. The same towel may be used repeatedly, after being dried each time. (*Doctor's Factotum*, July-August, 1901.)

Historical Sketch of the Plagues of the World.

Dr. Clarence L. Wheaton, Denver, Col., read this paper before the Denver and Arapahoe Medical Society, May 14, 1901, which is published in the *Colorado Medical Journal* June, 1901:

Disease will ever be man's most insidious foe, and many conflicts will he wage against it ere the expiration of his three-score and ten. We read of the struggle against disease in that hut on the lonely island of St. Helena, and are finally told that the great Emperor is dead, the modern Alexander has been conquered for the last time. We read of the great epidemics of the past, when millions of lives were sacrificed, thousands of homes laid waste, and the world seemed plunged in misery. No immunity, no respecter of person, and all susceptible.

What is more interesting than the study of disease, whether it be its past history or the study of pathological conditions as they daily present themselves to us in modern medicine?

It is not my purpose this evening to discuss the etiology of plague or its treatment, neither shall I advocate measures for its prevention, but, as the title of this paper suggests, give an historical sketch of those epidemics of disease of sufficient importance to have become a part of the history of civilization.

The word plague is defined as "any epidemic disease of high mortality"; in the broad acceptance of the term, we may recognize epidemics of disease of known origin as plagues. The disease, however, specifically known as plague is the bubo plague, or more commonly termed bubonic plague. The term plague was also applied to epidemics of disease occurring in ancient times, the etiology of which was obscure.

In the absence of any authentic clinical histories of disease epidemics of ancient times we

are led to believe that the diseases which prevail to-day in epidemic form, accompanied by a high mortality, were also prevalent during the earliest periods of civilization and progressed through the ages. Small-pox, yellow fever, cholera, bubonic plague, diphtheria, and possibly cerebro-spinal meningitis, played no insignificant role in the causation of the high mortality in the disease epidemics which history records preceding and during the Christian era. The "sweating sickness," so-called, of the fifteenth century, is exceedingly obscure in clinical details, and, profuse diaphoresis not being uncommon in many grave conditions of disease which we recognize in modern medicine, it is difficult for us to presume what clinically this disease simulated, possibly a type of military fever, such as described by Hirsch in the eighteenth century.

Petavius mentions a general plague in 767 B. C., but details of the same seem to have been lost in the realms of antiquity.

Carthage was visited by a plague in 534 B. C., and so great were its ravages that the people offered up their children to the gods as living sacrifices to appease the wrath of the deities.

In 435 B. C. Rome was visited by a devastating plague. Athens, in 430 B. C., was also visited by a plague which Thucydides describes. This plague spread to Egypt and Ethiopia.

The Greek Islands, Egypt, and Syria were visited by a plague in 87 B. C.; two thousand persons died in a single day. In the Christian era Rome was plague-stricken, ten thousand persons dying daily.

In 167, 169 and 189 A. D., plague prevailed throughout the Roman Empire. In 250 and 260 A. D. it is recorded that in the city of Rome five thousand persons died daily from the plague.

In 430 in Britain such a devastating plague visited the country that the living were not sufficient to bury the dead.

The plague of 538, which started in Europe, extended over Asia and Africa. From 740 to 744 two hundred thousand people died in Constantinople from plague. The same plague devastated Calabria, Sicily and Greece.

In 772 Chichester, a city in England, was visited by the plague, resulting in a mortality of thirty-four thousand, and in 954 Scotland lost forty thousand.

The London plague of 1111 extended to cattle and fowls.

The "black death" of Italy, in the fourteenth century, by its high mortality was made memorable. This plague extended to Britain and Ireland, two hundred persons dying daily in the city of London. In 1407 London lost thirty thousand persons by pestilence.

In 1383 Ireland was visited by a pestilence called the "fourth great plague." Oxford was ravaged by a plague in 1471, and the plague of England in 1478 is said to have destroyed more lives than were lost in the wars of the preceding twenty years.

In 1485 a pestilence under the name of "sweating sickness" visited London with a very high mortality.

History records the flight of Henry VII. during the plague of 1500.

The "sweating sickness" seems to have been a disease of extreme virulence, causing death within a few hours. It visited London in 1506, and 1517 Oxford was depopulated by it. England was again visited by this plague in 1528 and 1531.

In 1625 London was revisited by a plague resulting in a mortality of thirty-five thousand. In 1672 sixty thousand people died in Lyons. A plague visited Naples about this time, resulting in the death of four hundred thousand people within six months. In 1664 the greatest plague that ever visited London is recorded, one hundred thousand of the inhabitants dying.

Marseilles was visited by the "black death" in 1720, sixty thousand of the inhabitants perishing.

Moscow was visited in 1771 with a terrible mortality.

1773 eighty thousand inhabitants of Bossora, Persia, died of plague.

1793 the Egyptian plague carried off eight hundred thousand persons.

Cholera first appeared in England at Sunderland, October, 1831, and in North America at Quebec in June, 1832. It became epidemic in Bengal in 1817, spreading to Russia and Germany. In 1831 it carried off nine hundred thousand persons. In 1832 it appeared in New York, and in 1834-'49 and in '66 it reappeared. In 1848 over fifty thousand perished from cholera in England and Wales.

The yellow fever epidemic of '78 in the United States reached a mortality of over fourteen thousand, its first appearance in this country being in 1699.

Returning to the sixth century, we find that

the bubonic plague first visited Europe at that time. It remained for a thousand years, subsequently appearing in Egypt, Turkey, and Persia, resulting in a high mortality. Outbreaks of fatal pestilence have occurred in Russia, Poland, Hungary and in other countries where large masses of the people live in poverty and filth.

In this century bubonic plague has prevailed at Bombay, Peking, Hong Kong and Manila. In the latter city a summary of bubonic plague for the last year shows that 271 cases were reported, 186 Chinese, 82 Filipinos, and 3 Americans, of whom 199, or 73 per cent., died.

March 16, 1900, the first case of bubonic plague was reported in the city of San Francisco, brought to this country from the Orient. Since the report of this case, numerous others have developed, but the prompt action of the health authorities has prevented its introduction into other large cities.

The United States has been relatively free from pestilence, and few, if any, epidemics indigenous to its soil are recorded. Yellow fever was introduced from the West Indies, but yellow fever at its worst never approached the plagues of the old world in direful power.

From the foregoing sketch of the most notable epidemics of disease recorded, it is not surprising that a populace became panic-stricken in the face of such ravages.

We wonder if the gentlemen opposed to vaccination, opposed to vivisection, opposed to scientific investigation or anything that has to do with science, we wonder if they know, and knowing do they care, whether the disease epidemics of the fourteenth century sacrificed twenty-five million human lives or not? Do they know that original scientific investigation and the application of the principles derived therefrom to modern medicine are essential to success in combatting disease?

Out of the darkness there comes the dawn of the new century with its millions of homes with books, thousands of villages with schools, millions and millions of men and women in whose future there shines a star. The ignorant and superstitious and those who endeavor to retard the progress of science have no place here. The funeral pyre of the witch and the sorceress no longer flashes into the night. We assign rational causes for disease and superstition fades away, knowledge progresses, and scientific facts ac-

cumulate, we apply them to modern medicine and to the principles of sanitation.

Disease epidemics such as darken the chapters of the old world's history will never be experienced by ourselves or our posterity.

Diagnosis of Diabetes.

Dr. H. S. Stark calls attention to the following signs and symptoms of diabetes mellitus which are not discussed in most of the textbooks: Periodic attacks of headache in obese subjects over thirty-five years of age; extreme and lasting fatigue after a short but violent exercise, and prolonged fatigue, say, of one or two days' duration following a slight exertion; slowly failing vision in the aged or quick failing vision in the young; certain signs referable to the mouth, such as acid saliva, receding gums, fissured and extremely reddened tongue. This is a combination frequently encountered in middle-aged women. Two varieties of symptoms are referable to the heart and its functions—the one set simulating an attack of angina pectoris and a second set presenting the physical signs of arteriosclerosis, or of cardiac hypertrophy. This latter set of cases may be met with not infrequently in obese male subjects with florid countenances and with otherwise healthy appearances. Another train of symptoms is referable to the nervous system. There are present marked nervousness and physical disturbances; the patient is usually an old man of an ungovernable temper, is easily irritated, and, besides, is impatient, has a morose expression and lacks cheerfulness. Still other symptoms, which should put the clinician on his guard, are premature greyness, premature sexual weakness, diminished patellar reflex, slow healing of wounds, cramps in the calves of the legs in the morning hours, accompanied by muscular weariness.—*St. Louis Med. Review*, July 27, 1901.

The Tongue and Hydrogen Di-Oxide.

A curious phenomenon is observable in regard to the tongue when per-oxide of hydrogen is administered for long periods in medicinal doses. It becomes moist and of milky whiteness, the fur, as it is commonly called, becoming whiter than cream. At first I thought this appearance might be connected with the disease, although to my eye it was novel; but it has recurred so steadily and, for so many times, after the peroxide administration, there can be no doubt as to its being the effect of definite cause. It has

been most manifested in cases of enteric fever in which the medicine has been given in two-drachm doses of ten volumes strength, well diluted, every four or six hours for several days, and it is a good sign the remedy is having the desired effect. No harm is indicated by the appearance, but it is proof of a favorable condition when the breath is free from taint, and the teeth of sordes. After the remedy is withdrawn, the white condition clears off, in six, or seven days, leaving a moist, clean surface.—*Detroit Med. Journal*, July, 1901.

Luxation of the Patella

Is traumatic, congenital, or pathological. Traumatic luxation, when not treated, tends to become habitual. Congenital luxation may also become habitual, in the later years of life. Pathological dislocation of the patella is generally habitual. Friedlander reports cases of congenital dislocation of the left patella, and double pathological dislocation. The first was seen in a child of 12, with dorsal scoliosis and decided deformity of the thorax. Accidentally, luxation of the left patella was discovered, which had never caused any trouble. She only noticed that it slipped out of place on rapidly running down stairs. With extension, it always slipped back into place. The internal condyle on the left leg was noticeably more prominent than on the right, the external condyle being markedly flattened. On bending the left knee, the patella rotates outward, causing a projection to the left side of the knee. The second case occurred in a girl of 12, who had double congenital dislocation of the hips until 5 years of age. Following operation, ankylosis of both hips resulted, so that standing and walking are very difficult. Only this year was the double luxation of the patella noted. Her brother, six years older, had had the same operation performed for congenital dislocation of one hip, with resulting ankylosis and luxation of the patella of that leg later. The ankylosed hips stand at an angle of 20 degrees, and there is slight compensatory lordosis. The luxation of the patella occurs whenever the knees are bent. The knee joints look flat. With extension, the patella returns into place. In these cases the *dislocation is outward*, as is most common. The tendency toward the "knock knee" position in girls is considered a cause of the luxation, as is traumatism in men. It is also due to changes in the configuration of the ends of the bones forming

the joint, and to an enlarged and flaccid condition of the joint capsule. Neither rachitis nor heredity have any influence etilogically. But in the second case a congenital disposition to luxation of the patella existed, probably aided by the changed muscle action due to the ankylosis of the hip-joint. The prognosis of untreated cases is bad. Massage, gymnastics, and bandages may aid, but operation will probably still be necessary. Friedlander advises *Hoffa's modification of the Le Deutu operation* in both cases. A table of the 43 cases of habitual outward luxation of the patella collected follows.—*Phil. Med. Jour.*, July 27th.

A Laboratory for Poisons.

It's a wonderful laboratory, this human body. But it can't prevent the formation of deadly poisons within its very being. Indeed, the alimentary tract may be regarded as one great laboratory for the manufacture of dangerous substances. "Biliousness" is a forcible illustration of the formation and absorption of poisons, due largely to an excessive proteid diet. The nervous symptoms of the dyspeptic are often but the physiological demonstrations of putrefactive alkaloids. Appreciating the importance of the command, "Keep the bowels open," the physician will find in "Laxative Antikamnia and Quinine Tablets" a convenient and reliable aid to nature in her efforts to remove poisonous substances from the body. Attention is particularly called to the therapeutics of this tablet. One of its ingredients acts especially by increasing intestinal secretion, another by increasing the flow of bile, another by stimulating peristaltic action, and still another by its special power to unload the colon.

New Orleans Polyclinic.

Fifteenth annual session opens November 4, 1901. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work.

For further information, address Dr. Isadore Dyer, Secretary, New Orleans Polyclinic, Post-office box 797, New Orleans, La.

Book Notices.

Retinoscope (or Shadow Test) in the Determination of Refraction at One Meter Distance, with the Plane Mirror. By JAMES THORINGTON, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. *Fourth Edition. Revised and Enlarged. Fifty-One Illustrations, Twelve of which are Colored.* Philadelphia: P. Blakiston's Son & Co., 1012 Walnut street. 1901. Cloth. 8vo. Pp. 89. \$1.

The first edition of this monograph was issued in 1897. It is a study of the retina in its relative position to the dioptric media, as distinct from skiaseopy. The successive editions of the work have been revised and enlarged. The author should feel especially complimented that there is now a demand, and preparations have been made for translations of his work into both the French and German. The work is of special interest to the technical ophthalmologists of the world.

Text-Book of Gynecology. Edited by CHARLES A. L. REED, A. M., M. D., President of the American Medical Association (1900-1901); Gynecologist and Clinical Lecturer on Surgical Diseases of Women at the Cincinnati Hospital; Fellow of the American Association of Obstetricians and Gynecologists; Fellow of the British Gynecological Society; Corresponding Member of the National Academy of Medicine of Peru, etc. *Illustrated by R. J. HOPKINS.* New York: D. Appleton & Co. 1901. Cloth. 8mo. Pp. xxv—900.

This splendid work on the diseases of women is intended, so we note in the preface, especially as a text-book for students, and as a working manual for practitioners of medicine. That it will serve well its purpose, we feel assured. From the fact that the editor secured, in the preparation of his book, contributions—including his own—from thirty-one authors of recognized ability, he has been able to embrace in this volume the best approved developments of gynecology, including those of a later date than can usually be included in a work of similar magnitude by a single author. The division of labor has insured a careful preparation of copy in the shortest possible time.

Several of the writers are not strictly gynecologists, but have instead written variously—each upon his special topic of medical science—pathology, bacteriology, dermatology, neurology, etc., as the case might be—in its synthetic relation to gynecology. As a consequence, a single

chapter in some instances is based upon the contributions from several writers, while the whole has been rendered consecutive, systematic, and homogeneous by the editor, and is not, therefore, in any sense a mere aggregation of monographs.

The book is well illustrated with 356 cuts. The whole subject matter is gotten together in such a splendid manner, and there are apparently so few errors, that it is hard to realize that this is only a first edition.

International Clinics. A Quarterly of Clinical Lectures and Especially Prepared Articles by Leading Members of the Medical Profession Throughout the World. Vol. I. Eleventh Series. 1901. Edited by HENRY W. CATTELL, A. M., M. D., Philadelphia. U. S. A. *With the Collaboration of Eight Prominent Medical Authors of United States, Canada, France, Scotland, and England.* Philadelphia: J. B. Lippincott & Co. 1901. Cloth. 8vo. Pp. 312.

Such volumes as this are always valuable, as they contain the most advanced views of advanced authors. Sixteen distinguished doctors from different sections—England, France, Italy, as well as America—are the contributors to this volume; and they noted little else than that which has developed into a real advance. The publication is a quarterly one, containing clinical lectures and especially prepared articles on medicine, neurology, surgery, therapeutics, obstetrics, pediatrics, pathology, dermatology, diseases of the eye, ear, nose, and throat, and other topics of interest to students and practitioners. Beside the especially prepared articles, the usual annual *Review of the Progress of Medicine During the Year 1900*, by Dr. N. J. Blackwood, of the United States navy, is worth the cost of the book. This summary is made in a little more than 100 pages, and well represents what has been accomplished in medicine during the past year.

Text-Book of Ophthalmology. By JOHN WRIGHT, A. M., M. D., Professor of Ophthalmology and Clinical Ophthalmology in Ohio Medical University; Ophthalmologist to the Protestant Hospital, Columbus, Ohio, etc. *Second Edition. Thoroughly Revised. With 117 Illustrations.* Philadelphia: P. Blakiston's Son & Co., 1012 Walnut street. 1900. Cloth. 8vo. Pp. 378. Price, \$3.

While this book is sufficiently technical and systematic to serve the purposes of a text-book in ophthalmology for college students and specialists, "particular endeavor has been made to

place before the profession the latest and most improved treatment for many affections of the eye which usually come first to the attention of the general practitioner, and which he may, as a rule, diagnose and treat to a successful issue." Such affections particularly referred to are the purulent ophthalmias, as conjunctival granulations, corneal ulcer, interstitial keratitis, iritis, and glaucoma—any of which, if neglected in the incipency of the affection, often results in irremediable blindness." Plain and simple, but practical, tests for refractive errors and insufficiencies of the ocular muscles have been devised with which the physician may readily ascertain if there exists an ocular defect, when, if it is not within his province to apply the proper remedy, he may refer his patient to the eye specialist. This book is, therefore, of special service to the general practitioner, as well as to the doctor who limits his practice to diseases of the eye. Descriptions are plain and clear, and the treatments advised are well sustained by experience and observation. This is a book of much utility to the general practitioner, as well as to the specialist in eye work.

System of Practical Therapeutics. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and *Materia Medica* in Jefferson Medical College of Philadelphia, etc. *Second Edition. Revised and Largely Rewritten. Vol. III. With Illustrations.* Lea Brothers & Co., Philadelphia and New York. 1901. Large 8vo. Pp. 841. Cloth.

This Volume III is one of great value to the physician, surgeon, obstetrician, and specialist in genito-urinary, rectal, and eye, ear, nose, and throat diseases. Indeed, the chapter on "Peritonitis, Non-operative and Post-operative; Appendicitis, Paratyphlitic Abscess, and Obstruction of the Bowels," is an exceedingly valuable one to both physician and surgeon; and having Dr. George Ryerson Fowler as its author, reliance may be placed in its teachings. The progressive steps of the operative technique of appendicitis are illustrated by sixteen full-page plates. These drawings are of such a progressive character—from the original incision to the sewing up of the wound—that the young surgeon must recognize their value as right next to seeing the operation done by an expert surgeon. Most of the other chapters are of the highest degree of merit. Especially may we refer to Dr. Joseph M. Mathew's chapter on "Diseases of the Rectum and Anus," to the

chapter on "Therapeutics of Genito-Urinary Diseases"—male and female—by Drs. William T. Belfield and E. E. Montgomery; to the chapter on the "Therapeutics of Pregnancy, Parturition, and the Puerperal State," by Dr. Edward P. Davis. We ought not to omit like commendable notice of the paper by Dr. Edward Martin on "Obstruction of the Intestines." Those chapters on the eye, ear, throat, and nose are of special importance to specialists, although Dr. Casey A. Wood, of the University of Illinois, contributes a paper on "Diseases of the Eye and Their Treatment by the General Practitioner," which is a useful one for doctors generally. The publishers have done their part well. The type and paper and binding are the perfection of art.

The Acute Contagious Diseases of Childhood. By MARCUS P. HATFIELD, A. M., M. D., Professor Emeritus of Diseases of Children, Northwestern University Medical School; Professor of Diseases of Children, Chicago Clinical School; Attending Physician, Wesley Hospital. Pages, 142. Price, \$1.00 net. G. P. Engelhard & Co., 358-362 Dearborn street, Chicago. 1901.

The diseases discussed in this little manual are: Scarlatina, Measles, Rotheln, Parotitis epidemica, Pertussis, Varicella, Variola and La Grippe. The author makes no special claim to originality of suggestion, but has compiled each subject into a well-written, practical and authoritative chapter. He has spent much effort in points of diagnosis, and in dealing with the details of treatment, etc. This book is well indexed, and well arranged, and is well up-to-date in its teachings. But its title would probably lead the casual advertising examiner to suppose that it dealt with more subjects than we find mention of in its pages. Especial pains have been taken to embody the views of later French and German pediatricians. He who buys this little book and reads it will find in it many helps.

Syllabus of New Remedies and Therapeutic Measures. *With Chemistry, Physical Appearance, and Therapeutic Application.* By J. W. WAINWRIGHT, M. D., Member of the American Medical Association; New York State Medical Association, United States Pharmaceutical Convention, 1900; American Chemical Society, etc. Pages, 229. Price, \$1.00 net. G. P. Engelhard & Co., 358-362 Dearborn street, Chicago. 1901.

This is a book very much needed by the general practitioner of medicine or surgery. Scarcely a week passes that the profession is not

introduced to some new synthetical remedy, regarding which the large text-books on *Materia Medica* and *Therapeutics* are peculiarly reticent. This *Syllabus* has information about all such newer remedies—arranged alphabetically. The author has not written in the interests of any of the manufacturing chemists of this or foreign countries, but gives the composition, the physical appearances, the physiological actions and therapeutic effects of the new drugs or chemicals—including dosage, modes of administration, etc. This *Syllabus* has proven itself a most valuable help to us. The book has no *index* of agents used, but depends upon the alphabetical arrangement of the most popular name for the new drugs—some of which have synonyms. The *Therapeutic Index*, however, is very good, and helpful to the owner of the book. The price puts it within reach of every practitioner.

Text-Book of the Practice of Medicine. By Dr. HERMANN EICHHORST, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the University of Zurich. *Authorized Translation from the German.* Edited by AUGUSTUS A. ESHNER, M. D., Professor of Chemical Medicine in the Philadelphia Polyclinic, etc. With 84 Illustrations in Vol. I, and 85 in Vol. II. *In two Octavo Volumes* of about 1,210 pages. Philadelphia and London: W. B. Saunders & Co. 1901. Price per set, Cloth, \$6 net.

This is practically a condensed edition of the author's work on *Special Pathology and Therapeutics*. It is not only an ideal text-book for students, but a practical guide of unusual value to the practising physician. The fullest and most careful consideration has been given to matters of diagnosis and treatment. Dr. Eichhorst is among the most eminent authorities of the world in what pertains to internal medicine; and this new text-book sprang into immediate popularity, and is now one of the leading text-books in Germany. Dr. Eshner's translation is easy, comprehensible reading, which cannot be said of all translations from the German. He has made additions and annotations where it seemed they might be serviceable. This text-book is written with a conciseness that is worthy of comment, and yet scarcely nothing that is important is omitted. Remarkable attention is also given to questions of treatment, which makes the book of special value to the bedside physician. The work considers several subjects which in this day of specialism are usually left over to special works. Thus appropriate sec-

tions are devoted to diseases of the skin, venereal diseases, impotence and sterility in the male, and spermatorrhœa. All such additions, however, add increased value to the work. Each of the two volumes is well indexed, and the publishers have done their part in a most creditable manner. It is about the best of the text-books on practice of medicine for the practitioner that we know of.

Oral Sepsis as a Cause of "Septic Gastritis," "Toxic Neuritis," and Other Septic Conditions. *With Illustrative Cases.* By WILLIAM HUNTER, M. D., F. R. C. P., Senior Assistant Physician to the London Fever Hospital, etc. Cassell & Co., Limited. London, Paris, New York, and Melbourne. 1901. *All Rights Reserved.* Cloth. 8vo. Pp. 30. Price, \$1.

This is a reprint of an article by the author, which appeared in *The [London] Practitioner*, December, 1900. It draws additional attention to a source of disease extremely prevalent, and most egregiously overlooked. It illustrates in a forceful manner the amount of poison absorbed into the system from diseased teeth, gums, etc. This article is a timely one, and calls attention to a very much neglected but easily removable cause of disease. But we fear that the price of an article of so few pages will prevent its general purchase. It is, however, worth every cent of its advertised price to the physician, surgeon, dentist, etc.

Editorial.

Library of the Medical Society of the County of Kings.

This library was founded in 1845. When its original quarters became inadequate, the Society erected the present absolutely fireproof structure at 1313 Bedford avenue, Brooklyn, N. Y., which, in taste and completeness of equipment, equals any medical library building in the world. This library of over 30,000 volumes, 15,000 pamphlets, and some 500 current medical periodicals, was opened free to the public in May, 1901. In addition to the latest publications, the collection is especially rich in classics. The earliest printed volume is a folio published in 1474. This library is open free to the public daily from 10 A. M. to 10 P. M.—Sundays and legal holidays excepted. Books are loaned to members of this and affiliated societies of Long Island upon application to the librarian. Ap-

peals are made for contributions of money and of medical books, etc. All cost of transportation of books or odd numbers of journals, pamphlets, etc., is cheerfully assumed by the library, if desired. The success of this medical library has exceeded all expectations. Its variety of books makes it the medical consulting-room of the entire section of country.

Dr. Robert J. Preston, Superintendent of the Southwestern State Hospital, Marion, Va.

Has, as we fully expected from our knowledge of his high integrity, been completely exonerated of the charges preferred against him by his former first assistant, Dr. Z. V. Sherrill. The Board of Directors, whose duty it was to make the investigation, after having heard all the evidence, pro and con, in their telegram to Governor Tyler reported that the charges were not sustained.

Dr. Preston has for many years been prominent among the alienists of the Eastern States, and in Virginia he is recognized by his brother doctors as both capable and a good doctor. We have yet to meet a man in all things perfect, and we suppose that Dr. Preston, like other humans, has made some mistakes. However, from a knowledge of the man, we are confident he has neither done nor allowed—so far as he could prevent—anything to be done which would be reprehensible. We further believe that in Dr. Robert J. Preston the State of Virginia has an efficient and faithful officer. In evidence of the esteem in which Dr. Preston is held by the profession at large, he was elected president of the American Medico-Psychological Association during its late meeting in Milwaukee, Wis.

St. Luke's Hospital, Richmond, Va.

This private sanitarium, under the care of Dr. Stuart McGuire, after a most successful year, will close on the first of August, to reopen about the middle or latter part of September. During this vacation a new passenger electric elevator will be installed, and the building painted and renovated throughout. It will be remembered that this is the sanitarium founded by Dr. Hunter McGuire many years ago, and the new building at 1000 west Grace street was finished and occupied only about a year preceding his death last year. Dr. Stuart McGuire, with a corps of able assistants, has carried out the ideas of his father in making the present sanitarium one of the most perfect and thoroughly equipped of such institutions in the country,

and the record of this hospital during the past year or two shows the benefits of such thorough equipment and excellent management.

The Journal of Physical Therapeutics

Is the name of a new exchange published in London, England, as an international quarterly review, dealing, as its name indicates, with physical remedies as they relate to the treatment of disease. In its special line, the *Journal* fills a gap in medical journalism which should make it useful, and at the same time profitable. Dr. W. S. Hedley is editor, with Dr. M. A. Cleaves, of New York city, associated as American editor.

Farbenfabriken of Elberfeld Co., 40 Stone Street, New York.

Has won its suit against Conrad D. Maurer, in the United States Circuit Court for the Eastern District of Pennsylvania, sustaining their patent as to the sole right to manufacture Phenacetin and to sell it under this name. The company gives notice that, "having given full warning to the trade, we expect them to respect our patent, as we intend to enforce our rights under it to the full extent of the law." We trust infringers will stop their foolish substitution of less than phenacetin. It is too valuable an agent to do less for the retailers to caution them not to buy spurious articles of phenacetin.

The Medical Mirror

Has been moved from St. Louis to 100 William street, New York city, where it continues under the business management of Mr. A. P. Hafner. This journal, better known as "*Love's Medical Mirror*," remains under the editorial charge of Dr. I. N. Love, who also has moved from St. Louis to No. 537 Fifth avenue, between Forty-fourth and Forty-fifth streets, New York city. The journal has a fine record, and its editor more than a national reputation.

The Pan-American Exposition at Buffalo, N. Y.

Is reported by all who have recently visited there to be something superb, and in every way a great success. All exhibits are now completed, and appear to the best advantage possible.

A gate fee of fifty cents for adults and twenty-five cents for children under fourteen years of age is charged all who enter the grounds; and this fee entitles the visitor to go through the numerous exhibit buildings absolutely free of other expense. The various private enterprises

on the grounds, such as the Midway, etc., are extra, and charge small admittance fees, ranging from ten to twenty-five cents.

Virginia Day is August 23d, at which time Governor Tyler will attend, accompanied by his staff and a military body guard.

The Pharmaceutical Association of the State of Virginia

Adjourned their twentieth annual meeting at Elkton, Va., July 20, 1901. It is said that this session was particularly interesting and enjoyable.

The new officers are: *President*, E. S. Robey, Herndon; *Vice-Presidents*, John L. Hagan, Danville; N. B. Schmitt, Woodstock; *Secretary*, C. B. Fleet, Lynchburg; *Treasurer*, C. H. Lumsden, Lynchburg. *Executive Committee*, T. A. Miller, Richmond; J. W. Watson, Richmond; Richard Gwathmey, Richmond.

There were several candidates for vacancies in the Board of Pharmacy.

Medical Society of Virginia.

It looks as if the meeting of this Society in Lynchburg, Va., November 5, 6, and 7, 1901, will be a great success. The Lynchburg doctors have been at work for some time with reference to this meeting, with Dr. C. E. Busey as chairman of the Committee on Arrangements. A number of Fellows have already filed with the Secretary titles of papers to be prepared for the session. No more active, energetic, discrete officer could be in charge of the affairs of the Society than the President, Dr. J. R. Gildersleeve, Tazewell, Va.

The Report of the Medical Examining Board of Virginia

Has been delayed by the failure of some of the Examiners to make their reports to the Secretary of the Board, Dr. R. S. Martin, Stuart, Va. We hope to present the results of the examinations held during June at Staunton in our next issue.

Bow Legs—Location of Deformity—Its Causes.

Dr. James J. Larkin, Davis Block, Commercial avenue and Ninety-second street, Chicago, Ill., is investigating the subject of *Bow Legs*. The particular point he wants cleared is whether the deformity is *above, at, or below the knee*. He also wants to know *something of the causes* that produce it. He does not seek this informa-

tion to clear up a disputed point in any particular case; so the doctor who gives the information desired by Dr. Larkin need not fear being quoted. Dr. Larkin has access, of course, to the literature and reports of so-called authorities; but he very much desires the conclusions of observers who are not self-styled authorities.

The Mississippi Valley Medical Association

Will hold its twenty-seventh annual meeting in Hotel Victory, Put-in Bay Island, Lake Erie, Ohio, September 12th-14th, 1901. Dr. J. C. Culbertson, Hotel Victory, Put-in Bay, Ohio, is chairman of the Committee of Arrangements. Dr. A. H. Cordier, Kansas City, Mo., is *President*; Drs. C. F. McGahan, Aiken, S. C., and C. L. Minor, Asheville, N. C., are *Vice-Presidents*; Dr. Henry E. Tuley, 111 west Kentucky street, Louisville, Ky., *Secretary*; Dr. Dudley S. Reynolds, Louisville, Ky., *Treasurer*.

The meetings of this Association have always been replete in scientific work, and indications point to this one being of greater interest than any of the others. Titles of papers, accompanied by abstracts for publication on the programme, should be sent to the secretary not later than August 1, 1901. The annual address in medicine will be made by Dr. Frank Billings, of Chicago. The opportunity of combining pleasure with scientific work is given by the place of meeting, and by the proximity of Buffalo, where can be seen the great Pan-American Exposition. Reduced rates of travel to the exposition have been secured. Every regular doctor in affiliation with his State medical association is invited to be present. Only the preliminary announcement is out, from which this announcement has been made.

Dr. Thomas D. Crothers,

Superintendent of Walnut Lodge Hospital for Alcohol and Opium Inebriates, Hartford, Conn., is the subject of a biographical sketch and a good engraving in the *Kansas City (Mo.) Medical Index-Lancet* for June, 1901. He has done more honest, sensible professional work for the relief of the inebriates of the classes named than any of the profession. He was appointed editor of the *Journal of Inebriety* in 1876—the first medical journal ever published, devoted to the drink problem and the treatment of inebriety—which is continued up to the present. For many years, Dr. Crothers has been the leading authority in this country on these subjects.

Dr. Richard Douglas,

Who has been filling the chairs of Abdominal Surgery, Gynecology, and Obstetrics in Vanderbilt University, has resigned his position as professor in the medical department of that institution. He has been a member of the faculty since the foundation of the department. He has always been a great favorite with the students, and his action in resigning will be deeply regretted by them.

Dr. Koch Advances a New Idea on Tuberculosis.

At the session of the British Congress of Tuberculosis held in London July 23, 1901, Dr. Robert Koch read a paper, in which it is interesting to note he argues that human tuberculosis and bovine tuberculosis were radically different diseases. He had amply demonstrated, so he thought, that cattle could not be infected with human tuberculosis; but that human beings were not liable to infection from bovine tuberculosis was, he said, harder to prove, because of the difficulty of experimenting upon human subjects. He related certain post-mortem conditions found to sustain this opinion, and stated that personally he was satisfied such transmission of the disease does not occur. We trust that Dr. Koch is correct in his supposition, for the matter of prophylaxis would be considerably simplified. We feel, however, there is something incongruous about his statement, for, if the diseases are radically different in man and beast—in other words, if they are different diseases—then the germs causing the diseases must be different. Reasoning thus, if the one which is thought to cause tuberculosis in man is tubercular, what has heretofore been called tuberculosis in cattle is not tuberculosis, but is, instead, some other disease, produced by some other but similar appearing bacterium. Otherwise this specific pathogenic germ would not conform to one of the fundamental requirements of Koch's law—viz., "When introduced into healthy animals it must produce the disease." And right here it is to be remembered that neither man nor cow is considered immune. Why uncooked tubercular meat when eaten by a person cannot cause—under proper conditions, suitable soil, etc.—bowel or other form of tuberculosis, will be hard to explain. So firmly rooted is the idea that such is the case, that some proof will be necessary before practitioners will accept as true a theory which teaches that tuberculous

meat and dairy products generally are not one of the causes of this dread infection.

Dr. Koch, like most physicians at the present day, thinks the chief source of danger is from the sputum of consumptives, and, as a precautionary measure, he advises the passage of certain prohibitive laws concerning the expectoration of consumptives, besides making obligatory notification to health officers, that they may disinfect and take other proper steps to eradicate the disease wherever existing.

Heredity as an etiological factor, as has been taught in recent years, he classes as unimportant.

Obituary Record.

Dr. Philip Alexander Taliaferro

Died very suddenly on the evening of June 27, 1901, while in his boat crossing North river from Matthews to his home in Gloucester county, Va. He was 74 years of age.

Dr. Taliaferro was an A. B. of William and Mary College. He studied medicine at the Medical College of Virginia, University of Virginia, and Jefferson Medical College in Philadelphia, and spent two or three years in the medical schools and hospitals of London, Paris, and Dublin. When he returned to Virginia, he settled down to practice medicine in his native county. During the first two years of the civil war he served on the staff of his step-brother, General Wm. B. Taliaferro, as aide-de-camp. After the evacuation of the Peninsula in Piedmont, Va., he resigned his commission in the army, and returned to his home to resume the practice of his profession among his defenseless people. Dr. Taliaferro had many charitable impulses, and was held in affectionate esteem by those to whom he ministered.

Dr. Thomas J. Cheatham

Died July 13, 1901, at his country home near Chesterfield Courthouse, Va., aged seventy-four years. Dr. Cheatham graduated in medicine in 1850 at the Medical College of Virginia. He was elected Fellow of the Medical Society of Virginia in 1899. He is survived by four children, his wife having preceded him to the grave by only a few months. He was prominent in the affairs of Chesterfield county for many years, and he will be missed, especially by the poor who lived near his home.

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MALARIAL INFECTION AND ITS PREVENTION.*

By WALTER SHROPSHIRE, M. D., Yoakum, Texas.

The presentation of this subject needs no apology, for, in our semi-tropical country, malaria is first in importance to you all; and from a universal standpoint, tuberculosis alone ranks it in fatality, suffering and financial loss. Yet our regard for malaria recalls to me Pope's description of vice.

"Vice is a monster of so frightful mien,
As to be hated, needs but to be seen;
Yet seen too oft, familiar with her face,
We first endure, then pity, then embrace."

Two years ago, when a hundred deaths occurred in our State from cerebro-spinal meningitis, it stirred our population from centre to circumference, while at the same time a thousand deaths from malaria received scarce a notice.

Unfortunately our country, which boasts of its progress in civilization and its leadership in all things for the good of its people, does not even collect vital statistics wherefrom to recognize their greatest danger or menace. Therefore we must borrow from less civilized communities, such as India, statistics from which to estimate our causes of death. In 1897 India had 5,026,725 deaths from malaria, and of an army of 178,197 men 75,821, or nearly half, were confined in hospital from malaria during the same year. The Southern portions of our country, our State included, have a climate similar in a degree to the Indian, and suffer from malaria almost as severely.

From a financial standpoint, too, the disease

claims some attention, for vast areas of the most fertile lands of our State, capable of producing anything from roses to pickaninnies, are practically uninhabitable because of the severe malaria prevalent there. Instead of spending more time in dilating on the importance of the subject, let us turn to the subject itself, briefly reviewing its history and marking the principal steps in the evolution of our knowledge of it.

The great questions, "What is malaria? How cured? How prevented?" confronted civilized communities before the dawn of the Christian era; for about 100 B. C., Varro described malaria as a disease produced by some animalcule abounding in swampy districts and entering man through the nose and mouth.

Italy records the early history of malaria, and we derive the greater portion of our knowledge from the Romans, until the advent of the eighteenth century, when the science became widespread, and all countries and climes joined in the investigation.

In following up the history of the now science of malaria, I shall endeavor to point out the milestones in the progress about which to group lesser yet important facts.

Up to the time of the great Italian physician, Torti, 1640 to 1712 A. D., malaria was so confused with other febrile conditions that the knowledge of it was but a rough material, from which a science was to be born. But with the discovery of quinine, and its introduction into civilized countries, the subject was given a powerful impetus. Torti discriminated between quinine fevers and others—*i. e.*, he differentiated between malaria and other febrile conditions, and described it so well that all students could recognize it readily, and with a fair degree of certainty. Thus, at the close of the seventeenth century, Torti planted the first milestone on our road to malarial science.

Many subsequent observers made short steps further toward the solution of the great malarial

*Paper read by assignment at Texas State Medical Association, held at Galveston, Texas, April 23, 24, 25, and 26, 1901.

questions by observing its continual association with low-lying, water-logged areas and warm climates and seasons, and the fact that when patients suffered from the disease in high, arid locations or cold seasons it was invariably a relapse, until marshes in warm climates became known as malarious places. Again, the enlargement of the spleen and liver was observed, and serious suspicion of these organs arose as the cause, and, if not the cause, the nidus for the development of the malarial poison. Thus attention was called to these organs, where frequent autopsies revealed a darkened or bronzed condition, and in cases of long duration, or great intensity, sclerotic and necrotic spots.

These observations culminated in the second milestone in the progress to the malarial disease—the discovery in 1848 by Meckel, substantiated by Virchow the following year—of the fact that the bronzing of the spleen and liver is due to a peculiar dark pigment characteristic of malaria. This coloring matter called *pigment granules* by most writers, and *melanin* by Ross, soon became the ear mark of the malarial disease, and laid the foundation for more important discoveries. This melanin was so studied that autopsists knew just where to find it, and could determine whether or not the subject was a victim of malaria. In fact, its becoming so universally recognized as the foot-print of malaria, research was stimulated in the direction of the next great advance—that of blood examination.

In 1880 Laverne planted the third great milestone when he discovered in the red blood corpuscle of malarial patients that hyaline mass which manifests the characteristics of the amœba and develops the melanin or pigment granules—in other words, when he discovered the *plasmodium malariae*—the true and only cause of malarial fever.

As if by magic, the whole army of students of malaria appropriated Laverne's knowledge and rushed forward with their investigations, until, in a short time, a vast amount of knowledge concerning the characteristics of the parasite was spread broadcast by the many most deserving and creditable investigators, of whom I shall mention Grassi, Bignami, Koch, Thayer, Pfeiffer, Mannaberg, Ronanowski, Osler, Marchiafava, Labbé, Kruse, Dionisi, Danilewsky, Woldert, Manson, MacCallum, Councilman, and Celli, all of whom did valuable work along this line, as did many others whom I cannot mention.

But to Golgi was left the establishing of the

next great milestone, when, in 1885, he proved that the life cycle of the parasite is coincident with the clinical cycle of the disease, and that sporulation of the parasite marks the onset of the disease—*i. e.*, that its breaking up into 12 to 18 small particles, its crop of young, and the destruction of the containing corpuscle, sets free into the blood a poison that causes a chill, followed by fever.

Even the earliest observations of the parasite in its cycle in man revealed crescent and granular forms that seemed functionless so long as they remained in the vertebrate host. These bodies, which we shall call *gametocytes*, after Ross, in contradistinction to sporocytes, those that sporulate in man, were observed after remaining outside of the vertebrate host 15 or 20 minutes to flagellate—*i. e.*, to put out buds which soon become long filliments, remaining in almost constant, violent motion. These phenomena, together with the apparent functionless existence in the blood, led to much theorizing and discussion as to their ultimate purpose. The Italians believed them to be degenerate forms, while Manson, Ross, and others of England, and the observers of this country, were of the belief that these forms were destined for some vital role in the propagation of the species.

The flagella had frequently been seen to break away from the parent cell and rapidly traverse the field of observation. But MacCallum made the next step forward when, in 1897, he observed a flagella to leave the parent cell, approach and enter one of these granular bodies, which had been observed not to flagellate, causing the most significant manifestation of excitement. Shortly after the impregnated cell became motile, having the power of locomotion and of destroying almost any cell it came in contact with. In other words, MacCallum saw the male form or microgamete impregnate the female or macrogamete, and produce the germinating form, named *vermiculus* by himself, and *zygote* by Ross, a new cell possessed of new life and activity.

From the time of Laverne's discovery another phase of the malarial question claimed thought and investigation, and each advance in the discovery of the life cycle of the parasite lent new ideas and evidence for its solution. It was, how malaria enters man and how leaves him. MacCallum's discovery demonstrated that the parasite has a life outside of the vertebrate host, for which the perplexing granular bodies are des-

tioned, which, with many other facts, stimulated a search for the other life cycle of the parasite, and its mode of entering man.

Suspicion pointed strongly toward the blood-sucking mosquito for many reasons, among them the invariable association of the insect with the disease so forcibly pointed out by King, of Washington, D. C., in 1883. Furthermore, Smith and Kilbourne had proven a similar disease to be conveyed from cow to cow by a blood-sucking insect, when they showed that the germ or cause of Texas cattle fever, the *Pyrosoma Bigeminum*, uses *Boophilus Bovis*, or common cow tick, as an intermediary host between cow and cow; and Mansen had proven the mosquito to carry *Filaria Nocturna* from man to man. To prove this suspicion correct, and to discover the life outside of man, seemed, however, an insurmountable difficulty. But there rose one from the ranks from our cherished profession equal to the task, and after nearly three years of laborious research, success crowned the efforts of Surgeon-Major Ronald Ross. During his research Major Ross dissected thousands of mosquitoes that had been fed upon malarial subjects, examining them cell by cell, finally finding in the stomach walls of a certain variety, the anopheles, some cells that bore the ear mark of malaria, the characteristic melanin or pigment granules. From this he traced the whole process, from the impregnation of the macrogamete by the microgamete to the stage where the numerous blasts or filliform young are packed in the venemo-salivary gland of the mosquito, from which they must be injected into each and every victim of her voracious appetite.

The process is briefly this: The mosquito draws into her stomach with her meal of blood a number of gametocytes, where, stimulated by the stomach juices, the microgamete impregnates the macrogamete, which is then called zygote; this penetrates the stomach walls out of reach of the digestive fluids, or, possibly, to its outer surface, where it goes through the stage of gestation, as in the same process in higher life, several layers of cells, about eight to twelve, are formed, which, instead of certain tissue producers, become blastophores, to which a great number of blasts are attached, not unlike spermatozoa.

After five or six days these blastophores have disappeared, and the original capsule of the zygote is seen to be packed with little blasts. In a short time the capsule ruptures and turns loose its hundreds of blasts into the body cavity of the

mosquito; a day or so later they are found packed in the venemo-salivary glands and the duct leading from them to the middle stylet of the proboscis, so that they are injected into the vertebrate whenever the mosquito pierces the skin and injects the saliva, which fluid probably paralyzes the vaso-constrictor muscles and prevents the cessation of the flow of the blood ere the mosquito's appetite is satiated; thus Ross established the sixth great milestone in our knowledge of malaria.

For lack of space I have left unmentioned many observers closely connected with the research, and I have left untouched many features of the evolution of our knowledge that are of both interest and importance.

The foregoing history has covered the subject of malarial infection, which I consider so thoroughly established by the discoverers and their collaborators that it needs no further consideration, save, perhaps, the transmission from man to man, to which all of our members have not subscribed.

Let us consider, first, some clinical facts connected with the disease and its propagation. I would state that sleeping out of doors near marshes where anopheles abound predisposes to malarial infection; whereas sleeping in upper stories, in cities, in screened houses, and avoiding "exposure to night air," when the mosquito is active, is protective against the disease; and I am confident that no one of this body of observers will raise a dissenting voice. For generations it has been an axiom among residents of malarial localities that to stay out in swamps at night and to inhale the miasma is sure to produce the fever, while to keep indoors from sunset to sunrise prevents it; and in view of the fact that the malarial-bearing mosquito is a rural one, and feeds at night, these traditions bear weight and significance. It has been the recommendation of all sanitarians in our malaria-scourged country to "build your residence in an open, elevated place, where the wind sweeps the ground and prevents the development of malaria around your house." And every mosquito-beleaguered soul has sought just such a place of refuge for sleep. Again, the greater number of you must have observed that on our salt water coast, where the salt impregnated surface pools afford no breeding place for anopheles, and the prevailing inland breeze prevents the flight of the mosquitoes from the interior, there is less malaria than a few miles inland, where the

pools are sweet and the breeze broken by timbers offers little hindrance to the flight from breeding to feeding place. Some years since Dr. Wizaker informed me that all cases of malaria in Quintana were brought there from inland.

Just here let me quote from *Blackwood's Magazine*, January, 1865, from an English writer, who visited the Confederate camps near Charleston, S. C.: "Formerly it was considered certain death to sleep out for one night on James Island, opposite Charleston, during the malarial season."

Who doubts for a moment that in well-drained cities, where puddles suitable for the larval development of the anopheles do not exist, there is less malaria than in rural districts, where such puddles abound? But when compared with the results of scientific investigation, these arguments, which appeal to us because of our familiarity with the facts and environs, become mere straws that show which way the wind blows.

When Ross observed the hematozoa of malaria in the stomach of the anopheles and watched it go through its period of gestation, observed it set free its young, and then found these in the salivary gland and duct from which, with the injection of saliva, they were of necessity reintroduced into man, then the fact that malaria is carried from man to man by the mosquito was scientifically proven.

And when such men as Grassi, Bignami, Simond, Thayer, Osler, Dionisi, Woldert, Bastianelli, Koch, MacCallum, Labbé, and Laveran repeat these observations and confirmed the results, we are indeed skeptical if we demand more proofs. But more proofs are not lacking, for, by feeding upon infected vertebrates, such mosquitoes as he had raised from larvæ, and protected from all other sources of infection, Ross succeeded in infecting 178 mosquitoes out of 245, while of 249 mosquitoes fed on healthy vertebrates not one contained a pigmented cell. Again, out of 23 mosquitoes fed on an infected vertebrate 22 were infected, and, to carry the experiment further, he infected 22 out of 28 healthy vertebrate by the bites of infected mosquitoes.

Bignami forged another link in the chain of proofs when he infected an inmate of the San Spirito Hospital, one Abel Sola, entirely free from the parasite, by letting infected mosquitoes bite him that had been fed upon a malarial pa-

tient, the type of the disease being the same that the one had upon whom the mosquitoes were fed. Dr. Mansen, too, added new strength to the proofs. He had Bignami to send him from Rome some mosquitoes infected with tertian malaria; these mosquitoes were allowed to bite Dr. Mansen's son in Liverpool, both subject and locality being entirely free from malaria, yet tertian malaria was promptly developed.

The fact that the mosquito carries malaria from man to man being established beyond a doubt, the question arises, can man acquire it in any other manner? To answer this, Drs. Sambon and Low, of England, and Signor Terzi, of Rome, together with two domestics, spent all of last summer in the Campagna, one of the most violently malarial districts in Italy. Here they lived as was customary in the vicinity, drinking the same water and eating the same food, but allowing no mosquitoes to bite them. Were it possible to become infected in any way other than by mosquito bite, surely that Campagna, a water-logged marsh, three feet below the sea level, is an ideal place for such infection. Yet not one of the party, neither the British nor the Italians, developed the disease. With such evidence before us, all but the Ephraim, who is wedded to his idols, must accept the fact as proved.

Turning to the prevention of malaria, a subject of vital importance to all practitioners, we find a field not so thoroughly explored by the great exponents of the science, where each one of us may lend important aid toward its perfection.

At present there are two prominent theories of malarial prevention or eradication, championed by two of our leading investigators: Save possibly Laveran, Ross, by virtue of his discoveries in the science, is entitled to the first place in all things malarial, and his preventive theory shall first occupy our attention.

Having convicted the anopheles mosquito of being the host of the plasmodium during its life cycle outside of the vertebrate, and the bearer of the disease from man to man, Ross sentences the offending anopheles to destruction, a method that has to commend it some desirable extrinsic benefits as well as many practicable features.

Ross, with a corps of collaborators, together with Drs. L. O. Howard, Albert Woldert, Thayer, and others on this side, have studied the life and habits of the anopheles till it is pretty thoroughly established that they breed only in

more or less permanent puddles or runnels of water on the ground, depositing their eggs to a great extent in the places where they passed their larval stage. In his service as commissioner to West Africa of the Liverpool School of Tropical Medicine, Ross found the same pools inhabited continually by anopheles larvæ, notwithstanding their occasional destruction and the proximity of other pools apparently as well suited for their development, which, however, never contained anopheles larvæ. Again, Albert Woldert found in Philadelphia, near the League Island Navy Yard, a runnel where, during the whole warm season, he could catch anopheles larvæ, while in others near by they were not to be found, which, when we remember that the whole larval stage is only 10 to 12 days, shows that at least fifteen different crops of larvæ were grown there during the season, while the neighboring pools remained free.

These facts in the bionomics of the anopheles suggested to Ross a very vulnerable point of attack—their breeding pools and larvæ. He suggests that the pools be drained or the larvæ in them poisoned at a small cost with tar or petroleum. This is especially practicable near Beaumont at this time. While poisoning the larvæ destroys the poison bearers and rids the community of the insect pest, drainage embraces the additional advantage of general hygienic improvement. Another advantageous feature of Ross' plan is, that the Commonwealth may handle it without objection, without trespassing upon personal liberty, so dear to the hearts of man.

The cheapness of the plan will commend itself, and experiments of Albert Woldert, L. O. Howard, Fielding, Ould, and the West African Malarial Commission show that a public servant can at but small cost find the breeding places of the anopheles, and if drainage is impracticable, can treat them once a week with a little petroleum or tar. This would destroy the larvæ, prevent the development of the adult anopheles, as well as destroy many of the females as they come to deposit their eggs. The females are the guilty ones, for the males neither suck blood nor carry malaria. Large bodies of water may be planted with small fish, which feed on the eggs and larvæ, and even the adult mosquito when she comes just before dawn to deposit her eggs.

In addition, Ross recommends the assiduous use of screens and mosquito netting, together

with guard over all cases of malaria to prevent the infection of gnats that will inoculate man. All of this is very plausible, and looks at a glance adequate, but upon closer scrutiny it is not so satisfactory.

This destruction of anopheles presupposes them to be domestic insects, propagating only near human habitations, and that they fly only short distances for food, and are not carried by the winds. Yet just these suppositions are false. In numerous instances the dreaded land breeze has carried swarms of mosquitoes for miles along our coast. Theorists maintain with some degree of truth that the appearance of such numbers of mosquitoes with the land breeze is, in fact, due to the cessation of the sea breeze, which permits them to come from their hiding among the weeds and foliage becoming evident, but not really increasing in numbers, the land breeze not being severe enough to interfere with their flight; however I am sure that many of you who live in Corpus Christi, Rock Port, Port Lavaca, Quintana and Galveston, will confirm my statement that it is not land breeze of a few hours that brings the swarms of mosquitoes, but the land breeze of two or three days' duration, and in velocity equal to the sea breeze. To the casual observer this may not be patent, because such breezes are rare, but those of you who have had a more extended and careful observation will readily recall such incidents. Thus, after the anopheles near habitations have been destroyed, the winds soon bring other full-fledged females ready to receive and distribute the parasites, and contrary to the opinion among careless observers, that in ten to fourteen days after a rain the mosquitoes are all gone, the fertilized female that has been fortunate enough to secure a meal of blood will live quite a while longer, and deposit her brood in the next rain that falls and collects in hog wallows or other depressions in the ground, while the less fortunate females and the males probably die in the time ascribed by our rural observers. To Ross we owe the knowledge that the fertilized female requires a meal of blood for the development of her ova, and that each meal of blood enables her to develop another batch of ova. Another barrier to the success of Ross' plan is the fact that domestic animals which feed in the swamps during the day bring numbers of mosquitoes home with them at night, a fact that I have observed since early childhood, and which will be vouched for by all milkmaids in a mosquito-beset country.

The suggestion that the anopheles are always domestic will scarce for a moment engage our attention, for most of us have personal observation to the contrary. For myself, the greatest number of anopheles that I have ever seen to recognize I saw miles from the nearest habitation while out on a camp hunt last September.

Ross's suggestion to guard the malarial patient against the bite of the mosquitoes until the parasites are all out of his blood bears more on the vulnerable side of the question in my opinion; but if I understand Ross aright, he advises protection from the mosquito only until the patient is free of fever and all of the sporocytes have disappeared from the blood, in which case it will fall far short of success. A mosquito might eat thousands of sporocytes and never be able to infect an individual, for this form all fall victim to her digestive juices; but when she ingests two or more of the gametocytes, they begin their new cycle and laden her with blasts enough to infect many men; hence, to prevent infecting the insects we have to guard the malarial patient not only till the sporocytes are all gone, but until the gametocytes, too, have disappeared, a time as yet indefinite, and a subject to which I invite your attention.

Permit me to revert to these organisms, their life and functions, which was so cursorily mentioned in the history of the disease. Since Laveran's discovery all students of the subject have observed them floating passively in the blood, these observations culminating in MacCallum's discovery of their function. This inactive stage of drifting along the blood current, awaiting to be removed to a new life by the anopheles, seems to be a period, not of days, but of weeks and months; therefore to prevent the infection of mosquitoes we have to keep the once malarial patient out of reach of female anopheles till the remaining capsule of the erythrocyte, which seems only the outside membrane of the original blood cell, is, as it were, worn away; and the indefatigable leucocyte recognizes the enemy that has been wearing the clothes of his brother—the red blood cell—and promptly utilizes it for food to keep up a life more inimical to that of his vertebrate host.

Just here, gentlemen, is an opening for each and every one of us to lend a hand in completing our knowledge of malaria so that prevention will be possible. It remains to be determined by constant and careful use of the microscope how long after a malarial paroxysm these game-

toocytes exist in the blood, and hence how long every malarial patient should be quarantined against the anopheles, for it is evident that so long as they stay in the blood and restrain their vitality the individual is a menace *via* the mosquito to his fellow-man.

As yet we have not sufficient accurate observation along this line, but from what I can gather on the subject I am warranted in saying that the time of quarantine should extend into months. I am informed by our Dr. John T. Moore, Demonstrator of Medicine in the College here, and chief of medical clinic in the Sealy Hospital, that since establishing the routine practice of blood examinations upon admission a number of cases have come to hospital for other than malarial troubles, at the time suffering no symptoms of malaria, where the blood examinations revealed granular or crescent forms of the parasite, though no sporocytes. A few other cases of the kind have come to my knowledge, and I confidently expect to know of more when the men in malarial districts adopt the use of microscopes more assiduously and examine the blood of malarial patients after the disappearance of all clinical manifestations.

In this connection may be mentioned that cinchonism seems to cause both sporocytes and gametocytes to leave the peripheral circulation, the former to die, the latter probably remaining for future propagation. It may be that the gametocytes acquire a greater degree of resistance to quinia as they grow older, and the remnant of the containing blood cell loses more of the characteristics of the original cell and its affinity for quinine, thus screening the organisms from the drug. This is evidenced by the fact that the longer a case of malaria is permitted to run the harder it is to break; so that relapses will not occur and the larger doses of quinine are requisite.

Just here I may be pardoned for a little theorizing, as it appears to throw some light upon the length of time the gametocyte probably remains in the blood. It is a fact known to every clinician that malarial fever is very prone to relapse, and that, too, after weeks, even months, of perfect immunity from the disease, long after the spleen and liver have resumed their normal condition—in fact, after the patient has enjoyed perfect health for five or six months, during which time no parasite, except possibly the gametocyte, can be found in the blood. Such being the case, I question where is the source of

this new crop of sporocytes. Could it be that the living organism or sporocyte, which completes its life cycle in 48 hours, has been arrested and remains at that stage for months, and then springs into activity and produces the new crop? Or is it more plausible that the gametocyte, or egg form, as we may term it, whose function it is to remain passive till proper environments cause it to take on vital action, has floated in the blood till that environment is accomplished, and then sets its crop of young free to produce sporocytes by the hundreds, like the cysticerus of the *tœnia saginata*.

This latter is to my mind far the more rational conclusion, for the gametocytes have been observed to act like all other eggs, to lie inactive till proper conditions obtain, and then to take on vital activity and hatch out the young. These gametocytes are seen to take on activity when they have been out of the blood current 15 to 20 minutes. Just what influence causes it we are as yet unable to say; perhaps light, free oxygen, lower temperature, or even non-alkalinity of the blood may be the agent that so acts. Whatever it be, is it not possible, or even probable, that such an influence may act in the blood and cause the eggs or gametocytes to hatch? Fertilization may there be accomplished, and the zygotes penetrate the walls of the small blood vessels, and on the outside of them go through the stage of gestation as on the outer wall of the mosquito's stomach, at the completion of which period the numerous blasts produced may be set free into the blood of the vertebrate host.

Let us suppose that the condition necessary to cause these eggs to hatch be a non-alkaline medium, which they find in the mosquito's stomach; then suppose a patient with these gametocytes in his blood to be suddenly chilled by getting wet, causing a perversion of the skin's action, resulting in an acid condition of the blood. The gametocytes would then hatch and malarial fever result. Does not the whole correspond well with the clinical history of many a malarial relapse that you and I have seen?

Again, did such a condition obtain, would there not be many more blasts set free in the blood than if an anopheles were to spit a few in him while partaking of her evening meal; and would there not be a more rapid rise in temperature than if only a few had been introduced? This, too, will fit the clinical features of a relapse, which comes on with such rapidity that the second, or at times even the first, paroxysm

reaches a temperature of 40 degrees to 1 degree C., while all experimentally produced infections that I have seen recorded came on far more gradually; and those cases of primary infection that have come under my observation during the past year when I have been observing this feature have behaved likewise.

My observation of twenty-seven cases of malarial fever during the last two months shows that in no case was there a temperature of less than 39.4 in the second paroxysm and many above 40 C., and the length of time since last attack ranged from nine months to a few days. Again, since Prof. Leob has taken the eggs of the sea urchin, and by placing them in sea water for two hours with a little magnesium chloride added caused them to hatch without natural fertilization—thus showing that in the lower order of animals fertilization may be by chemical and physical means—are we not justified in looking for this organism to act likewise? This all looks plausible to me, and if it be true, we may make the length of time that relapses occur the time that we must quarantine our erstwhile malarial patient from the anopheles. Observation along this line is much needed ere we can make preventive measures adequate.

We will now take up the second great theory of prevention, that promulgated by Robert Koch. It is in brief to destroy all malarial parasites in man with quinine, leaving the mosquito out of consideration, which he maintains can be done beyond the possibility of relapse by its proper administration. There is a beauty in the simplicity of Koch's plan that is charming, and he cites in support of its feasibility the fact that on some plantations near Stephansort, in East Africa, the disease has been entirely stamped out by his method, and that in the German army malaria has been reduced from 13,563 cases, or 54 per cent., in 1869, to 230, or less than one-half of 1 per cent., in 1897, by systematic use of quinia. Also that in Posen in 1874, with a population of 4,868, there were 638 cases of malaria, while in 1897, with the use of quinine, there were only 29 cases out of a population of 9,286; and in Spandau there were 2,557 cases in 1874, but only 3 in 1897, although anopholes abound in these localities undisturbed.

While these statistics are very encouraging, and the theory looks so plausible, upon analyzing it we will find objectionable, or, better said, impracticable features. In the first place, without more evidence than I have been able to glean, I

cannot accept the statement that we can cure malaria with quinine beyond the possibility of a relapse. In fact, I seriously doubt the ability of quinine to kill the gametocyte except in very large and protracted dosing, a practice which we cannot adopt in some cases, owing to idiosyncrasies and objections by the patient, especially after he is free of fever; nor does Koch's plan contemplate a cosmopolitan population, where infected people are constantly added to it whose exposure to mosquitoes opens afresh the channels of local infection. Again, Koch's plan reckons, as he believes, that the infection must be obtained from man alone by the mosquito, while there is yet room to suspect other animals of carrying the same parasite. A recent infection of five out of seven of a party who camped several nights in a malarial district quite a distance from the nearest human habitation, and the observation of malarial spleens in the squirrels we killed led me to suspicion these of having the disease and of infecting the mosquitoes.

In conclusion, I will commend for your consideration a combination of both the preventive plans above rehearsed:

First, stop every case of malaria at once by adequate doses of quinine, for the longer it runs the greater the number of gametocytes formed in the blood, and the greater danger is the patient as an infector. By adequate doses I mean not less than two grams of quinine, and that either in an acid medium, or followed by an acid that will make the medium acid after it is taken; for quinine will not absorb in an alkaline medium. When the paroxysms are broken the patient should be required to take one gram at bedtime and a half gram the next morning on every sixth day for two months or more, and to sleep under mosquito netting or in well-screened houses the remainder of the warm season in our country. Urge the draining of all places calculated to afford larval development of the mosquito, and if drainage is impractical, treat them once a week with petroleum, even Beaumont oil would do.

Last, but not least, educate your patients up to these requirements; teach them to destroy all places suitable for mosquito development, to shun the mosquito, especially by sleeping under good mosquito netting; that malaria is easiest broken when it first appears; that quinine will break it if given in adequate doses, and will not permanently injure the patient, and that curing each case promptly lessens the danger to other

members of the family and community. And if some of you grow so enthused in your efforts to educate the laity that you transgress the code a little, I for one will be ready to forgive you.

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THE POSITIVE VALUE OF ANTIDIPHThERIC SERUM AS A REMEDIAL AGENT, WITH ILLUSTRATIVE CASES.

By G. A. DAVIS, M. D., Summit Point, W. Va.

I was recently called to see a boy, between eleven and twelve years of age, who was suffering from a severe attack of naso-pharyngeal diphtheria. When I first saw the patient he had been sick for five days, and the tonsils, palate, and pharyngeal wall were completely covered with membrane. There was so much swelling of the tonsils that it was impossible to make a thorough inspection of the region beyond. I also found that the nasal cavity was filled with membrane; the boy was very restless, tossing continually from side to side of the bed, and his face and neck were cyanosed, indicating deficient aeration of the blood, and completing what I considered to be a sombre clinical picture.

I at once administered 1000 units of Parke, Davis & Co.'s antidiphtheritic serum, and prescribed potassium chlorate and strychnin, with a pharyngeal spray of carbolic acid and glycerin. This treatment was continued without modification for four days, a single dose of 1000 units of serum being given every twenty-four hours, making 5000 units in all.

Within twenty-four hours after the first injection of antidiphtheritic serum I saw an improvement in the condition of the boy, and I now believe that had I seen the case and administered the serum earlier, two doses of 1000 units each would have been sufficient to have brought about a satisfactory result. I also believe that the child would have died if I had not used the antidiphtheritic serum. While this boy made an uninterrupted recovery, he had some difficulty in swallowing liquids for a time, due to a slight diphtheritic paralysis of the palatine nerves.

Upon the third day of my attendance upon the boy, his mother, who had nursed him, fell ill with such symptoms as high fever, flushed face, swollen throat, and a membranous deposit, as large as a silver twenty-five-cent piece, upon the left tonsil. I at once gave her a purgative dose of fifteen grains of calomel, and administered 1000 units of antidiphtheritic serum—all that I had with me. Upon the following morning I injected 2000 units more, with the result that on the third day the fever had disappeared, the faucial swelling had almost entirely subsided, and the membrane had begun to shrink.

I credit my success in these and similar cases to the antidiphtheritic serum. It is my opinion that if the attending physician does not use antidiphtheritic serum in a case of diphtheria and the patient dies, he is guilty of criminal negligence, and should be prosecuted. Some two years ago I treated about fifteen cases of diphtheria with the serum, with only one death. This occurred in a family of ignorant people, who refused to permit me to give more than a single dose of 1000 units. I fully believe that child would be living and well to-day had I been permitted to treat the case as my judgment dictated, by repeating the dose every twenty-four hours. I use Parke, Davis & Co.'s serum whenever it can be obtained, as I have always found it pure and up to the standard.

VENTRAL FIXATION FOR ANTERIOR DISPLACEMENTS OF UTERUS—AN ORIGINAL OPERATION.

By JACOB MICHAUX, M. D., Richmond, Va.

Professor of Obstetrics in University College of Medicine, Richmond, Va.; Ex-President Medical Society of Virginia, Etc.

On the 19th of April, 1901, at the Virginia Hospital, Richmond, Va., I performed a ventral fixation upon a young lady, Miss J., age 22, for the relief of ante flexion of the womb. She had suffered much with dysmenorrhœa for some years, and her general health had been much depressed, and her nervous system was wrecked. She had been twice before operated upon by the well-known method of dilatation and curettement, with only temporary benefit, the dysmenorrhœa, with all the attendant discomforts and depressing influences, returning in a few months, with the re-establishment of the original causative conditions.

The operation was done as follows: The abdomen was opened in the median line, the uterus was taken up and carried somewhat back. One of my assistants, Dr. Charles B. Brock, then dilated the cervix. I then put the organ in the usual position for ventral fixation, and stitched it with two sutures to the lower end of the abdominal wound, but a little higher up than is done when the operation is undertaken for the relief of posterior displacements, with a view to straightening out the bend in the canal.

The operation was completely successful, and

recovery uneventful, save with reference to some digestive disturbances to which the patient had been subject for a long time. She is now well, and rapidly regaining flesh, strength, and cheerfulness.

I would not suggest that this operation be undertaken for minor cases of these displacements, but for pronounced ones, and especially *flexious*, it seems to me the most rational method yet devised.

Nor would I suggest that the operation should supplant dilatation and curettement, for, as is well known, the mucous membrane becomes so diseased in many of these cases that curettement is necessary.

After dilatation and curettement, however, the condition is so very liable to recur that it seems to me that the most rational procedure is to fix the uterus permanently in such a position that it cannot return, and this can only be done by the method I have adopted.

I was assisted in this operation by the following gentlemen: Dr. Charles M. Edwards, Lecturer on Physical Diagnosis, University College of Medicine; Dr. Charles B. Brock; Dr. Alfred L. Gray, Professor Physiology, University College of Medicine, Richmond, Va.; and Dr. William J. West.

I put this case upon record as an original operation for the purpose indicated, as I can find no reference to it in available literature on this subject.

I have consulted the following works—viz.: The American System of Gynecology, 1837; Clinical Gynecology, *Keating & Coe*, 1895; American Text-Book of Gynecology, 1898; Manual of Gynecology, *Byford*, 1897; Diseases of Women, *Dudley*, 1899; Diseases of Women, *Garrigues*, 1900; Diseases of Women, *Penrose*, 1897; Text-Book of Gynecology, *Montgomery*, 1900; Text-Book of Gynecology, *Reed*, 1901.

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Analyses, Selections, Etc.

Analgesia from the Spinal Subarachnoid Injection of Cocaine.

In a paper presented to the Kentucky State Medical Society, May 23, 1901, Dr. J. Garland Sherrill says, in part, that: An ideal anesthetic agent, capable of producing oblivion to outside conditions and devoid of danger, will not be found, for a drug of such strength will of necessity be dangerous to life. Mention is made of the frequency of accidents under general anesthesia, which has resulted in the search for local anesthetic agents. Dr. J. Leonard Corning, of New York, in 1884-1885, first demonstrated the possibility of inserting cocaine into the cord. Professor Bier, of Kiel, first used the method in a surgical way, while M. Tuffier, of Paris, has brought the subject prominently before the profession. A number of gentlemen in this country reported favorably upon its use. The author thinks that cocaine will scarcely displace general anesthesia, but that it has a considerable field of usefulness. He presents the dangers from the injection into the spinal canal as:

1. The shock of simple tapping of the cord and the injection of cocaine. Seventeen fatalities collected by Gumprecht from different clinics are cited, in which death could be traced to no other cause than this simple tapping. In these cases disease of either the brain or cord was present, and it was possible also that the amount of fluid withdrawn was considerable. In health the removal of a small quantity seems to cause little shock.

2. The danger to the cord and centers in the medulla Sicard has demonstrated that the toxicity of the cocaine increases as the injection is made higher in the cord. Depressive action upon the medullary centers is extremely unlikely to follow a small dose of the cocaine injected in the lumbar region of the cord (*cauda equina*). Nicolette, as the result of experimental research, maintains that there is no alteration of the anatomical structure as a result of these injections. The effect of cocaine on peripheral seems to affirm this statement, and to show that the danger of paralysis and late effect upon the cord is very remote. The danger of hemorrhage from puncture of a spinal vein is slight, yet a case is reported where such an accident has occurred (Heumberg).

3. The action of cocaine upon the heart. In-

jected into the spinal canal this drug should be no more dangerous or depressant to the heart than a similar dose in any part of the body. Dr. A. N. Phelps reports a case of death from the local (not spinal) injection of 30 minims of a 2 per cent. solution. Therefore, 6-10 of a grain may be assumed to be the smallest fatal dose. The amount of cocaine should be limited to 3-10 or 4-10 of a grain, which amount of an active drug will produce complete analgesia of the parts below the diaphragm.

4. The immediate danger of infection through the puncture is rendered *nil* by the proper aseptic precautions. The chief danger lies in the skin of the patient, which requires special preparation, as for any surgical operation. Carelessness in the technique may undoubtedly be productive of harm, and only those familiar with practical asepsis should attempt the procedure. There are, up to this date, no reports of infection from this source. Some annoying symptoms have been noted in different cases, but they are by no means constant or certain. Rapid heart, pallor, dizziness, perspiration, cyanosis, nausea, vomiting, and involuntary evacuations of the rectum have been noted during the analgesia. Nausea appears in about 30 per cent. of 803 cases, in which a full history is given, usually occurring within fifteen minutes after the injection, but in some cases not until the patient leaves the table. It is usually slight, lasting only a moment or two, infrequently followed by vomiting. Headache appears with about the same frequency. Involuntary evacuations are to be prevented by emptying the intestine before the operation.

Arguments for the Method.—The contrast between the profound depression following general anesthesia and the normal smiling appearance of the patient operated upon under cocaine is very impressive. The author believes that the depression of the general anesthetic, combined with that of the operation, tends to reduce the resistance of the patient to later dangers, such as sepsis, suppression of urine, bronchitis, pneumonia, etc. The shock after major operations, done under spinal analgesia, is slight. Heart disease, dropsy, Bright's disease, bronchitis are conditions, even with our present knowledge, in which cocaine is preferable to general anesthesia. Old patients stand the cocaine method well, since there is less disturbance of the heart and lungs; less interference with the secretions, and less shock. Operations upon the rectum and

anus give a very favorable impression of the method. Some objections offered to the method are that the idiosyncrasy of certain individuals to the drug makes its action variable. This is to some extent true, but the percentage of failures to reach the canal and to obtain analgesia after injection is very small—37 in 1,534. The claim held by some, that the danger is greater than general anesthesia, does not seem to be borne out by the facts, 1,534 cases having been collected by the author with no deaths. P. Reclus states that he has collected over six deaths in Europe. In one of these (Gorlav) 15 cg. of cocaine had been injected and a leg amputated. A rapid rise of temperature and pulse followed, and terminated in death in twenty-four hours. In another, reported by Juillard, death followed two days after hydrocele operation. In this case the autopsy showed a ruptured aneurism of the Sylvian artery. Cocaine may, by causing vascular constriction, have been a factor in hastening this rupture. Reclus has even tried to include Tuffier's case in deaths from cocaine, where acute edema of the lungs had been assigned as the cause of death. Heumberg had a death from spinal injection of cocaine, the autopsy disclosing a hemorrhage into the cauda equina. Dumont reported one occurring in a febrile, tubercular boy, two days after the injection, in which the autopsy showed no lesion. Reclus looked upon these six deaths to less than 2,000 cases as very discouraging. However, we must consider the probability of other causes for the deaths in these cases. In two of them no statement was made of the patient's condition prior to the death. In one of the others, a ruptured aneurism, on the day following the cocaine injection, was attributed to the spinal injection, which is out of all reason when we consider the transitory effect of cocaine. And why should we attribute the death in Dumont's case, occurring two days after the spinal injection, to cocaine, just because no other cause could be found for the death? The only one which we can accept as proven to be due to the cocaine injection is the one reported by Heumberg. Folet reports a case in *Echo Medical* of death in progressive collapse after spinal cocaine injection. No analgesia was produced in this case, the operation having been performed two days later under chloroform. Too many conditions can contribute to the causation of death for this case to be accepted as a death from cocaine without further data.

American reports show no fatalities due to the injection of cocaine into the spinal canal. The ages in which it has been used varies from two and one-half to eighty-four years. In children the fear of pain will prevent its frequent use. Old persons seem to stand it especially well. The scope of the operative analgesia is usually considered to be below the diaphragm, although Morton, of San Francisco, removed a two-pound tumor from the face without pain. He believes that rapid injection of the cocaine will increase the area of analgesia. Marx and others believe that the rapidity of injection in no way influences the extent of action. The length of analgesia varies, usually lasting an hour or more. Marx and Bainbridge have used more than one injection, if needed, to carry out indicated procedures. Some minutes should be allowed to elapse between the instillations, for fear of an overdose.

The technique needs only brief repetition here. The cocaine must be sterile. This is accomplished by the fractional method (80 to 30, repeated several times), or it can be shaken in ether and then dissolved in sterile water. A number of operators depend upon the sealed sterilized tubes. Tuffier describes three methods for sterilization. First, by heating to 120 degrees C. in a sealed vessel in oil. This, he claims, does not decompose the drug, as the water of crystallization is retained during the process. Second, the fractional method previously mentioned; and, third, is filtration through porcelain filter. Vessels and fluids used in the preparation must previously be sterilized by heat; the use of bicarbonate of soda being avoided, as it decomposes the cocaine. A 2 per cent. solution seems to be uniformly the most satisfactory. The dosage should not exceed 25 minims, 15 to 20 minims being best, reduced for children according to age. A platinum needle, with short bevel, to prevent leakage, is preferable, although a similar steel needle can be used if rusting is prevented. The syringe may be of metal with a solid barrel, or of glass. Syringe and needle are sterilized by boiling. Greatest care should be given to sterilization of patient's back. Shave, scrub thoroughly with soap and water, wash with alcohol, and finally with solution of bichloride of mercury, 1-500. Using the fourth lumbar spine, which lies on a level with the crest of the ileum, as a guide, the injection is made in the space above or below the fourth spine, while the patient bends the spine strongly forward.

The point should enter a very little to the left and below the spine, and should be directed forward and slightly inward and upward. The ligaments of the vertebræ offer slight obstruction to the needle, so that there is a sense of diminished resistance when the canal is reached, and simultaneously clear fluid will flow drop by drop. If it does not appear, suction on the needle will usually start it. The injection must only be made after the fluid is obtained. The amount allowed to escape should approximate the amount to be injected. The point of puncture is to be protected by collodion on sterile cotton. After the operation rest in recumbent position should be enforced. A number of substitutes have been proposed for cocaine, notably antipyrine, eucaine, and tropacocaine, none of which seem to act as well as cocaine.

As personal experience with cocaine, analgesia embraces twenty-seven cases, in one of which (a woman of 300 pounds) he failed to obtain the cerebro-spinal fluid. In another the patient required 3 iss of chloroform to quiet her. She afterwards admitted that she had insisted on the chloroform because she was afraid the operation might hurt her. The others gave the usual phenomena noted, two having nervous rigors. One of these, at a second operation by the same method, had no nervous phenomena at all. Several went through the operation without pain or discomfort of any kind, notably a man of sixty-seven—amputation at the knee for diabetic gangrene. This patient died on the fourteenth day, of sepsis, the stump being infected. His temperature was 102 degrees F. at time of operation. An examination of his cord, cauda equina, at point of puncture showed no pathological change, either macroscopically or microscopically, showing that there is no bad effect upon the cord.

The conclusions at which he has arrived from a close study of the situation are that cocaine analgesia will not likely prove satisfactory in operations above the level of the diaphragm; that it will, perhaps, not be much used in abdominal cases which are not clear and are likely to prove tedious or difficult; that its special field will be found in operations upon the lower extremity, including amputation and resections, and those of perineum, bladder and rectum; also, that it is at least useful in old persons and those suffering from diseases of the heart, lungs, or kidneys, from cirrhosis of the liver, and from abdominal dropsy; that it can be successfully

employed where a patient fears general anesthesia, and we certainly throw aside a valuable addition to our armamentarium if we neglect to use this method in the proper manner.—*Medical Times*, August, 1901.

What I Have Learned from One Hundred and Sixty-one Operations for the Relief of Senile Hypertrophy of the Prostate Gland.

Dr. Orville Horwitz, of Philadelphia, read this paper before the American Association of Genito-Urinary Surgeons at Old Point Comfort, Va. The various operations he performed were classified as follows:

Vasectomy.—Twenty-eight cases, with no deaths. The results obtained lead him to make the following conclusions:

1. As a curative measure vasectomy is of little value, and is not to be recommended.

2. The operation appears to be most effective when performed on patients between fifty and sixty years of age, in whom the prostatic enlargement is of the soft, glandular variety. The genital organs of patients of this age are usually in a healthy condition, and the individuals usually object to any operation that is liable to interfere with their sexual functions.

3. The operation is serviceable in those cases where the physical condition of the patient renders him unfit to undergo surgical procedure, who will not submit to a more serious proceeding, who has to depend upon the frequent use of the catheter, or who suffers from periodic attacks of orchitis.

4. Sexual vigor is not diminished by the division of the vasa deferentia.

5. Atrophy of the testicle does not result from the operation.

Castration.—Forty-four cases, two deaths. The following deductions he thought were warrentable:

1. In selected cases, bilateral castration will always hold a place in genito-urinary surgery as a means of removing the obstruction caused by prostatic hypertrophy.

2. The operation is indicated in men of advanced years, whose sexual powers are lost, the overgrowth of the prostate being glandular in character, or who have reached that period of life where the passage of a catheter becomes

difficult and retention of urine not uncommon, or if advanced disease of the bladder and kidneys does not preclude a serious operation.

3. The primary effect of castration on the glandular prostatic hypertrophy is, first, to relieve congestion, and, secondarily, to cause atrophy.

4. When the prostatic enlargement is fibrous in character no benefit is derived from the operation, and the employment under these circumstances is not to be recommended.

5. Orchidectomy in very old subjects with extensive disease of the bladder and kidney is attended by large mortality, and is a very serious operation.

Supra-Pubic Cystotomy.—The indications for a supra-pubic cystotomy in prostatic hypertrophy may be summarized as follows:

1. When retention exists and it is found impossible to evacuate the urine by the usual methods that are employed for the purpose.

2. As a temporary palliative means in those patients who have reached the "break-down period of catheter life," whose resisting powers have disappeared, and who suffer from secondary involvement of the bladder and kidneys, and whose condition is such as to preclude the resorting to any more serious operation, but require immediate relief from the symptoms caused by the obstructing prostate gland.

3. In feeble old men, in whom the enlargement of the prostatic growth is fibrous in character, which renders the introduction of a catheter difficult, and the passage of the Bottini caudery knife impossible, in whom there is long-standing chronic cystitis, with probably diseased kidneys, which precludes a prostatectomy, supra-pubic cystotomy may be selected as the least dangerous and most satisfactory operation which can be employed.

Prostatectomy.—His conclusions he summarized as follows:

1. With the exception of ligation of the internal iliac arteries, prostatectomy is the most dangerous of any operation that has been recommended for the relief of prostatic obstruction, due to hypertrophy.

2. Supra-pubic prostatectomy is the safest method, especially if combined with perineal drainage.

3. The best period to select to perform this operation is early, before the break-down of catheter life, and serious complications have supervened.

4. Either an atonied or contracted bladder of long standing, associated with chronic cystitis, attended by the formation of sacs, or pouches, are contraindications for the operation.

5. A partial prostatectomy is indicated in those cases where a valve-like lobe exists, which interferes with urination, or where there is partial hypertrophy of one of the lobes.

6. A complete prostatectomy is indicated where a hypertrophy of the three lobes has taken place, especially if the condition is associated with tumor formation, projecting well back into the bladder, or has given rise to a stenosis of the prostatic urethra.

7. Perineal prostatectomy is best suited in those cases where the enlargement of the lateral lobes has a tendency to grow towards the rectum or obstruct the urethra.

8. When performing a perineal prostatectomy the semi-circular incisions advocated by Pyle, or the transverse cut of Nicoll, is the most satisfactory.

9. The removal of a portion of a small, hard, fibrous prostate gland by means of the perineal route is a very difficult operation. There is danger of not only extirpating the entire gland, but the prostatic urethra as well.

Bottini Operation.—From the results obtained by the experience that he recorded in his paper, he felt warranted in forming the conclusions as follows:

1. Success following the Bottini operation depends on having perfect instruments, a good battery, the necessary skill, and the employment of a perfect technique.

2. In suitable cases the Bottini operation is the safest and best for the radical cure thus far devised for the relief of prostatic hypertrophy.

3. It is often very efficacious in advanced cases of obstruction, as a palliative measure, rendering catheterism easy and painless, relieving spasm, lessening the tendency to constipation, and improving the general health.

4. It is of special service in the beginning of obstructive symptoms, due to hypertrophy of the prostate gland, and may be regarded as a means of preventing catheter life.

5. It is indicated in all forms of hypertrophy, except where there is a valvular formation, or where there is an enormous growth of the three lobes, associated with tumor formation, giving rise to a pouch, both above and below the prostate gland.

6. Where the bladder is hopelessly damaged, together with a general atheromatous condition of the blood vessels, associated with polyuria, results are negative.

7. Pyelitis is not a contraindication to a resort to operation.

8. The character of the prostatic growth has no bearing on the results of the operation.—*Medical Times*, August, 1901.

Alcoholism and Life Insurance.

Dr. S. D. Moore says alcohol is one of the most powerful antagonistics of life, a small per centum being destructive of all living organisms. That being so, its importance from an insurance point of view can readily be appreciated. For our part, we cannot quite understand how an applicant who has been a hard drinker can be considered a good risk. The mortality of drinkers is very great, and the form of drink does not matter much, because alcohol in a greater or less percentage enters into all spirituous, vinous, and malt liquors. It is not necessary to drink whiskey alone in order that alcohol shall be introduced into the body. If you drink lager beer you will also introduce alcohol into your system, as all beer contains alcohol, different brands having different percentages, so that if you take a sufficient amount of beer you will introduce alcohol into your body, just as if you drank a less quantity of whiskey or other spirits. For instance, in a table found in *Ziemssen's Cyclopaedia*, Vol. XVIII, page 176, by Greenfield, it is shown that whiskey contains 50 and 60 per cent.; brandy, 50 and 60 per cent.; gin, 40 and 60 per cent.; ordinary port wine, 23 per cent.; claret (mean), 15 per cent.; ordinary, 8 to 9 per cent.; hock, 9 to 10 per cent.; sauterns, 14 per cent.; cider, 5 to 10 per cent.; small beer, 1.28 per cent.; lager beer, about 2 per cent., so that in whatever form the drink may be taken alcohol appears to be introduced. Now, if alcohol, as Dr. Moore says, is the most powerful antagonist of life, and for this reason it is beginning to be employed as an external antiseptic (alcohol as found in the shops is a 90 per cent. article by reason of its great affinity to water), how is it possible that if its use is continued

steadily for any length of time that the user can be in a normal condition?

As a matter of fact, a drinker is not a normal man physically. Physicians who have investigated the subject tell us, says the *Medical Examiner*, that alcohol is most destructive to the human body. It causes dyspepsia, destroys the integrity of the liver. You will find in alcoholics that form of liver disease known as cirrhosis; organic heart disease, particularly fatty degeneration; a fatty degeneration of the blood vessels; Bright's disease in its various forms; nervous affections, functional as well as organic; a perversion of the morals of the individual; in fact, it is one of the most potent and destructive agents that enters into the daily life of civilization. How an applicant who has for any length of time been subjected to the influences of alcohol can be a first-class select life, or even an ordinary life, is beyond our comprehension. Alcohol's well-known influence as a factor of the large mortality of insurance companies should cause these moneyed institutions to call a halt in accepting drinkers. They should never be taken upon the same basis as good lives. If accepted at all, they should be rated up. If they will indulge in these destructive practices they should pay for it, just as in many other instances an applicant is charged an extra for being something or doing something that other applicants are not or do not do.

The drinker should not be given the privileges of insurance companies free of extra expense if accepted, while women are charged an extra, and those who are employed in extra hazardous work, or who live in insalubrious localities, are barred out. While there is apparently as much danger in the one case as in the other, the applicant who is continually introducing small quantities of the most destructive substance into his body is given greater advantages than almost any other class of insurers. He is practically put upon the free list, although he is sitting over a mine which is liable to explode at any minute, and when it does explode, insurance companies hold up their hands in such holy horror that one would think that the idea prevailed that alcohol taken internally is one of the most innocent of drinks, or that alcohol was never taken by those who have reformed.

A reformed applicant is one who has taken alcohol to such a degree that he has become convinced of its destructive qualities, and therefore has either voluntarily or by force of cir-

cumstances subjected himself to some sort of process by which the habit has been broken up, apparently. If he has continued the habit long enough, he has injured his organs and blood vessels, if we can believe pathologists, beyond repair. On the other hand, if the same or similar causes which first induced him to drink are again operative, we may look for a relapse into his former habits. The last stage of this man will be worse than the first, and the company which has insured him ought not to feel surprised if a death claim is presented out of due course. Having accepted the applicant with such a history, it ought to pay the claim with the best grace possible, without contest, and without hesitation. It has reaped its harvest according to the seed sown; it could not expect any different result. The effect has followed the cause, as it will do in ninety-nine cases out of a hundred.—*Health*, July 20, 1901.

Sterility in Women.

Dr. Lewis S. McMurtry, Professor of Gynecology and Abdominal Surgery in the Hospital College of Medicine, Louisville, read a paper on this subject before the Louisville Medico-Chirurgical Society, April 26, 1901. He said:

In the entire scope of gynecic surgery I doubt if any subject has received more attention than sterility. The literature of the subject is vast and dates back to the early age of medicine. A review of this literature in conjunction with recent research will impress the scientific investigator with the unsatisfactory state of available and practical knowledge of the subject. This is due for the most part to the fact that sterility must be attributable to numerous causes involving numerous organs, thus rendering definite consideration of its pathology and treatment distinct from associated pathologic conditions impracticable.

The percentage of married women between fifteen and forty-five years of age who are sterile is estimated by various observers to be between seven and twelve per cent. Mathews Duncan placed the percentage at ten. With increasing population, the vast growth of cities, accumulating wealth, the pursuit of fashion, and adoption of artificial modes of life, this percentage is very much increased in the present age.

The importance of this subject in its socio-

logic, domestic, and kindred general relations and bearings, while recognized, are beyond the scope of the present occasion. Likewise the consideration of those congenital causes of sterility, or of those acquired defects in the reproductive organs, such as surgical removal of the uterus, ovaries, and fallopian tubes, or permanent atrophy of these organs, is beyond the limits of this discourse.

Two necessary conditions must obtain for normal conception:

1. That the ovum and spermatozoa shall meet and fertilization occur. While this is believed to occur in the fallopian tubes, it doubtless can obtain in any part of the tubo-uterine mucous tract.

2. That the fertilized ovum shall find a proper nidus in the endometrium. The endometrium is the placenta-forming organ, which is the great centre of force in the growth and development of the ovum. The endometrium must shed its epithelial covering, and its retiform tissue must become filled with lymphoid cells, from which the decidua must arise.

The function of menstruation and the coincident changes in the endometrium find their objective point in the preparation of a suitable nidus for the development of the fertilized ovum.

Excluding those general causes of arrested development, improper education and corpulence, the causes of sterility in women may be thus enumerated: Vaginismus, atresia of vagina, stenosis of the os, usually accompanied by deformity of the cervix (ante-flexion, conical cervix), uterine displacements, lacerations of cervix, tumors, inflammatory lesions of the peritoneum, ovaries, and tubo-uterine mucosa.

The two first causes above enumerated are obstacles to coition, can be readily detected by examination, and are amenable to well-known methods of treatment. Although stenosis of the os uteri and cervical canal is among the rarest causes of sterility, it is the assumed cause in almost every case which is presented to the physician for treatment. It is well known to every gynecologist that almost every case of sterility or delayed conception which comes under observation has previously undergone dilatation of the cervix for a fancied stenosis of that canal. The same criticism is applicable to the operation for sterility practiced by Simpson and Sims of incision of the cervix.

No operation is more misapplied than this

one, and in a large proportion of cases it is the initial step in the establishment of chronic inflammatory disease of the tubo-uterine mucous tract. This statement may be emphasized when applied to those cases of sterility attributed to cervical stenosis in which the stem is applied to maintain patency after dilatation.

Inflammatory diseases of the uterus, ovaries, fallopian tubes, and pelvic peritoneum constitute the cause, in the great majority of cases, of sterility, and the prevention and treatment of sterility is, for the most part, the prevention and control of infection of the tubo-uterine mucous tract.

The anatomical arrangement of the female genital organs makes it *a priori* probable that bacterial invasion plays a predominating role as a causative factor in all classes of inflammatory diseases.

Doderlein says: "Above any site in the body, the uterus seems to be the place favoring bacterial invasion and colonization. The open connection between the uterus, the vagina, and the outside world; the many chances for transport of germs which are so obvious, particularly during sexual life; stagnating secretions protected against desiccation and kept at a brood-oven temperature—all these factors unite to *a priori* impress us how well adapted the interior of the genitalia is for bacterial invasion and consequent disease."

Yet it has been found that in spite of all these apparently favorable factors the internal organs of the healthy woman are not easily reached by the pathogenic bacteria, and are, as a rule, sterile. The vulva, according to the unanimous verdict of all investigators, is frequently the seat of pathogenic bacteria, particularly the ubiquitous ordinary pyogenic micro-organisms. The vagina, however, in healthy women, contains pathogenic bacteria only in a small number of the cases examined under the proper precautionary measures to avoid contamination. It, on the other hand, in healthy women, always harbors a great many non-pathogenic bacteria. Yet fully virulent pathogenic microbes, introduced experimentally, as has been done by Koenig, Doderlein, and others, are speedily killed in the healthy vagina. Clinical and other experience has abundantly shown that the vagina possesses the power of self-purification, which may be speedily lost under certain conditions.

Adhesions, thickening and obstructive, so commonly resulting from inflammatory changes,

may readily impede the passage of the ovum, while pathological secretions and inflammatory products may destroy its vitality. This cause of sterility is apparent in the large number of sterile women who have conceived once, and having been infected in connection with abortion, miscarriage, or labor, remain sterile in consequence of the changes resulting from inflammatory lesions.

Recurring to the researches and experiments of Doderlein, showing that under normal conditions the vagina has the power of self-purification through the power of its secretions, a practical means of preventing infection and consequent sterility is apparent. The modern idea that pervades the general professional mind, and adopted by the laity, that the frequent, often daily, use of the vaginal douche is a preventive of infection in healthy women is shown to be erroneous. The habitual daily use of the vaginal douche in health is productive of much mischief. The protection against infection established by nature is washed away; unskilled douching itself often carries infection to the cervical mucosa, whence it extends along the mucous surfaces. The vaginal douche, while a valuable agent in treating disease, is altogether misapplied as a routine part of the toilet or as a preventive of infection in healthy women. Many women are sterile in consequence of the inflammatory lesions begun in efforts to prevent conception early in their married life.

As a conclusion of this imperfect consideration of this subject, it may be stated that sterility may result from diseases involving any part of the genital system of organs, from the pelvic peritoneum to the vulva; that the most potent causes originate in the changes following inflammation. Hence, for the most part, the prevention and treatment of sterility in women is synonymous with the prevention and treatment of pelvic inflammation, one of the most elaborate chapters in gynecology.

DISCUSSION.

Dr. A. M. Cartledge: Sterility is always a symptom, not a disease, and indicates that there is usually a lesion in the genital apparatus somewhere. For a man to scientifically address himself to the subject of sterility in women requires an appreciation of all the gynecological conditions we are called upon to treat, because practically every thing we are called upon to treat in gynecological disease is capable of producing sterility as one of the symptoms, although, re-

markable to relate, we occasionally find an enormous array of gynecological conditions existing in the same patient, and sterility is not a symptom in the case. That makes the subject of more interest in its study.

I am in the habit of considering the uterus as the middle ground; we have the sperm cell to ascend to this middle ground, and the ovum to descend. Anything that prevents the descent of the ovum, or the ascent of the sperm cell, will cause sterility. Like Dr. McMurtry, I think the mechanical causes of sterility have been greatly exaggerated.

I have long since come to the conclusion that dilatation of the cervix rarely does good; it is the least effective of all the methods of treating sterility, and is the most commonly employed method. A cervical canal that will permit the escape of the menstrual fluid is not a barrier *per se* to conception. I have seen one instance where I thought a long cervix caused sterility, the sperm cells being placed at a disadvantage by being deposited in the upper portion of the vagina far beyond the cervical opening, and could not gain entrance to the long conical cervix. Aside from the so-called conical cervix with a small os, I do not believe a conical cervix is a barrier to conception. Of one thing I am satisfied, that the majority of cases are amenable to treatment. We should divide all cases into those beyond the pale of hope, and those that promise something from the various methods of treatment. Of those beyond the pale of hope, infertile uteri and complete stenosis of the tubes are among the most common. Those rare constitutional and systemic conditions which have lithemia as a basis may sometimes be the cause of sterility. All the so-called mechanical and inflammatory effects, I am satisfied, will often be found very simple in character. I have had three cases of sterility which were caused by endocervicitis with marked secretion of mucus, or a cervical mucus plug. In one of my cases the woman had been sterile for five years; she was anxious to have a child, and the mucous plug spoken of was the only lesion found. Applications were directed to the removal of this catarrhal condition, incising the glands in this situation deeply and turning them out, applying nitrate of silver, resulting in a cure.

I have never relieved a case of sterility by dilatation of the cervix, because I agree that this is not the cause *per se*; some other obstruction must exist.

As to the question of the destruction of the sperm cells by toxins developed during the existence of certain inflammations in the genital tract—that this does occur in certain systematic taints there is no room to doubt. That is to say, there are probably given off during growth and multiplication of certain bacteria, toxins that immediately destroy the sperm cell; in cases where we can find no obstacle to the ascent of the sperm cell, nor can we find any mechanical difficulty in descent of the ovum, union takes place, but fertility does not occur. To make it more reasonable to suppose there is something in the germs that give off these toxins is the fact that some women with quite a marked chronic endometritis conceive readily. Women, for instance, who have a chronic purulent endometritis, pus constantly coming from the uterus, sometimes conceive.

In a woman with large lacerations of the cervix that have healed, where the pavement epithelium lining the vaginal portion of the cervix has ulcerated and healed perfectly smooth, that woman is more liable to conceive than a woman who has had no laceration of the cervix. Yet when there is a laceration with granulation tissue and a chronic infection process going on, the lacerated cervix may possibly be the cause of persistent sterility.

It would be rash to promise any woman that you could cure her sterility. We must recognize that multiple causes of sterility may exist in the same individual, and these may all be amenable to treatment. One or two of the conditions may be amenable to treatment, the others may persist despite all our efforts at relief. Certainly a careful physical examination ought to detect any lesion; then, if we have not an infantile uterus or an occluded tube, the case is hopeful. In looking up the subject at one time I enumerated thirty-eight known causes of sterility, from chronic ovaritis, salpingitis, endometritis, down to the common one of slight infection about the cervix, endocervicitis, and on down to the vagina probably a chronic infection, so that the sperm cells are killed at their first deposit. We must remember, however, that the sperm cells are possessed of considerable vitality, and it only requires six or seven minutes from the time they are deposited in the vagina until they have entered the cervix. But I can readily see how some women may have an infectious process in the vagina; that the toxins given off from such process might kill the sperm cells before they can gain entrance into the cervix.

One thing more or less theoretical that is an obscure cause of sterility is where we have a slight endometritis, a little sanaceous discharge from a uterus which is normal in size, the cervix not occluded, where there is no misdirection of the cervix as a result of development of the uterus, the tubes are patulous, the woman menstruates normally, yet conception does not take place. Such a woman may not come under the head of obese. In such cases it is well to start out, if we can find no other cause for the sterility, upon the basis that there exists a deficiency in this woman's blood, probably lithemic in type; that the endometrial secretion is so altered as a result of this systemic condition that there is a toxine given off, and immediately there is death to the sperm cell of the ovum, and I believe that systemic treatment, change of climate, use of the various waters, etc., have led to conception in some of these women when all methods of local treatment had failed.

Dr. A. M. Vance: It might be well to examine the man in many of the cases of sterility in women: quite frequently in the man will be found the cause.

Dr. William Bailey: The prevention of sterility should be largely prophylactic, especially the preventing of such conditions as obtain in our present state of society—conditions involving, no doubt, the healthy integrity of the endometrium. I am not concerned in the surgical features of the subject, recognizing that there must be sufficient patent condition of the tubes in order to bring the ovum down, and then there must be a living germ, so that impregnation may take place. I agree with the essayist that sterility is largely due to an unhealthy condition of the endometrium.

I am glad to hear Dr. McMurtry declare himself against the indiscriminate use of the vaginal douche. I believe it is now carried on to such an extent that even women in health are almost universally using the vaginal douche. Within less than three months I heard a conversation between a number of women, in which one of them stated, to the horror of the others, that she had never taken a vaginal douche. They advised her to go to a doctor, and he would send her home to have a vaginal douche for cleanliness, if nothing else. While it may seem to be a *quasi* means of cleansing, I am thoroughly of the opinion that the dangers from infection by the methods and means used, the uncleanness surgically of the ordinary douche apparatus is such as to endanger the woman more than any

condition for which it is used. I am growing more and more opposed to its use, unless it is necessary by already infected conditions that must be combatted. The faculty that the vagina has of guarding the portal at this important place is a happy circumstance, and, for the most part, should be left to itself. The cleanly woman is one who takes care of herself externally, avoiding the introduction of germs as far as may be by cleanliness, but nature, in my judgment, can take care of the inside of the woman better than any means that we can adopt. We can all recall cases where we think great trouble has come from the usual habit of a vaginal douche after labor. I am at that point in my obstetric practice that I absolutely prohibit the vaginal douche being used unless I find conditions that warrant it for infection already set up. I believe a woman is safer without any douching than she is with it, as the douche is ordinarily administered.

Dr. H. H. Grant: My views are a little different from those expressed by the essayist. We must accept the views of those men who have given the matter especial study, and who are competent to advise us, or else we should think for ourselves. It has seemed to me that not infrequently sterility is occasioned by a long cervix and displacement of the uterus, which causes occlusion of the lumen of the cervix by displacement of the uterus itself; and that not infrequently menstruation will occur regularly and practically to a physiological degree through this displaced uterus and curved cervix after much pain has been experienced in the gradual straightening out of the tube. The menstrual fluid does not apparently escape freely for the first few hours of the beginning of the menstrual menses, but after six or eight hours, during which time the uterus has been replaced and the curvation of the cervix has been more or less effaced by the efforts of nature to empty the uterus, then menstruation apparently goes on normally. In the interval between menstruation, however, the uterus gets back into position, which is abnormal for other people but normal for this uterus, which practically occludes the cervix; and it has been my experience in three instances to have fertility succeed dilatation of the cervix by force in women who had, in one instance for several years, and in two other instances for a year each, been sterile. In each of these instances pregnancy succeeded the dilatation so promptly as to leave practically no

doubt in my mind as to the fact that the dilatation had overcome the obstruction, and I reasoned with myself that the obstruction was of the nature that I have just endeavored to describe.

It has seemed to me that the chief causes of sterility are much as were suggested by Dr. Cartledge. I do not agree with him, however, in regard to the mucous plug causing obstruction and sterility; this plug is always present in the healthy cervix, and offers no obstruction to the sperm. Obstruction, however, I think far more frequently the cause of sterility than anything else, with discharges which in themselves are of an acrid character and promptly destroy the vitality of the sperm cell. In addition to this, of course, is the further fact that the epithelium of the mucous membrane of the uterus is practically in many instances incompetent to retain the ovum even after it has become fertilized; or even in the tube itself there may be some obstruction which arrests the ovum out of reach of the spermatozoa. These, I think, are far more frequent causes of sterility than ordinarily believed, but the character of obstruction to which I have called attention is not an infrequent factor.

With respect to the vaginal douche, I have also entertained opinions about this which are different from those expressed by the essayist. They are based chiefly upon the fact that in women who are married, or in women unmarried in whom sexual intercourse is frequent, there is constantly introduced into the vagina, an organ which is not sterile and exciting a secretion which practically is not a normal one, at least in the virgin, and perhaps in the original intentions of nature is not a normal one. We are all familiar with the fact that in every animal, aside from the human being, sexual intercourse was apparently intended by nature only for the purpose of procreation, but in the human being it is indulged in frequently by those who have license even without the object of pregnancy, and oftentimes persistently after pregnancy has occurred. As this is the case, then it appears that the condition found in the vaginal tract in other animal life is not the same as found in the human being. Most of us are aware of the fact that in those individuals who frequently indulge in sexual intercourse there is increased secretion of the glands in the male as well as in the female, and that only frequent ablutation will enable those individuals to preserve a condition of absolute cleanliness of

these parts. While it is probably true that in the virgin there is no need for the use of the vaginal douche where no disease exists, in the female who is the frequent subject of sexual intercourse I am satisfied there is an unnatural discharge, and there is an additional difficulty of cleanliness which can be preserved by the careful use of a clean vaginal douche.

The position taken by Dr. Bailey is one I fully approve; but the conditions are different here; the uterus is dilated, the cervix oftentimes large enough to admit a little finger, and not only is the fluid itself thrown in by the syringe enabled to effect an entrance into the uterus, but even the tube may find its way through the cervix, and here is a source of infection, as has been stated. But in the unimpregnated female the condition is different. The cervical tract is closed under ordinary conditions by a plug of mucus, and it is exceedingly difficult to get the fluid to penetrate it, and it is only by the incessant involuntary movements of the spermatozoa that they ascend into the cervix through this mucous plug. It is not necessary, however, that this plug should be removed to result in pregnancy; the spermatozoa may ascend by the side of it, or even penetrate it. Their movements are not directed by any power on the part of the germ itself, but are involuntary and constant, and the life of the spermatozoa is sufficiently prolonged to allow them to gain entrance to the uterine cavity. For this reason I am satisfied it is not easy to throw into the uterus any fluid that might be used in a syringe or to wash into it any poisonous secretions that might be found about the vaginal walls. With these exceptions I am fully in accord with everything the essayist has said as to the character of the trouble.

Dr. F. C. Wilson: One of the causes of sterility not mentioned particularly by the essayist is the frequent efforts on the part of newly-married couples to prevent conception; the use of douches of various kinds in order to prevent too early conception, as they term it. This too often results in sterility; in fact, I believe it is one of the prime causes. Of course, this leads to inflammatory conditions, and the various changes take place as mentioned by the essayist, and the practice ought to be condemned. When people of this class want children, they find they are unable to get them. Where a narrowed condition of the cervix can be detected by examination, sterility may be overcome by dilatation if

that be the cause. That may not be the cause, but where a young woman suffers greatly from dysmenorrhœa, and at the same time is sterile, a careful examination may detect a narrow cervical canal or a flexed uterus; I believe dilatation to a moderate extent—which would hardly amount to a surgical procedure, but, of course, ought to be done aseptically—will frequently overcome the difficulty and relieve the sterility. I have had cases of this kind where, after the measures suggested were carried out, conception promptly occurred, which was proof positive that the sterility had been relieved, and at the same time dysmenorrhœa completely disappeared. If there is a constricted cervical canal and conception occurs, nature does the rest in a much more perfect way than the surgeon can.

Dr. Louis Frank: I fully agree in everything the essayist has said. The main point in the paper, the point that the essayist has thoroughly established, is recognized by all authorities today—viz., that sterility does not exist as a disease *per se*, or as a functional disorder, but is really due to some diseased condition—some pathological condition of the genital organs of the woman. I recognize, however, the fact that these lesions may be so slight in character, may be so obscure, so situated along the genital tract—about the ovaries, for instance, as would follow an old gonorrhœa—a pyosalpinx which may have subsided, leaving a condition which results in sterility, though we cannot make out the cause by examination of the patient during her life. It is in many of these cases where, without any demonstrable cause, sterility has extended over a long period of years in women who have been married fifteen or twenty years without any efforts at the prevention of conception, without any history of any mechanical lesion or pathological condition about the genital organs. Some of these cases have become at the end of that time pregnant and borne children. In these cases, if we could carefully examine pathologically the ovaries and tubes, we would find evidence of pre-existing disease.

I am perfectly in accord with what Drs. McMurtry, Cartledge, and Bailey have said in regard to the vaginal douche, and I certainly do not agree with Dr. Grant in this respect, nor in respect to displacements of the uterus *per se* producing sterility. These displacements may produce sterility secondarily by bringing about and maintaining a diseased condition of the uterus itself. There may be a secondary infec-

tion, the result of catarrhal conditions, which we improperly term endometritis, not inflammatory in character, but which will prevent conception. These conditions do not necessarily prevent ovulation, but they do prevent the transportation of the ovum on the endometrium and the development of the pregnancy. That there may be stenosis of the cervical canal to such a degree as to permit of the outflow of the menstrual fluid and prevent the entrance of the spermatozoa I cannot conceive. We must remember that pregnancy sometimes takes place notwithstanding the presence of large tumors pressing upon the cervix and almost obliterating its canal; that ectopic gestation occurs in a tube where constriction is sufficient to prevent escape of the ovum into the uterus, still this does not prevent entrance of the spermatozoa into the tube.

In the cases mentioned by Dr. Wilson dilatation of the cervix was probably beneficial by producing alteration in circulation and thus improving the condition of the endometrium and permitting successful implantation of the impregnated ovum. In many women, and these would come under the same class mentioned by Dr. Wilson, the newly married, we have another element to consider, which is also true in the case of prostitutes, those who indulge in frequent sexual intercourse—namely, a congestion of the genital organs frequently repeated, which brings about a condition just as brought about by the cold douche; the uterus is chronically enlarged and congested, with alteration in circulation sufficient to prevent successful implantation of the impregnated ovum. I believe that frequently lacerated perineum will bring about the same condition, although this was not touched upon by the essayist. We also have to consider the open, flaccid vagina, which permits the easy emptying of the seminal fluid and spermatozoa, thus acting as a factor in the production of sterility.

I hardly agree with Dr. Cartledge that the mucous plug in the cervix would be an active factor in the production of sterility. It seems to me the spermatozoa possess sufficient vitality and motion to penetrate or pass alongside of this mucous plug and find their way into the cervix; and where mucous plugs have apparently been the cause of sterility I believe the condition was actually due to hyperacidity or alkalinity of the secretions, which prevented the life of the spermatozoa being maintained sufficiently long to

permit them to come in contact with the ovum to be fructified.

Medical Treatment of Cancer of the Stomach.

Dr. Charles Robin, Professor of Clinical Medicine, University of Paris, in a clinical lecture (*Medical Press and Circular*, July 24, 1901), said:

It appears strange to make this question the subject of a lecture when it is known that gastric carcinoma is an incurable lesion. But I want to show you how you can and ought to improve the condition of these unfortunate patients. When I was a student I was painfully struck by the lamentable state of *abandon* in which these cancerous patients were left. I have seen the best professors manifest complete indifference towards them. Milk diet, injections of morphine when pain was intolerable, iron where there was hæmatemesis, and that was the end of the therapeutic treatment. It was naturally insufficient; by reason of the apathy of the physician, surgeons claimed the treatment of cancer, so much so that at present 75 per cent. of the patients who enter the hospital submit to a curative or palliative operation—pylorectomy and gastrectomy on one hand, gastro-enterostomy on the other. I think it necessary, consequently, to react and to warn you against this tendency, which appears to me to be excessive. For this reason I wish to speak to you to-day on the medical treatment of cancer; we will study later on under what conditions an operation would be justified.

The treatment of gastric cancer aims at a double end: attenuate the sufferings of the patient, nourish them and prolong their existence as long as possible.

The hope of an ultimate cure must be encouraged, and the treatment should be to that end, as there exist other curable affections of the stomach that might be confounded with cancer.

Some years ago I observed in this sense a typical case: a man who presented the classical signs of epithelioma of the stomach—dark vomiting, tumor, emaciation, cachectic condition, etc. In conformity to the rule which I have just indicated, I reserved my diagnosis, and treated the case on its merits; two months later the patient left the hospital cured. It was a false cancer. It is evident that the milk diet alone would have given the worst result. The medical treatment

of cancer is consequently more complicated than would first appear. We are going to see what it is.

First of all, you must not fall into the error that we have at our disposition a specific medication for cancer, and yet some distinguished *confreres* have thought at one time to have discovered a curative therapeutic agent. It is thus that Cabazes thirty years ago proposed the employment of condurango for the cure of cancer. Rives related that out of fifty-one patients that agent gave him four cures. These results required confirmation. But condurango is none the less a useful remedy as a stimulant to the appetite and the digestive functions. It is given under the form of decoction, extract or tincture. The decoction is made with two drachms and a half of the bark in eight ounces of water boiled down to five ounces and fifteen drops of hydrochloric acid added after the secretion is filtered. The patient takes three or four tablespoonsful daily. The extract is given at the dose of two to ten grains daily, and the dose of the tincture is from ten to fifty drops daily.

A second therapeutic agent enjoys great favor since the interesting communication made by my friend and colleague, M. Brissaud; I allude to chlorate of soda.

For a long time chlorate of potash was employed in epitheliomata of the tongue and the skin. M. Brissaud did not adopt this agent, because it is a poison of the blood transforming the oxy-hæmoglobine into methemoglobine. The author in his communication cited five patients absorbing from two to four drachms daily of chlorate of soda, a dose impossible in the case of chlorate of potash. Under the influence of this treatment the patients were much improved, the cachexia disappeared, and in one case in six weeks the melena and hæmatemesis had ceased.

Our own experience, and that of several authors, brought me to conclude that if chlorate of soda had not a specific action on gastric epithelioma, it at least acts as a tonic, increases the strength of the patients, and stimulates the appetite. I must not forget, however, to mention one counter indication to the employment of chlorate of soda, and that is the presence of albumen in the urine.

A host of other remedies have been proposed as specifics; I will only mention the principal substances.

Bichromate of potash was recommended by

Vulpian at the dose of one grain daily; it irritates the stomach; it should not be employed.

Tincture of *thuya occidentalis*, which had its day, was recommended at the dose of four drops at each meal, and increased gradually to 100 drops daily. It increases the weight of the patient, and might be ordered.

The extract of chelidoiné was proposed by Gresensko to cure cancer in general, either as a local application on external cancers, such as that of the breast, or used internally against the cancerous diathesis. I have not obtained any good results from it, and cannot advise you to try it. I pass rapidly over other substances, such as calago, employed by the doctors of Paraguay, sulphate of aniline, pyocetanine, chloride of gold and sodium, bromide of gold associated with arseniate of soda; all these products have a more or less hurtful effect on the gastric membrane. There remains the important questions of serum and beer yeast, but they belong as yet to the experimental period, and nothing positive can be said of them, although it is possible that useful results may be reached.

To sum up, all the drugs proposed as specifics of cancer should be regarded simply as stimulants of the appetite. The curative treatment does not exist practically by medical means. We will see in another lecture what must be thought of surgical interference.

Cardiac Drugs and the Vasomotor Treatment.

The paper by Prof. Gottlieb, of Heidelberg, has been specially translated for the *Medical Press and Circular*, July 24, 1901.

Seeing that circulatory disturbances have for result to determine an unequal distribution of blood in the organism, the object of cardiac and vasomotor treatment must be to restore the equilibrium thus destroyed.

Paralysis of the blood vessels, due to the insufficient central innervation of the vasomotor centres, causes the blood to flow into the abdominal vessels, while the peripheral vessels and those of the skin and brain are depleted; the pulse is feeble, and the heart only receives an inadequate supply of blood during diastole. This variety of circulatory inadequacy occurs in cases of intoxication resulting from the use of narcotics and during attacks of infectious disease. In such cases the exhibition of cardiac drugs would generally be without effect, since it is not

the strength of the heart that is lacking, but that the quantity of blood which it receives is insufficient. But the blood, withdrawn from the action of the heart and accumulated in the dilated vessels of the abdomen, can be brought back into the general circulation by the use of drugs acting upon the vasomotor system, through which they give rise to contraction of the vessels in the splanchnic area. To obtain this result, strychnine, camphor, and caffeine are prescribed. Much the same result may be obtained by irritating the skin, or by making cold applications.

Cardiac drugs are used for the purpose of restoring the energy of the heart. They increase the volume of systole, and in this manner tend to remedy the defective distribution of the blood in the organism, which is the usual consequence of most complaints of the heart, accompanied by a diminution in the energy of this organ, an accumulation of blood in the venous system and anæmia of the arteries being the inevitable result of incomplete systole and of insufficient ventricular diastolic aspiration.

Digitalis acts chiefly by strengthening the energy of the heart; its vasomotor effect is of secondary importance. From experiments made on the heart of a frog, it was long since observed that the cardiac systole increases, and that the energy of the ventricular contraction is strengthened under the influence of *digitalis*. Recently we have succeeded in making the same experiment on warm-blooded animals in whom the heart was protected from the variable resistance of the general circulation. We are, therefore, no longer compelled to base our conclusions on experiments made upon frogs. By isolating the cardio-pulmonary circulation, following the example of François-Franck and of E. Hering and Bock, we are enabled to study the action of *digitalis* on the heart, independently of its effect on the vessels; we can also make use of a separated heart, in which the functions are maintained by an artificial circulation through the coronary vessels. I have been able to afford direct proof by this latter method that an increase in the volume of the systole takes place, and by the aid of a special arrangement I satisfied myself that after a dose of digitoxin the energy of the ventricle is trebled or quadrupled.

The increase in the volume of the systole is caused more particularly by a more complete contraction of the cardiac muscle; the ventricle emptying itself with greater facility. This action is the more important in connection with

an ailing heart, since a failing ventricle becomes less capable of getting rid of its contents. Moreover, the slight diminution in the frequency of the pulse, due to the diminution of the pneumogastric, which occurs in addition to the more strictly cardiac effect under the influence of *digitalis*, has a beneficial influence on the cardiac function. The diastolic aspiration of the blood of the veins into the cardiac cavity is also favorably influenced by this slowing of the pulse. Consequently the efficacy of *digitalis* becomes very evident, in proportion as this slowing effect is manifested. The maximum effect of this treatment corresponds to complete expansion of the ventricles during diastole, plus a maximum contraction during systole. The heart in this way pumps a greater quantity of the blood which is contained in the over-filled veins, and propels it into the bloodless arteries.

All drugs acting in a manner analogous to *digitalis* have, in addition to the action on the heart, a vaso-constricting effect, as I was able to demonstrate anew in my recent experiments. But this vasomotor action is accessory, from a therapeutical point of view; the important factor in combatting venous stasis is an improvement in the cardiac function. The vascular contraction may be of some utility in the sense that the blood is thereby driven out of the congested portal system into other parts of the vascular system, for, in the first instance, it is principally on the portal vein that the vascular action of *digitalis* is produced; but, if this contraction exceeds certain limits, its beneficial effect is transformed into one very inimical to the organism, since, in consequence of the rise of arterial resistance, the work of the heart is needlessly increased.

Camphor does not only act on the heart indirectly through the vasomotors, it also directly increases the irritability of the cardiac muscle. Its action on the normal heart is little marked; on the other hand, I was able to convince myself in the case of the rabbit, that under certain pathological conditions, when the heart ceases to beat, it is possible by the application of camphor to combat this momentaneous stoppage and to save the rabbit's life.

Caffeine has a direct effect on the heart, but one quite different from that of *digitalis*, nor can it be considered as a substitute for the latter. As a matter of fact, it does not increase the functional energy of the healthy heart in cases where the blood tension is normal, but it strengthens

the action of the cardiac muscle in the presence of a pathologically high arterial resistance; it may also be useful in cardiac complaints accompanied by a high aortic tension.

Alcohol has not a direct influence over the heart; it acts indirectly on this organ by diminishing the peripheral resistance, when, in consequence of an exaggerated aortic tension, the left ventricle can no longer completely empty itself. In this case it causes the vessels to dilate, and the resistance to diminish, and as a result whereof the heart carries on its work under more favorable conditions, and is enabled to furnish a greater amount of work.

The various cardiac drugs, it will be seen, act on the circulation in quite a different manner to those which act in the vasomotor system. In spite of the difficulties that present themselves in the study of so complicated a mechanism we may hope that by associating clinical observation with experimental pharmacology we may succeed, little by little, in gaining a deeper insight into the nature of the circulatory troubles which present themselves to our notice, and to choose with more discernment the treatments capable of combatting these troubles and of restoring the equilibrium.

Book Notices.

Clinical Pathology of the Blood. By JAMES EWING, A. M., M. D., Professor of Pathology in Cornell University Medical College, New York city. *Illustrated with 30 Engravings, and 14 Colored Plates, Drawn by the Author.* Lea Brothers & Co., Philadelphia and New York. 1901. Cloth. 8vo. Pp. 482.

This "treatise on the general principles and special applications of hæmatology" is of very great service to the physician or surgeon who studies his cases as to casual conditions and their effects. After an introductory on "the interpretation of analysis of the blood," follow chapters on "Technics," on the "Chemistry of the Blood," on "Morphology and Physiology of Red Cells," on "Leucocytes and Leucocytosis," and on "Development of Blood Cells." *Part II* considers the special pathology of the blood, giving full chapters to Chlorosis, Progressive pernicious anæmia, Leukemia, Pseudo-Leukemia, and to Anæmia Infantum Pseudo-Leukemica, Splenectomy. *Part III* deals with the acute infectious diseases, with an introductory section on the Blood in Fever. Special chapters are given to

pneumonia and diphtheria, to the exanthemata, to typhoid fever, to Widal's test, a chapter to miscellaneous infectious diseases, and a chapter on syphilis, tuberculosis, leprosy. *Part IV* is taken up with the pathology of the blood of constitutional diseases—one chapter being devoted to hemorrhagic diseases and diathesis; another chapter to miscellaneous constitutional diseases; another to nervous and mental diseases. *Part V* confines itself to three chapters on general diseases of viscera—including malignant tumors. *Part VI* is given up to the pathology of the blood of conditions due to animal parasites—including malaria, relapsing fever, and several miscellaneous parasitic diseases. It is an excellent, useful book for general use by general practitioners of medicine or surgery.

Editorial.

The American Electro-Therapeutic Association

Is to hold its eleventh annual meeting in Buffalo, N. Y., September 24 to 26, 1901, inclusive. Hotel Niagara will be headquarters for the convention, and the 74th Regimental Armory will be the assembly hall. As the Pan-American Exposition will not close until November 1st, it is thought the attendance will be unusually large. Dr. George E. Bill, of Harrisburg, Pa., is Secretary of the Association.

Professor Koch's Paper on Consumption.

Mr. W. R. Hearst, the energetic and progressive editor of one of America's greatest daily newspapers, *The New York Journal and Advertiser*, has published in pamphlet form a full *verbatim* text of Dr. Koch's paper read before the British Congress on Tuberculosis, in London, July 23, 1901, and cabled—after revision by the author—to the *New York Journal*. With the pamphlet Mr. Hearst sends a circular letter stating that he will be glad to receive any expressions regarding the paper, and particularly as to the conclusion of Dr. Koch that tuberculosis cannot be transmitted from cattle to human beings. We had already editorially commented on this article in the July 26, 1901, issue of the *Semi-Monthly*, and although we have great respect for the opinions of such a learned student as Dr. Koch, we are confident American physicians will receive his last remarkable statement with some degree of reserve.

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Proceedings of Societies, Etc.

VIRGINIA STATE BOARD OF MEDICAL EXAMINERS

The regular spring (or summer) meeting of the Medical Examining Board of Virginia met at Staunton, Va., Eakleton Hotel, June 24th, 9:30 P. M., 1901. The Board was called to order by Dr. R. W. Martin, President, of Lynchburg, Va.

On roll-call by Dr. R. S. Martin, Secretary, of Stuart, Va., the following other members were found to be present: Drs. E. T. Brady, Abingdon; Robert Randolph, Boyce; O. C. Wright, Jarratts; J. E. Warriner, Brook Hill; H. M. Nash, Norfolk; C. W. Rodgers, Staunton; E. C. Williams, Homeopathic, Hot Springs.

Minutes of the last meeting were read and adopted.

The President ruled that all applicants who have heretofore made 75 per cent. on any section be allowed credit for said section on the examinations about to take place.

The following amendment to Dr. E. T. Brady's resolution, in regard to oral examinations by practitioners who come from other States, was introduced by Dr. R. S. Martin, and adopted: After Medical Examining Board insert, "Having same requirements as our Board." The resolution will then read as follows:

Resolved, That the Virginia State Medical Examining Board desires to reciprocate with Boards of other States, but deems it necessary, for its own protection, that every applicant claiming such recognition shall present with his petition a diploma from a reputable college, together with an attested certificate from a State Medical Examining Board, *having same requirements as our Board*, and shall pass a satisfactory oral examination before a committee of the Board. Having complied with these requirements, a certificate will be issued on payment of the usual fee.

Questions on Chemistry, Anatomy, Physiology, Hygiene and Medical Jurisprudence, Materia Medica and Therapeutics, Obstetrics and Gynecology, and Practice, were read and adopted. Homeopathic questions of Dr. E. C. Williams were also adopted.

The following is to be the order of the examinations:

Tuesday—Practice, Materia Medica and Therapeutics, Chemistry.

Wednesday—Obstetrics and Gynecology, Surgery, Hygiene and Medical Jurisprudence.

Thursday—Physiology, Anatomy, Histology, Pathology, and Bacteriology.

The following committee was appointed to conduct the oral examinations: Drs. E. T. Brady, C. W. Rodgers, O. C. Wright, W. B. Robinson, Robert Randolph, J. E. Warriner, and E. C. Williams.

Dr. J. E. Warriner introduced the following resolution, which was adopted:

Resolved by the State Board of Medical Examiners, That we heartily endorse and pledge our support to the action taken by the Pharmaceutical, Dental and Legal Examining Boards to have incorporated in the Constitution a clause to prevent special legislation for the relief of unsuccessful candidates before said Boards.

Board Adjourned.

Board met for further consideration of business in the Mary Baldwin Seminary, June 26, 1901. Meeting was called to order by the President, Dr. R. W. Martin, and on roll-call by the Secretary, Dr. R. S. Martin, the following other members were found to be present: Drs. O. C. Wright, W. B. Robinson, Randolph, Slaughter, Brady, Rodgers, Lile, Priddy, Williams, W. L. Robinson, and H. M. Nash.

Dr. R. M. Slaughter was appointed a committee to codify the by-laws by our next meeting.

Dr. R. M. Slaughter introduced the fol-

lowing resolution, which was adopted under suspension of the by-laws:

Resolved, That the Medical Examining Board of Virginia will, in the future, decline to recognize the diploma of any college which does not conform to the requirements of the Association of Medical Colleges.

Dr. E. T. Brady introduced the following resolution, which was adopted:

Resolved, That examiners grade papers in regular order, and report twice weekly to the Secretary all papers then graded.

Committee who examined orally reported that they had examined 19 applicants, and passed all but three.

Board adjourned.

Board met in Eakleton Hotel, June 26th, 10 P. M., and was called to order by the President, Dr. R. W. Martin.

Present—Drs. R. S. Martin, Secretary; Pridly, Slaughter, W. L. Robinson, W. B. Robinson, Nash, Rodgers, Wright, Warriner, Randolph, and Williams.

The *Auditing Committee* reported as follows: We, your Auditing Committee, having carefully examined the books and accounts of Dr. R. S. Martin, Secretary and Treasurer, find the same correct, and that the Board had to its credit June 19, 1901, \$158.71.

It was agreed to hold the next meeting of the Medical Examining Board in Richmond, Va., December 16-19, 1901.

A committee was appointed to draft resolutions of thanks to the managers of Mary Baldwin Seminary for the use of the chapel in conducting our examinations.

There being no further business, the Board adjourned.

R. W. MARTIN, *President*.

R. S. MARTIN, *Secretary and Treasurer*.

The following are the *Questions adopted for Examination of the Applicants for License to Practice Medicine, etc., in Virginia*:

SECTION OF PRACTICE OF MEDICINE.

Dr. E. T. Brady, Abingdon, Va., Chairman and Regular Examiner.

Dr. E. C. Williams, Hot Springs, Va., Homeopathic Examiner.

Ques. 1. Define the terms, œdema, ascites and anasarca. Upon what do they depend? In what diseases are they usually found?

Ques. 2. What is chorea? Give varieties, symptoms and treatment.

Ques. 3. Define stomatitis, giving varieties and treatment?

Ques. 4. Define and give symptoms and treatment of chlorosis?

Ques. 5. Give usual causes of, and treatment for,

(a) Cardiac palpitation.

(b) Angina pectoris.

Ques. 6. Give diagnosis and treatment of acute gastric catarrh.

Ques. 7. Give etiology and symptoms of interstitial hepatitis.

Answer any six of above, and *only six*. Write and sign pledge by number.

SECTION ON MATERIA MEDICA AND THERAPEUTICS.

Dr. J. E. Warriner, Brook Hill, Va., Chairman of Section and Examiner on Therapeutics.

Dr. W. B. Robinson, Tappahannock, Examiner on Materia Medica.

Materia Medica.

Ques. 1. (a) What is the result of the action of strychnia upon the motor nerve cells of the spinal cord, the cardiac motor ganglia, the respiratory and vaso motor centres in the medulla and the sensory nerves and their terminal elements?

(b) By what routes may medicines be introduced into the circulation?

(c) Give (3) three drugs used as ammenagogues?

Ques. 2. (a) Give the physiological action of opium in medium and in toxic doses?

(b) Give (3) three drugs that are motor depressants?

(c) Three that are cerebral excitants?

Ques. 3. (a) Give the dose of the following medicines: Tinctura aconiti, tinctura ferri chloridi, tinctura digitalis, extractum ergotæ fluidum, tinctura opii, liquor potassii arsenitis, atropinæ sulphas, hydrargyri chloridum corrosivum, tinctura cinchonæ.

(b) Give (3) three drugs that are diuretics.

(c) (3) Three that are renal depressants?

Ques. 4. (a) Give the differences in physiological action between potassium bromide, sodium bromide, ammonium bromide, lithium bromide, calcium bromide, zinc bromide?

(b) Give (3) three drugs that are aphrodisiaes?

(c) Three (3) that are anaphrodisiaes.

Ques. 5. (a) Compare the physiological action of strophanthus, digitalis and aconite.

(b) Give the incompatibles with iodine and the iodides; with the mercurial salts and with strychnine.

(c) Give the physiological action of carbolic acid in toxic doses?

Answer only four of these questions.

Therapeutics.

Dr. J. E. Warinner, Brook Hill, Va., Examiner.

Ques. 1. (a) Why are antagonistic remedies sometimes combined? Give examples.

(b) Give rule for the computation of doses for children.

(c) What are injunctions and when are they indicated? Name portions of the body best adapted to their use.

(d) What circumstances influence the duration of action and effect of drugs.

Ques. 2. (a) Give therapeutic uses of digitalis.

(b) What drugs may be combined with it when arterial tension is too high?

(c) What are the objections to the long continued use of digitalis?

(d) What substitutes are free from these objections?

Ques. 3. (a) Give methods and name drugs for producing diaphoresis.

(b) Write two prescriptions having in combination the best cholagogues.

(c) Name three most important bromides, doses and therapy.

(d) Classify, give dose and therapy of methylene blue. State effect on the urine.

Ques. 4. (a) Give mode and interval of administration and dose of diphtheritic antitoxin.

(b) For what diseases is the antistreptococci serum used?

(c) Give the general principles governing the treatment of poisoning.

(d) What are chemical antidotes? What is the one necessary condition to their efficiency?

Ques. 5. (a) Give the strength of the following solutions: Nitrate of silver for ophthalmia neonatorum; cocaine hydrochlorate for local anæsthesia; sulphate of

zinc for conjunctivitis; bichloride of mercury for an uterine douche.

(b) What substances are most used for vesication?

(c) What drugs best relieve hæmaturia?

(d) Give treatment of opium poisoning.

Answer only four blocks. Write pledge and sign only with your number.

SECTION ON CHEMISTRY.

Dr. O. C. Wright, Jarratts, Va., Examiner.

Ques. 1. (a) State the names and general physical and chemical properties of the four halogens.

(b) How is chlorine found in nature, and why does it not occur in a free state?

(c) State the general principle for liberating chlorine from HCl and explain the action of the latter on manganese dioxide.

Ques. 2. (a) How is arsenic obtained in the metallic state; what are its physical and chemical properties?

(b) What is white arsenic? State its composition?

(c) Which three solutions containing arsenic are official, and what is their composition?

Ques. 3. (a) What is analytical chemistry?

(b) What is the object of qualitative and quantitative analysis?

(c) By what tests may organic compounds be distinguished from inorganic compounds?

Ques. 4. (a) What is sweet spirits nitre and how is it made?

(b) What is the solubility of fats in water, alcohol and ether?

(c) Explain the composition and manufacture of soap, and state the difference between hard and soft soap.

Ques. 5. What clinical indications are afforded by the following conditions of the urine?

(a) The quantity increased and sp. gr. lowered.

(b) The quantity increased and sp. gr. normal.

(c) Increased quantity and increased sp. gr.

Ques. 6. (a) In what diseases do we find the urine of a low sp. gr. and the quantity normal or subnormal?

(b) Quantity diminished and sp. gr. increased.

(c) Sp. gr. high and quantity normal.

Ques. 7. (a) What is the difference between fatty and aromatic compounds, and from which two hydrocarbons are they derived?

(b) Give tests for tannin, state the source from which it is derived, and for what it is used.

(c) From what is carbolic acid made? Give a reliable test for carbolic acid.

Ques. 8. (a) What physical actions have a tendency to decompose compound substances?

(b) What is the difference between analytical and synthetical methods?

(c) Explain the terms reaction and reagent. Answer only six of the above blocks. Pledge.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Drs. H. M. Nash, Norfolk, and Wm. L. Robinson, Danville, Regular Examiners; Dr. M. R. Allen, Norfolk, Homeopathic Examiner.

Obstetrics.

Ques. 1. Diagnosis of the fetal presentation and position by both the external and internal methods?

Ques. 2. Enumerate some of the most frequent causes of dystocia, and differentiate uterine inertia and obstructed labor.

Ques. 3. Granted an early diagnosis of an occipito-posterior position, what steps should be taken to overcome the difficulty, both before the rupture of the membranes and after the head is engaged in the pelvis?

Ques. 4. What are the indications for the induction of premature labor, and give the methods?

Ques. 5. Name the principal infecting agents; the different forms of infection produced by them; the prophylaxis and most approved treatment of puerperal infection?

Gynecology.

Ques. 1. What do the following terms signify: Parametritis, peri-metritis, metritis, endo-metritis, and what tissues are involved in each?

Ques. 2. What are the chief causes of pelvic abscess, its preventive treatment, and that after the abscess is developed?

Ques. 3. Differentiate adherent and non-adherent retro-deviation of the uterus; what conditions or symptoms would indicate

intervention, and what the remedy for each?

Ques. 4. Give causes, symptoms and physical diagnosis of recto-celc, and describe the operations for relief.

Ques. 5. Differentiate pregnancy from fibroid tumor of the womb.

SECTION ON SURGERY.

Dr. Sammel Lile, Lynchburg, Va., Examiner.

Ques. 1. (a) Give local and constitutional treatment of inflammation.

(b) Give processes of repair in wounds.

(c) Describe traumatic fevers.

(d) Give treatment for frozen tissue.

Ques. 2. (a) Give causes, symptoms and treatment of pyæmia.

(b) Give general treatment of wounds.

(c) Give diagnosis and treatment of fracture of the olecranon process.

Ques. 3. (a) Diagnose and treat fracture in lower third of femur.

(b) Give early diagnosis, treatment and prognosis of morbus coxarius.

Ques. 4. (a) Give pathology of recent dislocations and of sprains.

(b) Describe tracheotomy, and tell when indicated.

(c) Give diagnosis of abscess of liver and of gall stones.

Ques. 5. (a) Define hernia, and give conditions preventing reduction.

(b) Give coverings of an oblique inguinal hernia.

(c) What is hydrocele, and how treated?

Ques. 6. (a) Mention chief dangers common to all surgical operations.

(b) Describe operation for ligating femoral artery above Hunter's canal.

Pledge.

SECTION ON HYGIENE AND MEDICAL JURISPRUDENCE.

Dr. A. S. Priddy, Examiner, Marion, Va.

HYGIENE.

Ques. 1. (a) What is the maximum amount of CO₂ in atmosphere air, which may be compatible with health? and

(b) Define ventilation. What is meant by "initial air space," and of what capacity should it be for one person?

Ques. 2. Water fit for drinking and domestic purposes should possess what essential qualities?

Ques. 3. Name and give examples of not less than five causes, from which articles of food may become poisonous.

Ques. 4. In what ways may milk cause disease, and how may such results be prevented?

Ques. 5. How should a body dead from such contagious diseases as typhoid fever, diphtheria and erysipelas be prepared for transportation when not embalmed?

Medical Jurisprudence.

Ques. 1. (a) Define idiocy. (b) Define insanity. (c) Define paranoia.

Ques. 2. (a) What is a poison? (b) How are poisons classified? (c) Give an example of each class.

Ques. 3. (a) For what salt is oxalic acid frequently mistaken? (b) Give tests for oxalic acid. (c) What are the symptoms and *post-mortem* appearances of poisoning by oxalic acid?

Ques. 4. What *post-mortem* conditions found in a body would assist in determining whether death was due to drowning or to other causes before being placed in water?

Ques. 5. Give the differential symptoms between strychnia poisoning, hysterical tetanus and traumatic tetanus.

SECTION ON PHYSIOLOGY.

Dr. Robert C. Randolph, Boyce, Va., Examiner.

Ques. 1. (a) Trace complete circuit of blood, beginning at right heart, and mention changes it undergoes in its course.

(b) What are the three most important intrinsic cardiac ganglia?

(c) What physical facts are necessary for the maintenance of arterial blood pressure?

Ques. 2. (a) Name the four elementary tissues.

(b) How many chemical elements enter into the composition of the human body?

(c) Name the three most important organic substances found in the body.

Ques. 3. (a) Name the varieties of epithelium and locate the different varieties in the alimentary canal.

(b) In what parts of the body is non-striated muscle tissue found?

(c) What are the fluid tissues of the body, and give brief description of each.

Ques. 4. (a) What part does ptyalin play in digestion, and where is it found?

(b) Where is steapsin found, and what is its action?

(c) Describe stomach digestion.

Ques. 5. (a) Give number of spinal nerves and function of Ant. and Post. roots.

(b) What is the difference in distribution of gray and white matter in the brain and in the spinal cord?

(c) Describe arrangement of gray and white matter in a section of spinal cord.

Ques. 6. (a) Locate cortical centre for first cranial nerve.

(b) Name the divisions of the fifth cranial, which are sensory and which are motor or mixed?

(c) What is the function of the twelfth cranial nerve?

SECTION ON ANATOMY.

Dr. C. W. Rodgers, Staunton, Examiner.

Ques. 1. Describe (a) The lower extremity of the femur.

(b) Name in order the bones of the foot, commencing with the os calcis.

Ques. 2. Describe the hip-joint (class, variety, ligaments, movements). What muscles strengthen it?

Ques. 3. Give the origin, insertion and action of the following muscles: Biceps, flexor brachialis anticus pectoralis major, sartorius.

Ques. 4. Give superficial (apparent) origin of the twelve pairs of cranial nerves.

Ques. 5. Describe the brachial artery, giving relations to cords and muscles.

Ques. 6. Mention the branches of the popliteal artery, and give its relation to popliteal vein and internal popliteal nerve.

Ques. 7. Describe (a) The caecum.

(b) The ascending colon, and mention its relation to the liver.

SECTION ON HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Dr. R. M. Slaughter, Theological Seminary, Va., Examiner.

Answer questions 1 and 2, and any four of the remaining six.

Ques. 1. (a) Define the term parenchyma and state the tissue composing respectively the parenchyma of the liver and the heart.

(b) Name the tissue composing respectively

the splenic trabeculae and Malpighian bodies.

(c) Name the variety of epithelium of the cervix, cervical canal, endometrium and Fallopian tubes.

(d) What are Perkinje's cells, and where are they found?

Ques. 2. (a) Name the important spore-forming pathogenic bacteria.

(b) What is the morphological characteristic of motile bacteria?

(c) Describe (give morphology and pathogenicity of) the *b. coli communis*.

Ques. 3. Describe amyloid degeneration, giving seat organs commonly affected, and causes.

Ques. 4. (a) Describe the character of exudate in catarrhal pneumonia.

(b) State how resolution takes place.

(c) Name the diseases to which catarrhal pneumonia is most commonly secondary, and

(d) The micro-organisms that may cause it.

Ques. 5. Define (a) pyemia, (b) septicemia, (c) sapremia, and (d) how they differ from each other.

Ques. 6. In case of woman who some days after childbirth is suddenly taken with dyspnea and cardiac syncope and quickly dies, define and explain the cause of death.

Ques. 7. Describe the gross and microscopical appearance of an epithelioma of the skin.

Ques. 8. What is trichiniasis or trichinosis? Describe mode of infection and characteristic changes in the voluntary muscles and blood.

ALPHABETICALLY ARRANGED LIST OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE, SURGERY, ETC., WHO PASSED SATISFACTORY EXAMINATIONS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA DURING ITS SESSION JUNE 24-27, 1901, HELD AT STAUNTON, VA.

Alexander, J. L., Stuart's Draft, Va., Univ. of Va., 1900.
 Bowser, Oswald B. H., Richmond, Va., Howard Med. College, 1901.
 Burton, G. M., Stribling Spring, Va., Univ. Col. of Medicine, 1901.
 Baggary, C. M., Washington, Va., Univ. Col. of Med., 1901.
 Brenneon, T. H., Norfolk, Va., Univ. of Va., 1900.
 Bailey, C. L., Skinquarter, Va., Med. Col. of Va., 1901.
 Berlin, Lewis, Baltimore, Md., Col. Phys. and Surgs., Baltimore, 1901.

Baker, Barnard E., Buffalo Lithia Springs, Va., Med. Col. of S. C., 1891.
 Branscomb, J. R., Cabell, Va.-Tenn., Med. Col., 1899.
 Carroll, J. W., Lynchburg, Va., Univ. of Va., 1901.
 Callahan, J. F., Norfolk, Va., Howard Univ., 1899.
 Campbell, Malcolm, Abingdon, Va., Med. Col. of Va., 1901.
 Cowper, C. W., Norfolk, Va., Univ. of the South, 1901.
 Chancellor, P. S., Baltimore, Md., Col. Phys. and Surg., Baltimore, 1901.
 Chinn, W. N., Hague, Va., Med. Col. of Va., 1901.
 Cooke, W. L., Richmond, Va., Med. Col. of Va., 1901.
 Cannaday, John E., Richmond, Va., Univ. Col. of Med., 1901.
 Deyerle, J. H., Richmond, Va., Univ. Col. of Med., 1901.
 Darden, J. C., Suffolk, Va., Univ. Col. of Med., 1901.
 Early, J. L., Hillsville, Va., Univ. Col. of Med., 1901.
 Freed, J. W., Hermitage, Va., Univ. of Va., 1901.
 Foster, W. Brownley, Richmond, Va., Med. Col. of Va., 1901.
 Fauntleroy, A. M., Staunton, Va., Univ. of Va., 1901.
 Fergusson, J. H., Sweet Springs, W. Va., Med. Col. of Va., 1890.
 Gibson, John A., Baltimore, Md., Univ. of Md., 1901.
 Glass, Robert McCheyne, Winchester, Va., Univ. of Md., 1901.
 Goodman, H. L., Otter River, Va., Med. Col. of Va., 1901.
 Grinnan, St. George Tucker, Orange, Va., Univ. of Va., 1901.
 Geiger, John C., Staunton, Va., Univ. of Va., 1901.
 Gale, S. S., Roanoke, Va., Col. Phys. and Surgs., N. Y., 1901.
 Glover, Perkins, Buckingham, Va., Med. Col. of Va., 1901.
 Gallup, Lynn J., Norfolk, Va., Col. Phys. and Surgs., Baltimore, 1901.
 Gills, Wm. J., Farmville, Va., Univ. Col. of Med., 1901.
 Gregory, F. J., Keysville, Va., Vanderbilt Univ., 1901.
 Hargrove, W. F., Baltimore, Md., Univ. of Md., 1901.
 Harris, W. A., Spotsylvania, Va., Med. Col. of Va., 1901.
 Hirschler, David Lee, Norfolk, Univ. of Virginia, 1901.
 Hunter, James W., Norfolk, Univ. of Virginia, 1901.
 Hammer, Virgil, Luray, Va., Med. Col. of Va., 1901.
 Hankins, J. L., Basses, Va., Med. Col. of Va., 1901.
 Harrison, G. P., Richmond, Va., Univ. Col. of Med., 1901.
 Hornbaker, F. W., Manassas, Va., Univ. Col. of Med., 1900.
 Hove, Cassius W., Brentsville, Va., Med. Col. of Va., 1886.
 Hunter, E. D., Norfolk, Va., Col. Phys. and Surgs., Baltimore, 1901.
 Hart, A. T., Ogburn, Va., Med. Col. of Va., 1901.
 Irvine, G. B., Evington, Va., Univ. Col. of Med., 1901.
 Jones, R. P., Norfolk, Va., Univ. of Va., 1900.
 Jordan, J. W., Richmond, Va., Med. Col. of Va., 1901.
 Kennard, H. W., Baltimore, Md., Univ. of Md., 1899.
 Kenney, John A., Charlottesville, Va., Leonard Med. Col., 1901.
 Kernan, Paul, Roanoke, Va., Med. Col. of Va., 1901.
 Lillard, Edward Newton, Graves Mill, Va., Med. Col. of Va., 1901.
 Lankford, James W., Richmond, Va., Med. Col. of Va., 1901.
 Loeb, Lewis, Newport News, Va., Jefferson Med. Col., 1895.
 Mabry, J. H., New Canton, Va., Univ. Col. of Med., 1901.
 McGill, Elisha L., Petersburg, Va., Col. Phys. and Surgs., N. Y., 1901.
 Moran, M. M., Moran, Va., Univ. Col. of Med., 1901.
 Miller, John L., Grundy, Va., Univ. of Louisville, 1894.

- Marden, T. B., Baltimore, Md., Univ. of Md., 1892.
 Murrell, T. W., Richmond, Va., Univ. Col. of Med., 1901.
 Nicholson, N. A., Pleasant Ridge, Va., Univ. Col. of Med., 1901.
 Nelson, W. W., North, Va., Univ. Col. of Med., 1901.
 Nevette, R. R., Ballston, Va., Univ. Col. of Med., 1901.
 O'Brien, John, Jr., Manchester, Va., Med. Col. of Va., 1901.
 Pine, John S., Lebanon Church, Va., Univ. Col. of Med., 1901.
 Price, W. H., Montvale, Va., Univ. of Virginia, 1901.
 Parkins, E. W., Baltimore, Md., Md. Med. Col., 1901.
 Patton, H. W., Hartwood, Va., Med. Col. of Va., 1901.
 Painter, Wm. G., Draper, Va., Med. Col. of Va., 1901.
 Preston, Eleanor F., Marion, Va., Woman's Med. Col., Philadelphia, 1901.
 Pyott, Frank, Five Oaks, Va., Vanderbilt Univ., 1898.
 Parker, F. M., Emporia, Va., Md. Med. Col., 1900.
 Rodgers, W. R., Baltimore, Md., Univ. of Md., 1901.
 Rice, J. A., Heathsville, Va., Univ. of Va., 1901.
 Rittenour, A. A., Alexandria, Va., Columbian Univ., 1900.
 Read, B. J., Bedford Springs, Va., Univ. of Va., 1901.
 Ragland, John F., Jr., Drewry's Bluff, Va., Med. Col. of Va., 1899.
 Steurt, Geo. Hume, Baltimore, Md., Univ. of Md., 1899.
 Stretch, James, Richmond, Va., Univ. Col. of Med., 1901.
 Schmidt, John W. A., W. Hoboken, N. Y., Univ. Col. of Med., 1901.
 Sellers, Frank E., Mauzy, Va., Univ. of Va., 1901.
 Sinclair, J. A. B., Charlottesville, Va., Univ. of Va., 1901.
 Shay, D. J., Norfolk, Va., Univ. of N. Y., 1895.
 Sillman, J. P., Comus, Md., Col. Phys. and Surg., Baltimore, 1896.
 Thornhill, W. A., Longdale, Va., Med. Col. of Va., 1901.
 Tabbott, Edward M., Falls Church, Va., Georgetown Col., D. C., 1901.
 Trice, D. M., Whiteston, L. I., N. Y., Hosp. Col. of Med., Louisville, 1890.
 Tilman, J. E., Powhatan C. H., Med. Col. of Va., 1900.
 Valentine, Thomas H., Staunton, Va., Univ. Col. of Med., 1901.
 Vermillion, V. A., Poplar Hill, Va., Md. Med. Col., 1900.
 Whitmore, W. S., Mt. Sidney, Va., Univ. of Va., 1901.
 Wilkinson, Wm. W., Nebiets, Va., Univ. Col. of Med., 1901.
 Wagner, J. A., Bland C. H., Med. Col. of Va., 1901.
 Wilson, Lewis F., Waterford, Va., Univ. of Va., 1901.
 Weymoutn, S. E., Richmond, Va., Univ. Col. of Med., 1901.
 Wiseman, H. A., Jr., Danville, Va., Univ. of Va., 1901.
 Webb, F. B., Roanoke, Va., Univ. Col. of Med., 1901.
 Whitman, Wm. R., Pulaski, Va., Col. Phys. and Surgs., N. Y., 1901.
 Wallace, H. M., Spotswood, Univ. Col. of Med., 1901.
 Wilcox, D. D., Blackwells Island, N. Y., Univ. Col. of Med., 1901.
 Young, John W., Belona, Va., Univ. Col. of Med., 1901.

No. of Examination Paper.	LIST OF INSTITUTIONS Whose Graduates were Rejected by the Medical Examining Board of Virginia, at its Regular Spring Meeting, June 24-27, 1901. With Percentage Marks of each.											Remarks.
	COLLEGE OF GRADUATION.											
	Hygiene and Medical Jurisprudence.	Chemistry.	Anatomy.	Physiology.	Histology, Pathology, Bacteriology.	Obstetrics and Gynecology.	Material Medica and Therapeutics.	Practice.	Surgery.	Total.	Average Percentage.	
2	University of Maryland	84	60	75	77	45	71½	68½	75	80	636	70
8	University College of Medicine	92	75	78	70	50	79½	69½	70	75	658½	73
9	University College of Medicine	83	70	72	66	65	67½	76	68	80	641	71
10	Medical College of Virginia	85	75	78	67	45	58½	75	76	70	629½	69+
15	Leonard Medical College	45	71	62	78	50	66	75	78	55	580	64+
21	University College of Medicine	80	64	86	62	75	77½	72½	70	70	657	73
26	Physicians and Surgeons, Atlanta, Ga.	75	67	87	71	58	65½	75	80	55	643	70+
28	University College of Medicine	..	..	..	..	..	..	..	..	..	..	..
33	University of the South	75	79	71	74	65	70½	75	74	45	628	69+
40	University of the South	78	75	82	76	70	73	71	75	50	650	72+
48	University College of Medicine	92	75	72	73	48	72	78	74	70	654	72½
49	Baltimore Medical College	75	60	35	43	45	70	68	70	50	516	57+
64	Medical College of Virginia	75	76	75	70	60	64½	67½	77	60	625	69+
65	University of Georgia	97	82	50	65	60	77	70	84	40	625	69+
66	Medical College of Virginia	80	64	86	62	75	77½	72½	70	70	657	73
77	University of the South	90	81	65	79	60	73	64	82	60	654	72
79	University College of Medicine	78	80	65	53	65	76	73	80	75	645	71+
82	Medical College of Virginia	84	76	81	65	65	68	74½	81	60	662½	73+
84	Maryland Medical College	..	..	..	..	..	..	..	..	..	..	..
85	Medical College of Virginia	84	80	71	60	45	55	65	74	40	600	66+
92	University of the South	94	66	75	40	55	(1)½	70	75	55	580½	65+
94	Medical College of Virginia	79	75	68	60	68	83	75½	75	75	658½	73
95	Maryland Medical College	..	..	..	..	..	..	..	..	..	..	..
103	University of the South	86	77	77	66	50	60	70	80	60	475	52+
106	University of the South	84	67	78	65	40	69½	78	77	45	611	67+
110	University of the South	88	75	81	49	40	77	57½	70	50	587½	65+
112	Jefferson Medical College	73	78	69	58	48	71½	72½	80	70	620	68+
117	University College of Medicine	92	66	69	78	50	58	69½	81	65	625½	69+
118	University College of Medicine	90	70	88	69	62	69	72½	73	65	653½	72+
125	University of Virginia	80	78	88	72	40	66½	64½	78	65	632	70
154	Maryland Medical College	..	..	..	..	..	..	..	..	..	..	..
155	University of the South	95	75	85	59	65	69½	63½	74	50	636	70+
163	Baltimore University School of Medicine	88	62	70	32	40	66½	69	76	50	553½	61+
146	Medical College of Virginia	92	..	73	50	..	47	62½	49	65	..	..

INSTITUTIONS REPRESENTED BY APPLICANTS WHO CAME BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA. SPRING SESSION AT STAUNTON, VA., June 24-27, 1901.	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Partial Exam'n.
Medical College of Virginia	31	24	7	
University of Virginia	19	18	1	
University College of Medicine, Richmond, Va.	34	26	8	
Physicians and Surgeons, Baltimore	5	5	..	
Physicians and Surgeons, New York	3	3	..	
Physicians and Surgeons, Atlanta, Ga.	1	..	1	
University of Maryland	1	7	1	
Baltimore University School of Medicine	1	..	1	
Maryland Medical College	6	3	3	
Woman's Medical College of Philadelphia	1	1	..	
Jefferson Medical College	1	1	..	
University of the South	9	1	8	
Leonard Medical College	2	2	..	
Howard Medical College	1	1	..	
Medical College of State of South Carolina	1	1	..	
Tennessee Medical College	1	1	..	
Vanderbilt University	2	2	..	
Baltimore Medical	1	..	1	
Georgetown College, District of Columbia	1	1	..	
Columbian University, District of Columbia	1	1	..	
Hospital College of Medicine, Louisville	1	1	..	
University of Louisville	1	1	..	
Howard University	1	1	..	
University of New York	1	1	..	
University of Georgia	1	..	1	
Non-Graduates taking partial examination	34	..	..	34
Total	169	101	34	34

INSTITUTIONS REPRESENTED BY THE APPLICANTS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, FROM THE ORGANIZATION OF THE BOARD, JAN. 1, 1885, TO JUNE 24-27, 1901.	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected on Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Licensed Fourth Examination.	Rejected Fourth Examination.	Licensed Fifth Examination.	Rejected Fifth Examination.	Incomplete or Withdrew.	Partial Examination.
Total number before Board from organization to June 25-28, 1900.	1641	1157	426	85	60	18	21	2	21	..	..	30	13
Medical College of Virginia	31	15	6	7	..	1	1	..	..	1	..	..	..
University of Virginia	19	12	1	5	..	1	..	..	..	..	..	..	..
University College of Medicine	34	24	8	2	..	..	..	..	..	..	..	..	..
College Physicians and Surgeons, Baltimore	5	4	..	..	..	..	..	..	..	..	..	..	..
College Physicians and Surgeons, New York	3	3	..	..	..	1	..	..	..	..	..	..	..
College Physicians and Surgeons, Atlanta, Ga.	1	..	1	..	..	..	..	..	..	..	..	..	..
University of Maryland	1	6	1	1	..	..	..	..	..	..	..	..	..
Baltimore University School of Medicine	1	1	1	1	..	..	..	..	..	..	..	..	..
Maryland Medical College	6	2	3	1	..	..	..	..	..	..	..	..	..
Woman's Medical College of Philadelphia	1	1	..	..	..	..	..	..	..	..	..	..	..
Jefferson Medical College	2	1	1	..	..	..	..	..	..	..	..	..	..
University of the South	2	1	1	..	..	..	..	..	..	..	..	..	..
Leonard Medical College	2	1	1	..	..	..	..	..	..	..	..	..	..
Howard Medical College	1	1	..	..	..	..	..	..	..	..	..	..	..
Medical College of State of South Carolina	1	1	..	..	..	..	..	..	..	..	..	..	..
Tennessee Medical College	1	1	..	..	..	..	..	..	..	..	..	..	..
Vanderbilt University	1	1	..	..	..	..	..	..	..	..	..	..	..
Baltimore Medical College	2	1	1	..	..	..	..	..	..	..	..	..	..
Georgetown College, District of Columbia	1	1	..	..	..	..	..	..	..	..	..	..	..
Columbian University, District of Columbia	1	1	..	..	..	..	..	..	..	..	..	..	..
Hospital College of Medicine, Louisville	1	1	..	..	..	..	..	..	..	..	..	..	..
University of Louisville	1	1	..	..	..	..	..	..	..	..	..	..	..
Howard University	1	1	..	..	..	..	..	..	..	..	..	..	..
University of New York	1	1	..	..	..	..	..	..	..	..	..	..	..
University of Georgia	1	1	..	..	..	..	..	..	..	..	..	..	..
Non-Graduates taking partial examination	34	..	..	..	..	..	..	..	..	..	..	..	34
Total	1810	1238	458	102	60	21	22	2	21	1	..	30	47

OUR MEDICAL COLLEGE ADVERTISEMENTS.

It was a common saying, not more than a decade or two past, that any one could be a doctor. Then a preliminary examination, or the presentation of a certificate of proficiency from a school teacher, or other evidence of satisfactory attainments in arithmetic or rudimentary

English, was only nominally required of the matriculate in the best of medical colleges. Hence, while there were some worthy eminent men in the profession in those days, it must be confessed that a large proportion of graduated doctors of medicine were ridiculously ignorant of the elements of a classical or scientific edu-

cation. But that day has passed. The time has come when none of the reputable medical colleges want matriculates for the first year who are not entitled to at least the certificate of the grammar school. It is preferable that students should come to the study of medicine with certificates of graduation from a high school of the public school system; indeed, it is better that they be graduates of some of the academic colleges. In fact, an illiterate person is not wanted by any of the reputable medical colleges. It is good advice, kindly intended to any young man or woman who may be reading these notes—Not to think of trying to matriculate in any reputable medical college until he or she becomes well grounded in the elements of a good grade academic education.

A question that each one proposing to enter a medical college should ask himself—Can I see my way clear to pay expenses as I go? If he has no money, nor any friend willing and able to help him through his college course of four years, that poor fellow had better not undertake the beginning of the study of medicine. Every year numbers of young men start, with zealous interest, in their first year study of medicine, to find themselves unable, before the session ends, to buy their text-books, to pay their board bills, and even without funds enough to return to their homes; at length, their impecuniosity compels them to give up their college course, and thus time is lost from preparation for other avocations of life better suited to their means.

The party proposing to make an educated and properly-equipped doctor of himself or herself should have something of an insight into the duties and life work of the physician or surgeon. He should realize the responsibilities of his proposed profession—that he will be constantly dealing with the health and life of his fellow-man. At times, in the hours of distress in the family circle, he has to be the advising friend. His dealings should keep him ever mindful of the golden rule.

The majority of reputable graduating medical colleges deem it best to take the student step by step through the standard text-books, helping him by dictating lectures and thorough quiz-courses. The anatomical branches require that the dissecting halls shall be well supplied with subjects, so as to allow ample material for each one to do actual dissection. The study of physiology, of chemistry, of histology and pathology,

and of bacteriology, etc., cannot be satisfactorily prosecuted without fully-equipped laboratories, which are expensive. Nor can the further advanced student get along without attendance upon clinics—medical and surgical—and learning how to diagnose the disease of the patient; hence, the costly addition of dispensary and hospital facilities. Without such provisions, no medical college of to-day has a right to exist.

In addition, the teaching corps of every institution should be competent and willing to do their part in the instruction of students. Unfortunately, in some instances, the professors, or instructors, etc., seem more intent upon displaying their knowledge of a subject than upon imparting it to the student who pays his money to learn.

A glance at the advertisements of medical colleges in this issue of the *Semi-Monthly* will show a list that ought to satisfy any reasonable demand of student or guardian.

The various State Medical Examining Boards require that applicants for examination as to fitness to practice medicine in the several States shall be graduates of reputable medical colleges which require the four years' graded course of study. Hence, it is hard to find a medical college in this country that does not comply with this requirement. Even if such diploma-granting mills exist, of what use are they, since the States generally will no longer let graduates of such institutions practice within their territory? The several Medical Examining Boards of the United States have fixed upon a minimum standard, below which the graduate of no medical college can go, and yet be recognized. As the colleges are also required to have continuous teaching sessions of not less than six months, it is evident that the medical student of to-day has far better opportunities to acquire knowledge of the duties of the practitioner, and to fit himself for their discharge than was customary only a few years ago, when colleges graduated after a two-session, attendance of about four months each.

Presuming that the proposed medical student has a satisfactory preliminary education, that he appreciates the nature of the work that lies before him, that he has a reasonable expectancy of ability to pay as he goes,—what next? He should go to his medical college in good health, with a well-grounded determination to be a faithful, constant student throughout his entire course. Ample recreation hours are now ar-

ranged in most well-regulated graded courses for healthful exercises. Gymnasiums are now a part of the general provisions of properly-equipped medical colleges, so as to let the students retain their good health.

What is to become of the medical graduate—after he passes his State Board of Medical Examiners? It is estimated that there is now in the United States about one doctor to every 600 of the population. As long as this proportion remains, the profession will not be overrun. As year by year rolls by, enterprises are constantly springing up which call for the services of medical advisors. The changed policy of the United States has placed this government on a future war footing, which demands enlargement of the navy, army, etc.; consequently, calls for a constantly-increasing number of surgeons for the respective medical and surgical corps. State asylums and sanitariums have to be established all over the country, calling for from one or two to five or more doctors for each such institution. Life insurance companies are constantly extending their fields of operation as people become more and more educated to the necessity of keeping their lives insured; and the examinations of applicants for policies in these companies require the services of doctors, besides the doctors retained at the home or large branch offices as medical directors. Railroad corporations are more and more finding out their need for medical or surgical advisory services; this "find out" is extending likewise even to street electric car lines. The rapidly multiplying ocean passenger steamships must each have its surgeon and assistant. Colleges and seminaries that have a large patronage are now requiring the retained services of a doctor. Mines and enterprises of that kind must each have its doctor. Specialties in medicine of various kinds are rapidly developing, and are becoming more and more popular, without interfering with the general run of work by the general practitioner of either medicine or surgery. The various health and pleasure resorts of the country have now to arrange for their physicians. Communities are continuously growing in population, while deaths are daily leaving vacancies in the profession. So that with the relatively decreasing number of future yearly graduates in medicine because of the lengthened four years' graded courses of medical colleges, and, further, in view of the large percentage of eliminations from this list of graduates by the various State Medical

Examining Boards, it is probable that there will be ample room for competent graduates for years to come.

Now, as to which college the prospective medical student is to select, we must leave to his or her decision. We present the claims of a number of the best institutions of the country:

UNIVERSITY OF VIRGINIA (MEDICAL DEPARTMENT), Charlottesville, Va.

The seventy-eighth session of the University of Virginia will open on the 15th of September, 1901, and the work of the Medical Department will at once begin and continue for nine months. The thoroughness of instruction which has marked the career of this school in the past is fully maintained, while the teaching facilities are being expanded with the progress of medical education in the United States. The new hospital building is in use, and the Administration Building of the new hospital is completed, well equipped, and affords increased clinical advantages.

MEDICAL COLLEGE OF VIRGINIA, Richmond, Va.

Is one of the oldest and best known of Southern medical institutions, and embraces departments of medicine, dentistry, and pharmacy. Founded in 1838, it has kept thoroughly abreast with the many advances in medicine, surgery and medical teaching. It was the first of the three medical institutions in this State to adopt the four-year course of medical instruction, and, as evidence of the public appreciation of its progressive spirit, there was the largest number of students in the history of the college in attendance last session. Its progress and prosperity are shown by the continued improvement of its equipment and the increase of its hospital accommodations, which include a separate building used exclusively as a maternity hospital. The three principal lecture halls have been furnished with opera chairs and handsome new desks, thus adding greatly to the comfort and convenience of the students.

A most important adjunct to its teaching facilities will be the elaborate new Charlotte Williams Hospital, which is now being erected at the corner of Broad and Twelfth streets, two blocks from the college building. The faculty of this College will have the exclusive right to use the hospital for teaching purposes, and it will enable them to offer students advantages in systematic clinical instruction not to be found

elsewhere in the Southern States from Maryland to Louisiana.

UNIVERSITY COLLEGE OF MEDICINE, Richmond, Va.

This institution, having as heretofore its fully-equipped departments of Medicine, Dentistry, and Pharmacy, has never allowed a year to pass since its founding without witnessing some important addition to its didactic or clinical facilities. This year the faculty announces to the public the completion and formal opening of the "Hunter McGuire Memorial Annex," a splendid addition to the Virginia Hospital, designed exclusively for the clinical purposes of the University College of Medicine, and is to be used by the faculty more particularly for bedside instruction to small sections of graduating classes. This annex contains six large wards, several private rooms, diet kitchens, bath-rooms, and two large glass-enclosed verandas, or sunshine wards. In connection with this, there has been erected the new surgical amphitheatre, constructed according to the most advanced ideas, supplied with every convenience for the operator, and provided with every facility for the observer. Besides these additions to the teaching facilities of the College, a number of improvements have been made in the various laboratories and lecture-rooms. All these new features have been added to further the purpose of the faculty, greatly to enlarge the scope of the entire course in view of the change from the three to the four-year system.

This College has conducted an optional four-year course for a number of years past, and in addition to the three full classes in the new four-year system, will have a graduating class at the end of the session of 1901-2. This graduating class, on account of the improvements in the course of study and the greatly enlarged clinical opportunities, which have been provided for the future use of much larger classes, will have such unusual advantages as come only at long intervals, upon the inauguration of new epochs like the present. The next session will begin on October 1, 1901.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF NASHVILLE, Tennessee.

The annual catalogue of the Medical Department of the University of Nashville has just been issued. This institution, though one of the oldest in the South, is young and progressive in spirit, as the numerous advances in equipment

and facilities well indicate. Among the advances made for the coming session are: 1. Increased clinical facilities, two hours daily being given. 2. A new laboratory of practical physiology. 3. The addition to the faculty of a lectureship on diseases of children.

This time-honored institution numbers among its graduates 4,369 physicians.

MEDICAL DEPARTMENT OF VANDERBILT UNIVERSITY, Nashville, Tenn.

Vanderbilt's announcement for 1901-2 indicates that it is meeting the advancements in medical teaching along all lines. The enrolment for the past year shows a marked increase in patronage, drawn from all sections of the United States, and reaching even beyond. The class graduated last spring was the last of the three-year classes. Hereafter it will require four years to complete the course. The building, specially designed for medical teaching, is amply equipped with modern apparatus for practical laboratory work, which is a leading feature of the institution. Nashville, Tenn., possesses everything needful for the medical student. Hospital privileges are abundant.

WESTERN RESERVE UNIVERSITY (MEDICAL DEPARTMENT), Cleveland, O.

The Medical Department of the Western Reserve University offers the following advantages:—For admission it requires completion of the junior year of a literary college, or an examination by the faculty of Adelbert College. It is endowed, and has fully-equipped laboratories, the teachers in which devote their entire time to teaching and research work. A new laboratory of clinical microscopy has been built, and the chair endowed. It has 700 hospital beds, besides dispensaries. Seventy-seven per cent. of its graduates last year received hospital appointments. Its course is graded, and comprises four years of eight months each. Its buildings are modern. Its fees are moderate.

WESTERN PENNSYLVANIA MEDICAL COLLEGE, Pittsburgh, Pa.

This college is the Medical Department of the Western University of Pennsylvania. It is about to open its *sixteenth annual session* better prepared than ever to give a thorough course of instruction in each of the branches of medical science. Its laboratories and apparatus are ample for every purpose of the medical student,

The manufacturing interests of Pittsburgh compel a large population of the working class, which keep the hospitals well filled with cases of disease and injuries of all grades and kinds common to that section of country, that give the students ample clinical material and opportunities. The corps of professors and assistants are well selected for their special duties. And the results of their work, as tested by various Medical Examining Boards, State and national, is most gratifying.

JEFFERSON MEDICAL COLLEGE, Philadelphia, Pa.

The seventy-seventh annual announcement of this sterling institution has been issued. From reading it, one can see that the enterprising spirit which constructed the new buildings and laboratories has been rewarded by large and enthusiastic classes. The demands of a scientific education must be met by just such a liberal spirit on the part of college authorities everywhere. The time has gone by when the medical student will be content with the waxed model and manikin shown in a hasty hour by a busy practitioner. Hospitals, museums, laboratories, libraries, all must be worked for the advantage of the medical student under the eye of experienced teachers, whose whole working hours must be devoted to this business. The courage to spend handsomely on new appliances, to take an advanced position in standards of education, has never had a better fruition than is illustrated in Jefferson Medical College.

MEDICO-CHIRURGICAL COLLEGE, Philadelphia.

The Medico-Chirurgical College of Philadelphia has probably developed more rapidly than any similar institution in the country. Features that have strongly contributed to this result are the facilities for practical teaching, careful laboratory instruction, limited and small ward-classes, the seminar system of didactic instruction, free quizzes to all students, and the personal attention given by the faculty to the students.

The new clinical amphitheatre, the large hospital and dispensaries, and the new and up-to-date laboratory building afford unexcelled opportunities for practical work and instruction to both under-graduate and post-graduate students. The College has also a Department of Dentistry, a Department of Pharmacy, and a special quiz course for post-graduates who desire to enter the United States Army, Navy, or

Marine Hospital Service, or to prepare for State Board and hospital examinations.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Philadelphia.

The course of instruction in this school continues through four college years, and is given by means of lectures, demonstrations, laboratory work, recitations, and clinical teaching so arranged as to constitute a progressive course of study and practical work.

The didactic instruction of the former three-years' course, somewhat increased, is distributed over four years, the additional instruction being mainly of a clinical and demonstrative character. In addition to attendance on the regular didactic and clinical lectures, the requirements include recitation on the subjects of the professors' lectures, practical work in the chemical, pharmaceutical, anatomical, histological, embryological, physiological, pathological, and bacteriological laboratories; attendance upon operative and other practical courses in surgery, obstetrics, and gynecology, physical diagnosis, and special clinical class-work.

Applicants for admission to the regular college course must be not less than eighteen years of age.

CORNELL UNIVERSITY MEDICAL COLLEGE.

This medical college (414 E. Twenty-sixth street, New York city) will begin its fourth annual session in October in the magnificent new building, which has been designed as a combination of a medical college and a dispensary. Cornell has always been justly famous for the practical character of its instruction. This is chiefly imparted by daily recitations from standard text-books, participated in by small sections which pass directly from the class-room to the study of walking cases in the dispensary and to those confined to bed in hospital wards. A great number of instructors are required for this kind of teaching, but the interest of the profession in the work is so great that no difficulty has been experienced in obtaining the co-operation of its most distinguished members. The visiting staff of a dozen or more hospitals are represented upon the faculty, and students are thus taken on daily visits to wards and operating-rooms. The anatomical, pathological, and clinical laboratories are conducted on the same general plan in the belief that the personal experience of each student properly guided in every subject fur-

nishes the most permanent and profitable education.

UNIVERSITY OF MARYLAND, SCHOOL OF MEDICINE, Baltimore.

This School of Medicine ranks fifth in point of age among the medical colleges of the United States, having been founded in 1807. Throughout the ninety-four years of its existence, it has always taken rank as one of the leading medical colleges of the South, and among the most highly honored of the schools of medicine of the country. While from its foundation, the policy of the Faculty of Physic has been one of wise conservatism, it has, at the same time, never been behindhand in the march of educational progress. Thus, it was the first medical school in America (1833) to make dissecting a compulsory part of the curriculum. It was the first to give instruction in dentistry. It was among the very first to provide for adequate clinical teaching by the erection of its own hospital, etc. It is the aim of the present faculty to carry out this same policy established by its predecessors. The new University Hospital, completed 1897, and the establishment and equipment of its lying-in hospital, its laboratories of chemistry, histology, pathology, and bacteriology, put this school of medicine in position to offer to students of medicine and graduates a course of combined didactic, clinical, and laboratory instruction which will compare favorably with that offered by any medical school in the United States.

COLLEGE OF PHYSICIANS AND SURGEONS, Baltimore, Md.

The unusual amount of clinical material at the disposal of the faculty permits of the most thorough training in clinical medicine, surgery, and obstetrics, as well as in the various special branches. Each student in the fourth-year class is required to assume personal charge or a certain number of patients in the various departments of the hospital, and to work in the different rooms in the dispensary. Thoroughly competent directors in charge of the various laboratories, with a full corps of well-trained assistants, insures the student the best possible instruction. While special stress is laid upon laboratory training and practical clinical instruction, the lecture-room work is fully abreast with modern ideas, and many general and special public clinics are held daily. The facili-

ties and equipment are ample; the teaching thorough, efficient and up to date, and the results, as shown by the various State Board examinations, highly satisfactory.

MEDICAL DEPARTMENT OF THE COLUMBIAN UNIVERSITY, Washington, D. C.

The eighty-first session of the Columbian Medical School will begin October 7, 1901, and continue for eight months. The many advantages which the scientific laboratories and libraries of Washington offer to students can be utilized to the best advantage by students of Columbian, as the hours for didactic lectures are so arranged that students can avail themselves of the practical advantages thus offered.

MEDICAL COLLEGE OF ALABAMA, Mobile.

The good standing of the graduates of this institution (which is the Medical Department of the University of Alabama) before the various Medical Examining Boards of the States in which they have located, proves the high standard of this college. Mobile offers ample clinical material, which is made use of daily during the entire course. The rigorous climate of the Northern States during the winter months compel many citizens of those States to winter in the Gulf States; and to the medical student friends of such persons, no college can offer stronger inducements or better advantages, clinical or didactic. The laboratories are provided with the latest modern appliances.

NEW ORLEANS POLYCLINIC.

This is the only distinctive institution in the Southern States intended for bedside teaching of practitioners of medicine. Since it was founded, in 1887, it has each year become better and better prepared to give practitioners who may attend its sessions thoroughly practical bedside courses of instruction. This fact is becoming more and more appreciated, as the constantly growing sizes of the classes will show, to any of whom reference may be made. The clinical advantages of the New Orleans Polyclinic, for either special work or for the purposes of the general practitioner of medicine or surgery, cannot be surpassed by any like institution in the country. For the Southern physician or surgeon especially, one cannot suggest an institution where he could gain more useful experience for his special purposes.

Correspondence.

Collective Investigation of the Influence of the Silver-Nitrate Injections on Phthisis.

To the Members of the Medical Profession:

In 1892, the undersigned began a collective investigation of the action of cold in the treatment of acute pneumonia, and there is reason for believing that this procedure, which resulted in gathering four hundred cases of this disease thus treated, with a death rate not quite five per cent., was an important factor in calling attention to the utility of that treatment, and in introducing it to the profession of this country. That research was based on the conviction that no remedy can be called truly successful until it has passed the exacting crucible of clinical experience, and it is now proposed to apply the same ordeal to the silver-injection treatment of phthisis, which, in a large hospital, dispensary, and private practice, reaching over a period of three years, and during which many thousand injections were administered, has given me greater satisfaction than any other method that I have ever employed. In keeping with the above expressed feeling, a cordial invitation is herewith extended to those members of the profession who have the inclination and opportunity to investigate this method of treating phthisis, and to whom a reprint on the subject, with full information and blanks to report cases, will be cheerfully sent on application.

THOMAS J. MAYS, M. D.

1829 Spruce Street, Philadelphia, Pa., August 15, 1901.

Analyses, Selections, Etc.

The Liver as a Factor in Elimination and in the Production of Nephritis.

Dr. George E. Davis, M. D., of Lawrenceburg, Ky., in the course of an address to the Kentucky Medical Society on "The Physiology of the Liver and the Role it plays in Digestion and Nutrition," made the following remarks:

You may deem it strange that I make another inventory of the functions of the liver, and small wonder, when we remember the triteness of the text. If, however, there is a lack of interest

manifested in paying our respects to so esteemed a friend, our indifference may be attributed not so much to a blunted sense of obligation for services rendered, but rather to our ignorance of the mysterious ways he works his wonders to perform. Digestion, nutrition, and elimination constitute metabolism. Metabolism, therefore, comprises those natural functions and processes whereby living organisms maintain vitality and being, and resist the impressions of time and disease. Thus the dynamics of life, beginning with the cell, are the chemical and physical activities required in the transformation of energy, involved in the processes of digestion, nutrition, elimination, growth, reproduction, and heredity.

The simple cell, as well as the differentiated cell of the higher or complex organism, acting under normal conditions, has the capacity of responding to the presence of food material by appropriating it to its own growth and multiplication, and of oxygen by yielding to disintegration or waste. The primary and inherent function of all life is a constant change, produced by an affinity for such material as by addition constitutes nutrition or growth on the one hand, and, on the other, a similar affinity for oxygen, by which oxydation and disintegration are constantly taking place.

Under these conditions the processes and functions are termed physiological. However, these cells, acting under abnormal circumstances, as the presence of micro-organisms, are capable of responding in an exaggerated manner in protecting themselves individually, or the organism of which they are a component, against the toxic influences of said micro-organisms. This capacity of the cells for increased activity under adverse circumstances is the *vis medicalrix natura*. Under such conditions the processes and functions are termed pathological.

Therefore, if we would discover the secrets of the doctrine of organic evolution and heredity, and understand the functions of the widely differentiated and closely co-ordinated cell collections composing the several organs of the body, we are admonished to study them in the light obtained from the observation of the functions of the simple cell, acting under physiological and pathological conditions.

The single cell is the simplest form of organized life. Its existence is perpetuated by its capacity for selecting and imbibing such material as is fit for its nutrition and growth, and rejecting that which is detrimental. This con-

stitutes cell-metabolism. The human body is an aggregation of these minute organized bodies or cells into a variety of forms or structures, each having some special function. The great structural differentiation attained by the human organism opens up new avenues for invasion by pathogenic agents; however, physiological division of labor has kept pace and provides special functions, not only to protect the organism from toxic influences, but to sustain and nourish it. This capacity of sustenance, of selection and rejection, of assimilation and elimination, constitutes body metabolism.

Therefore, the maintenance of the natural functions of animal life and its vital resistance to toxic agents, resulting either from pathogenic bacteria introduced from without, or from the retention of excrementitious products of tissue disintegration within, depends on the activity and efficiency of metabolism, or the processes involved in digestion, nutrition, and elimination.

The agents essential for normal metabolism in the development and nutrition of the blood and body tissues are wholesome food, pure water, and fresh air, and the proper mechanism of suitable organs not only to elaborate these agents, but to eliminate from the system the waste products evolved in their elaboration. The quality and quantity of the blood depend on the quality and quantity of the food material and air, and on the efficiency of the digestive, respiratory, and eliminative organs. The blood is the vehicle by which the food material, after it has been elaborated, is distributed to all the tissues. When wholesome food and pure air have been supplied, and the digestive and respiratory mechanism has been normal, the blood truly is the life. But, as the blood is also the recipient of the waste products of disintegration, nature has provided special organs for the elimination of said waste products or other harmful agents that may have gained entrance into the circulation. The kidneys are specially constructed for the elimination of the waste products of disintegration from the blood, which, if retained, would poison the blood and, through it, all the tissues; and in this instance the blood becomes the death. And thus, in the blood, we note that life and death tread so close, their paths needs must touch.

The laws of physiology decree that the integrity and vitality of the body and its different organs, in the performance of their several func-

tions, are dependent on proper blood-supply, and in turn the blood supply is dependent on the proper functions of the organs involved in metabolism, and though elimination is the last step in metabolism, it is not the least important.

I have purposely dwelt at some length on the different steps in metabolism in order to emphasize their mutual interdependence and the intimate relation between the digestive and eliminative organs. Proper elimination is dependent on proper nutrition, and proper nutrition is dependent on proper digestion. Anything that disturbs digestion will disturb nutrition, which, in turn, will pervert elimination; and whatever aids digestion favors nutrition and facilitates elimination. Digestion, nutrition, and elimination constitute a cycle in physiology, and since digestion is the first step in this cycle, it is most liable to primary derangements, and usually is the origin of faulty metabolism around the whole circle; though, on account of the intimate relation of these processes, the converse may occasionally prove true. The derangements of digestion explain the genesis of most derangements of elimination, both of an acute and of a chronic character, and affords a key to the study of their symptoms and treatment. The liver is the largest and most complex gland of our complex body, and since it is especially endowed with important metabolic functions, I seek to establish its intimate relation as connecting link between digestion and elimination.

In my Maysville paper, after reviewing the physiology of the liver, I made the declaration "that the liver is the most important digestive organ of the body," basing the claim, first, on its biliary function in preparing fats for absorption and digestion; and, again, while the stomach, pancreas, and intestines perform the primary digestion of proteids and carbohydrates, the liver performs the secondary digestion and elaboration of these materials; truly a most important function, for it has been shown by many reliable investigations that the normal products of primary digestion act as toxins, or foreign bodies, when introduced directly into the general circulation. With equal plausibility, however, I could have made the declaration that the liver, if not directly through the bile, is indirectly the most important eliminative organ in the body, if we are to accept the current teaching of the physiology of the liver in its capacity of transforming the products of disintegration and com-

pleting the retrograde change of the substances from non-diffusible colloids into crystalloid, dialyzable materials before they pass into the kidneys for final excretion. Many investigations—physiological and pathological—make it clear that the hepatic and renal functions are intimately connected, the chief object of the kidneys being to excrete certain products secreted by the liver. Urea is thus formed by the liver, which is returned to the blood to be finally eliminated by the kidneys. And since urea represents the greater portion of the nitrogen taken into the body in the way of food, therefore an analysis of the urine should be a good test of the hepatic condition. Urea, then, in a measure, constitutes a fair expression of the retrograde change in nitrogenous tissue metabolism and to that degree possesses definite clinical value.

Renal insufficiency, therefore, proclaims preceding hepatic insufficiency—disturbed nutrition and auto-intoxication intervening. Renal inadequacy, functional and organic, has its origin most frequently, if not invariably, in primary hepatic inadequacy in elaborating the products of both constructive and destructive metabolism. The kidneys first suffer functional disturbance, because said imperfect products are brought to them in a form chemically unable to pass through them, organic change supervening as a result of the long-continued irritation occasioned by these incompleting products of metabolism. Especially is this liable to happen to those who indulge in over-feeding and lack of exercise, or overwork, mental and physical, producing excessive somatic change, and lack of fresh air, resulting in imperfect oxydation, which further embarrasses the hepatic functions. Thus we can easily conceive how the blood, overloaded with food products imperfectly elaborated for nutrition and products of retrograde change, some of which are not completely reduced for elimination, will act as an irritant to the kidneys, finally producing nephritis with albuminuria—thus interfering with elimination and later resulting in auto-intoxication.

And need the hepatic origin of renal insufficiency and degeneration hardly tax our credulity when we remember the intimate relation of the liver through its nerve supply, sympathetic and spinal, not only with the digestive and eliminative organs, but also with the vital processes of respiration and circulation? Moreover, in view of said intimate relation of the hepatic functions with both the digestive and eliminative or-

gans, we more nearly appreciate the prime importance of the liver in metabolism, and understand how the pathology of Bright's disease, with albuminuria, may be traced to hepatic derangements which cause degeneration as a consequence of the long-continued elimination of products of faulty digestion, resulting from derangement of the nutritive and disintegrative processes in which the liver plays so important a part; and in many instances, if not all, the liver seems primarily at fault. Again, diabetes mellitus furnishes positive clinical evidence of faulty elimination of hepatic origin, and I need hardly remind you that saccharine urine is not due to any morbid condition of the kidneys. What I seek to emphasize is that sugar in the urine indicates functional hepatic derangement. However, chronic degeneration of the kidneys, with albuminuria, may prove a sequel to diabetes as a consequence of the constant irritation of the saccharine urine.

The pathology of faulty renal elimination has its etiology, then, most often in primary functional derangements of the liver interfering with digestion, nutrition, and disintegration, but the deleterious effects of retained products of imperfect metabolism are manifested not only in derangements of the kidneys, but in derangements of the nervous system, in derangements of the organs of circulation and respiration, and in abnormal conditions of the skin, etc. Some of the remote effects of the functional derangements of the liver may be noted in impairment of the voice, as witness the recent retirement of Calve from the stage, on account of her liver, whose functional disturbance has jarred the tones of a voice instinct with melody divine—the world and art the losers.

The indications for treatment in renal insufficiency, then, are to aid digestion and nutrition and promote disintegration. A careful regulation of the diet and free supply of oxygen by fresh air are of the first importance. The former corrects digestion and nutrition, and the latter promotes disintegration. After these come cholagogues and alteratives, which favor digestion and promote disintegration. Often the best diuretic, aside from water, is the drug that touches the liver and arouses it to the performance of both its digestive and disintegrative functions.

The liver, primarily by its digestive functions in completing and perfecting the elaboration of the food materials for the development and nu-

trition of the blood and tissues, and secondly, by transforming the waste products of disintegration into soluble or dialyable forms for elimination, is the beginning and the end, the alpha and omega, in the cycle of metabolism—constructive and destructive—embracing digestion, nutrition and elimination.

With the presentation of the arguments I have briefly stated, I submit the plausibility of my claims—"that the liver is the most important digestive organ of the body," and, "if not directly through the bile, indirectly through urea is the most important eliminative organ of the body."

Antipyrin and Quinine in Whooping-Cough.

F. Robson, G. H. M. S., of Busumthnugger, communicates the following to the *Indian Med. Record*, July 24, 1901:

Some months ago I learned, in one of the numbers of the *Indian Medical Record*, the value of antipyrin and quinine in the treatment of that troublesome malady of children—"whooping-cough."

I was at that time attached to the out-patients' department of the Afzul Jung Hospital (the largest institution of its kind in Hyderabad), and I resolved to try the remedy on the first opportunity that presented itself. I had not long to wait, when a severe epidemic of whooping-cough broke out, and patients were coming in in numbers. With due permission of the senior medical officer in charge, Dr. Nawab Intezam Jung Bahadur, I commenced giving the drugs in varying doses, according to the ages of the patients, three times a day, and marvellous was the effect produced. Within three or four days the parents of the little patients assured me that there was marked relief noticed, and from the eighth to the twelfth day of the commencement of the treatment, there was a perfect cure. I kept notes of no less than 25 cases, all of whom were relieved within the period mentioned.

Acetic Acid as an Antidote to Carbolic Acid.

Hospital Assistant Dhurni Dhur, Dispensary Dig, Bharatpur State, Rajputana, communicates the following note to *The Indian Lancet*, July 22, 1901:

Some time ago when I was washing a wound with carbolic lotion (1 in 40) I had often and often to place my hands in the basin. After a few minutes I felt a peculiar sensation in the

whole of my right arm (from fingers up to shoulder joint). I searched for the cause and found a little scratch by the side of a finger nail. Then I thought that acid acetic would do some good, so I applied a piece of lint soaked in acid acetic dil. (B. P.) and dipped the finger in the solution. In nearly 20 minutes there was no trouble of any kind. Afterwards I painted 4 layers of strong carbolic acid on the back of my hand and applied a piece of cotton wool soaked in acid acetic dil. to see the result. In 3 minutes the burning pain disappeared, while in 45 minutes the white mark also disappeared, leaving only a little redness behind.

Then I painted only one layer of the acid on my forearm and proceeded to remove it by the same means. In 15 minutes there was no mark remaining. It strikes me, therefore, that it might be of use internally also when taken by mistake, and I beg my brethren to try it internally when they have a chance to do so.

The Folk Lore of Blood Amongst the Jews.

La France Medicale publishes an interesting article from *Journal de Med. et de Chir. Practiques*, February, 1901, upon superstitious connected with blood, the most curious of which are found amongst the Jews.

Jews naturally have a distaste for blood, and their religion forbids its use. The blood of the sacrificial animals was carried away from the altar by an underground channel as something impure, and at the time of the second temple it was collected in the valley of Kedron, where the drain opened, and was sold to the gardeners for manure.

The Jews therefore rarely employed blood either in medicine or magic, and talmudic literature only affords the following examples of its use:

The blood of a grouse was used to anoint the eyes in cases of eye-diseases. For the cure of unilateral headache a grouse was taken and was struck with a piece of silver upon the side of the head in which the patient felt pain in such a manner as to draw blood, though care was to be taken that the blood did not run into the eye.

The bird was then nailed against the door in such a manner that the patient rubbed against it every time he entered and left the house.

Jaundice was cured by allowing the blood of a young ass to drip on a bald place made in the middle of the patient's scalp, but it was again

necessary to be careful that the blood did not flow into the eye.

Birds' blood was known to be useful in removing stains in flax. Human blood is never mentioned except in the following passage of the treatise on The Sabbath: "Some say that the menstrual blood ought to be thrown to the cats, others that it should not be kept, because it weakens." Rachi says in his commentary that "Whoever gives this kind of blood to a cat falls ill."

The Babylonian Jews, during the middle age, used to circumcise over a vessel of water, in which the young people afterwards washed, saying: "This is the blood of the everlasting covenant made between God and our father Abraham."

The case of the dying Pope Innocent VIII, whom a Jewish practitioner recommended to be transfused with the blood of three little boys, owes the treatment less to the Jewish element in the doctor than to the ideas prevalent at the time he lived.

It is still held amongst the most ignorant Jews that the blood of a patient is a good remedy to stop his bleeding. Blood from a circumcision or from the nose is boiled therefore into a hard mass, and is then sprinkled as a powder over the wound, or is used as a snuff for epistaxis. In the case of epistaxis, however, it is necessary to write on the nose or forehead with fluid blood, "*Sib b'tib j'min b'dam zeto*," to make the charm effective.

The blood of a fox or wolf applied externally is a cure for the stone. The blood of a ram is good against stomach-ache, and the blood of a goat against scrofula and gout. A wolf's blood is used for deafness, and that of a pigeon for diseases of the eye. The dried blood of a crow, the fresh blood of a hare, and the bile of a hare are good against piles.

In cases of severe or irregular loss of blood a woman should knead a little blood into the bread she makes, some of which should be eaten by a pig. Menstrual blood is also used as a cure for fever. The patient who is attacked is clothed in a garment stained with blood which has been dried before the fire at the end of a long pole.

To become invisible water melons should be dipped in menstrual blood, and should afterwards be kept in a glass house. Any one who carries this fruit when it is ripe will certainly be invisible.

Gout is cured by the menstrual blood of a primipara.—*Indian Lancet*, July 22, 1901.

Book Notices.

Atlas and Epitome of the Nervous System and Its Diseases. By Professor DR. CHR. JAKOB, of Erlangen. From the *Second Revised German Edition*. Edited by EDWARD D. FISHER, M. D., Professor of Diseases of the Nervous System, University and Bellevue Medical College, New York. With 83 plates and copious text. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$3.50 net.

This excellent little volume is one of a series of medical hand atlases published by Messrs. W. B. Saunders & Co. That it is one of the finest little books of its kind may well be imagined by those who were fortunate enough to see the first edition. The plates have been altered wherever it was thought such changes would be beneficial, and new ones added. The number of pathologic specimens has also been increased. The text, with few exceptions, remains as it was formerly, since, for the purpose of the atlas, many alterations seemed unnecessary. The matter is divided into Anatomy, Pathology, and Description of Diseases of the Nervous System. Each division is illustrated profusely. We are quite sure the physician who purchases a complete series of these atlases will feel that his money is well spent.

Sexual Hygiene. Compiled from Books, Articles, and Documents—Many Not Heretofore Published. By the EDITORIAL STAFF OF THE ALKALOIDAL CLINIC. Chicago: The Clinic Publishing Co., Ravenswood Station. 1901. Cloth. 12mo. Pp., 269. Price, \$1, postpaid, for cash.

The preface tells us that "this book is written for doctors, and for no one else." It seems to us that this calls for a too limited circulation of a book that, if judiciously placed in the hands of some of the married laity, would do good. While it treats of a matter regarding which there is a great deal of prurience, it yet deals with the subject in a higher sense, and gives information of helpful value to many whose modesty will ever prevent them from making full or satisfactory inquiry of the doctor. Unlike such works as Suetonius and Kraft-Ebing that are smutty and debasing, this book should be looked upon as a repository of secrets, to be brought to light only when necessity justifies—never to satisfy curiosity. After a full synopsis of the address of Dr. Charles S. Bacon before the Physicians' Club on the effects of malformation and derangements in the genital organs

of woman on her sexual appetite, there are chapters—all full of good, sensible reading—on religion and love, sexual frauds and excess, the effects of coitus during pregnancy and lactation, sex problems in education, and legal and educational aspects. The “editorial resume” is chiefly of value to the doctor, teaching him points of diagnosis of sexual inability, and how to treat the conditions. Then woman is considered sexually. Imperfect development of the female sexual organ, affections of the male sexual organs causing impotence, continence, masturbation, incomplete or delayed intercourse, frequency of intercourse, prevention of conception, married courtship, posture, artificial fecundation, management of pregnancy, diet to influence labor, maternal impressions, determination of sex, restriction of marriage, and sexuality must not dominate, are the successive subjects treated of in this book.

Diagnostics of Internal Medicine. By GLENTWORTH REEVE BUTLER, A. M., M. D., Chief of Second Medical Division, Methodist Episcopal Hospital, etc. *With Five Colored Plates and 246 Illustrations and Charts in the Text.* New York: D. Appleton & Co., 1901. Cloth. 8vo. Pp. 1,060.

The title page tells that this is “A Clinical Treatise Upon the Recognized Principles of Medical Diagnosis, Prepared for the Use of Students and Practitioners of Medicine.” Of the numerous books bearing upon this subject, according to our way of thinking, this is the best of them all; that is, it more nearly meets the want of the practitioner than any of them. It is divided into two parts. *Part I* is taken up with a study of symptoms and their indications; *Part II* with a study of diseases and their characteristics. We could not give a better description of this “Clinical Treatise” than by quoting from the preface: “*Part I—The Evidences of Disease*—comprises: (1) A brief consideration of the clinical anatomy and physiology of certain organs and systems—practical points of everyday utility. (2) A description of the approved methods of examination. It has been well said by a capable reviewer that “the basis of the art of diagnosis is a thorough knowledge of clinical methods.” (3) A careful consideration of the many signs and symptoms encountered in the practice of internal medicine. (4) A statement of the diagnostic significance of each sign and symptom—*i. e.*, the disease or diseases, the presence of which is more or less strongly sug-

gested by the finding of a given sign or symptom. While a prominent symptom seldom leads directly to the discovery of a disease, yet it is of importance to know the diagnostic value of individual symptoms. *Part II—Diagnosis, Direct and Differential*—contains: (1) Succinct descriptions of recognized diseases and their symptoms, with (2) special reference to the diagnosis, direct and differential, of each disease. The qualifying terms applied to diagnosis are scientifically indefensible, but clinically useful.” The two Parts are, indeed, complementary.

Favorite Prescriptions of Distinguished Practitioners, with Notes on Treatment. Edited by B. W. PALMER, A. M., M. D. *Seventh Edition.* New York: E. B. Treat & Co., 241-243 West Twenty-third street. 1901. Small 8vo. Pp., 248. Cloth, \$2.

We confess a very great fondness for this book. It is the ready reference book in the hour of our need, from which some prescription or suggestion can be gotten for the individual case. It is compiled from the published writings or unpublished records of the leaders of medical practice in this country especially. No pretence of originality is made by the Editor in the compilation. The popularity of this work is due to its very practical nature. As compared with former editions, we find that many pages of new prescriptions of undoubted value have been added. It is a book that will soon repay for itself. At the end of each section of the book several blank pages are introduced, on which memoranda of other prescriptions may be added by the owner. This book is good alike for the young and old practitioner.

Operative Surgery. By JOSEPH D. BRYANT, M. D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Med. College, etc. *Volume II. Operations on the Mouth, Nose, and Oesophagus, the Viscera Connected with the Peritoneum, the Thorax and Neck, Scrotum and Penis, and Miscellaneous Operations.* This Volume Contains 827 Illustrations, 40 of which are Colored. New York: L. Appleton & Co. 1901. Large 8vo. Pp., 738. Cloth.

The first volume of this great work (which treated of “General Principles, Anesthetics, Antiseptics, Control of Hæmorrhage, Treatment of Operation Wounds, Ligature of Arteries, Operations on Veins, Capillaries, Nervous System, Tendons, Ligaments, Fæcie, Muscles, Bursæ, and Bones, Amputations, Deformities,

Plastic Surgery) received our notice over a year ago. This *Second Volume* has been only recently issued. As the title indicates, little is said in discussion of causes, symptomatology, etc. But presupposing that the diagnosis is made and the morbid condition known, the author goes immediately into details as to what should be done surgically for relief or repair. The understanding of the text is helped by a profusion of illustrations—illustrating successive stages of the operations wherever necessary. In short, this work comes as near taking the actual place of a surgical clinic as a book can possibly do. During the various stages of operations involving any danger, precautions are brought out conspicuously—thus keeping the operator who follows this book continuously on his guard as to avertible risks. Too high commendation cannot be passed upon the style in which the book is issued. Everything is done in the highest style of art. The paper is well selected to receive the prints of type and chromolithographs and other cuts. The Index seems to be perfect. The surgeon who remains without these two volumes of Bryant's *Operative Surgery*—especially a beginner in surgery—deprives himself of one of the valuable helps that he could desire.

Uterine Fibromata—Their Pathology, Diagnosis and Treatment. By E. STANMORE BISHOP, F. R. C. S., Eng. President Manchester Clinical Society, etc. *With 49 Illustrations.* Philadelphia: P. Blakiston's Son & Co. 1901. Cloth. 8vo. Pp., 324. \$3.50.

This is a book full of interest to every doctor, but of special interest to gynecologists and abdominal surgeons. While little that is new is added to a knowledge of the causes of these growths in the uterine walls, or of their natural termination, the history of uterine fibromata is so well written up and illustrated in their varying phases that the medical reader of the book feels that he has received a fresh supply of information regarding them. That they are very frequent is shown by the estimate of different observers—that they occur in the proportion of at least one woman of every twenty who reaches her climacteric. That they do *not appear* to be so frequent is due to the fact that oftentimes even relatively large size fibromata do not cause discomfort of any appreciable kind. Sometimes these fibromata spontaneously disappear by causes not well understood. The technique of operations for their removal is given with

great detail—generally in the language of the authors who devised them. Among the concluding pages are some devoted to the “after effects of operation.” It is important to remember that carcinomas and other malignant troubles often begin in the so-called benign fibromas of the uterus. The 49 illustrations, as is the general “get-up” of the book, all go to make a handsome and useful volume. The index is very complete.

Hand-Book of Materia Medica, Pharmacy and Therapeutics. By SAMUEL O. L. POTTER, A. M., M. D., M. R. C. P., London, formerly professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco, etc. *Eighth Edition. Revised and Enlarged.* Philadelphia: P. Blakiston's Son & Co. 1901. Large 8vo. Pp. 950. Cloth, \$5, net; Sheep, \$6 net.

This is a great work, of constant utility to the doctor, whether specialist or general practitioner. It includes a statement of “the physiological action of drugs, the special therapeutics of disease, official and practical pharmacy, and minute directions for prescription writing.” Pasted on the inside covers we find a table of “equivalents of weights and measures, customary and metric,” and “a table of prescription doses and quantities.” On opening the book, after a few pages of introduction, will be found another few pages on the “Constituents of organic drugs,” and then some 37 pages of “classification of medicines.” Short sections are given to the modes of administration of medicines, and to dosage. About 450 pages are taken up with *Materia Medica* in detail and Therapeutics. Over 70 pages are devoted to Pharmacy and Prescription Writing. Part III devotes 280 pages to Special Therapeutics. Among the lot of useful matter in the *appendix* we find a list of Patent Medicines, with their supposed formulae; also a table of “Differential Diagnosis.” Many other tables of less importance are included in the work. The druggist or pharmaceutical student will find this *hand-book* a most serviceable work—either for reference or for study. The work is well printed, and is unusually free from important typographical errors for a book so large—a short errata correcting the errors. It is a work that should be kept “handy” on the doctor's table, as he will have frequent occasion to refer to its pages of facts.

Saunders' Question-Compend—Essentials of the Diseases of Children. By WILLIAM M. POWELL, M. D. *Third*

Edition. Thoroughly Revised by ALFRED HAND, Jr., M. D., Dispensary Physician and Pathologist to the Children's Hospital, Philadelphia. 12mo. 259 pages. Philadelphia and London: W. B. Saunders & Co. Price, \$1, net.

"In this revised edition of No. 15 of *Saunders' Question Compend* numerous additions and changes have been made in the book so that it continues to represent the present state of pediatrics. The book aims to furnish material with which students may lay the foundation for the successful practice of medicine among children. The section on Infectious Diseases has been rewritten, as well as many of the paragraphs on pathology. A number of new chapters have been added, among others, one on Infant Feeding." The popularity of *Saunders' Question Compend* is shown by the fact that since the issue of the first volume, over 200,000 copies have been sold. While of value to the general practitioner, they are of greater value as self-helps to the medical college student.

Principles of Surgery. By N. SENN, M. D., Ph. D., LL. D., Professor of Surgery in Rush Medical College in Affiliation with the University of Chicago; Professorial Lecturer on Military Surgery in the University of Chicago; Surgeon-General of Illinois; Late Lieutenant-Colonel of United States Volunteers, and Chief of the Operating Staff with the Army in the Field during the Spanish-American War, etc. *Third Edition. Thoroughly Revised, with 230 Wood Engravings, Half-Tones, and Colored Illustrations.* Royal Octavo. Pp., xiv-700. Extra Cloth, \$4.50, net; Sheep or Half-Russia, \$5.50, net, delivered. Philadelphia: F. A. Davis Company, Publishers, 1914-16 Cherry street.

The first edition of this work was issued 1890, now a *third* is published. The work is written for the student and practitioner. It keeps in constant view the differences between the cellular processes, as we observe them in regeneration and inflammation, and connects "the modern science of bacteriology more intimately with the etiology and pathology of surgical affections" than was formerly done by most authors. Two new chapters have been introduced in this edition—one on *Degeneration*, and the other on *Blastomycetic Dermatitis*—"which should be included in a text-book on the *Principles of Surgery*." A number of original illustrations have also been added in this third edition. A number of revisions of various parts of the text have been noted. Limiting itself to the *principles* of surgery, this will serve as an excellent text-book for colleges and students of medicine. The

purchaser of this book may feel assured that he is getting a standard work, for no surgical authority is more eminent in this country than Dr. Senn.

Memoranda on Poisons. By THOMAS HAWKES TANNER, A. M., M. D., F. L. S. *Eighth Revised Edition.* By HENRY LEFFMANN, A. M., M. D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, etc. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901. Cloth, 16mo. Pp., 176. Price, 75 cents.

This little book is perhaps one of the best known, as it is one of the most useful of books for the doctor. Indeed, wherever poisons are dealt with, such a book as this should be in ready reach. The *memoranda* form an abridgement of the English work by Dr. Tanner, which contains much of medical legal jurisprudence of value in English courts. This abridgement is taken up mostly with a statement of the poisons, their physiologic and toxic effects, diagnosis, prognosis, and special attention is always given to matters of treatment, including antidotes, etc.

System of Physiologic Therapeutics. A Practical Exposition of the Methods Other Than Drug-Giving, Useful in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A. M., M. D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College, etc. *Volumes I and II. Electro-Therapy.* By GEORGE W. JACOBY, M. D., Consulting Neurologist to the German Hospital, New York City, etc. *In Two Books—Book I, Electrophysics; Apparatus Required for the Therapeutic and Diagnostic Use of Electricity. Illustrated. Book II, Diagnosis; Therapeutics. Illustrated.* Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901. 8vo. Pages in Book I, 242; in Book II, 323. Cloth. Price, Eleven Volumes, \$22, net.

These two books constitute Volumes I and II of a system of eleven volumes, which must prove an invaluable addition to any medical library. Forthcoming volumes are to treat of Climatology and Health Resorts, including Mineral Springs (to which subject two volumes will also be devoted); Prophylaxis, Personal Hygiene, Nursing and Care of the Sick; Dietotherapy—Food in Health and Disease; Mechanotherapy—Physical Exercise; Rest, Mental Therapeutics, Suggestion; Hydrotherapy, Thermotherapy, Phototherapy, Balneology; Pneumotherapy, and Inhalation Methods; Serotherapy, Organotherapy, Blood Letting, etc.—Principles of Therapeutics—Indexes and Digest. There

is no similar set of books in the English language. The subjects, while of vast importance to the physician, have to a large extent been neglected by writers of the day. Authors have been selected with reference to their comprehension of, and experience with the subjects named. The editor, when necessary, has rearranged the manuscripts, supplying deficiencies and cross references. Illustrations are used wherever needed. The indexes are to be complete and carefully prepared by a medical expert for each volume, while a general index is to be added to the eleventh volume. A very complete *Digest* of the contents of each volume will also be included in Volume XI, arranged alphabetically by diseases, according to treatment indicated. Price of eleven volumes in cloth binding, \$22, payable as each volume is delivered; orders will be received for the whole set only.

As to the two volumes on Electrotherapy now on our table, one is reminded by their perusal of the necessity for specialists in this line. It is simply impossible for the general practitioner, who has much general work, to do more than dabble in electricity as a therapeutic agent, and yet there is none who does not believe in its beneficial influences, when rightly used. If one is disposed to give the subject special attention, the two volumes now presented would prove of incalculable service to him. Extended consideration is given to the methods by which electric currents, now-a-days supplied to modern houses for light and power, may be utilized. The books are practical in their teaching. Mathematical demonstrations and technical explanations, while not entirely neglected, are simplified and reduced to the minimum. In fact, these volumes present the subject of electrotherapeutics in the plainest way of understanding of any of the text-books. Drs. Edward Jackson, of Denver; Wm. Scheppegegrell, of New Orleans; J. Chalmers Da Costa, of Philadelphia; Franklin H. Martin, of Chicago, and A. H. Olmann-Dumesnil, of St. Louis, have contributed special articles.

Treatise on Orthopedic Surgery. By ROYAL WHITMAN, M. D., Instructor in Orthopedic Surgery, and Chief of the Orthopedic Department of the Vanderbilt Clinic in the College of Physicians and Surgeons of Columbia University, etc. *Illustrated with 447 Engravings.* Lea Brothers & Co., Philadelphia and New York. 1901. 8vo. Pp. 650. Cloth. \$5.50, net.

This is a new aspirant for professional favor. It is the special purpose of this treatise to em-

phasize the treatment aspect of orthopædic surgery, which, in late years, has become "more direct, more simple, and more effective." It has been the author's purpose to make clear to the general practitioner, who often has the opportunity to recognize the earliest signs of disability or orthopædic disease, when its progress may be checked by timely treatment. As far as possible, the easiest of the best methods of examination in order to make or verify diagnosis, have been brought out. It is a fine book for either the practitioner or the student. Its arrangement is systematic, descriptions are good, symptomatic and diagnostic points are made plain by illustrations as far as possible, and the details of treatment are claimed to be "always those that have been tested by personal experience." The publishers have done their part nicely. A very complete double column index of twenty pages helps very much in ready reference to subjects.

Saunders' Medical Hand-Atlas.—Atlas and Epitome of Ophthalmoscopy and Ophthalmoscopic Diagnosis. By Prof. Dr. O. HAAB, Director of the Eye Clinic in Zurich. *From the Third Revised and Enlarged German Edition.* Edited by GEORGE E. DE SCHWEINITZ, Professor of Ophthalmology, Jefferson Medical College, Philadelphia. With 152 colored lithographic illustrations and 85 pages of text. Philadelphia and London: W. B. Saunders & Co. 1901. Price, \$3, net.

This work is of equal interest to the beginner in the study of ophthalmoscopic diagnosis and the expert. The text is taken up with five pages of introduction. Then follows a description of the ophthalmoscope. Following this is a description of the direct method of examination of the eye, or "the method with the erect image." Next comes the details of "examination by the indirect method," or illuminating the eye-ground, which produces an inverted image. About fourteen pages are given to the "shadow-test" or skiasecopy. The method of conducting an ophthalmoscopic examination is well described. Stress is laid upon the importance of a thorough acquaintance with the appearances of the normal eye-ground as seen with the ophthalmoscope; and the text concludes with a careful description of the pulse-phenomena seen in the eye-ground. A number of illustrations are used in the text part of the *Atlas* in order to make more plain the written explanations. The rest of the book is taken with full-page chromo-lithographs, with a full facing page description of the lithographic illustrations of the various

phases of diseased eyes represented in the colored photographs. We cannot see how such an *Atlas* could be better gotten up.

Annual and Analytical Cyclopaedia of Practical Medicine.

By CHARLES DE M. SAJOUS, M. D., and ONE HUNDRED ASSOCIATE EDITORS, Assisted by *Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Volume VI.* Philadelphia, New York, Chicago: F. A. Davis Company, Publishers. 1901. Large 8vo. Pp., 1,042. Cloth.

The value of such a *Cyclopaedia* as this is self-evident. The present volume completes the first series. The important quality of this series of six volumes consists in the description of all the general diseases usually described in text-books, "and, further, in presenting whatever progressive features the past decade has developed." "Surgical subjects have been given space corresponding with their practical importance." The various specialties have received due attention—"the aim being to furnish the general practitioner with a clear outline of the entire field of practical medicine." In short, this *Cyclopaedia* contains considerably more matter than was promised in the original announcement of the work and that without extra expense to the purchaser. The *general index* to the six volumes occupies about 110 double column pages, is very complete and almost unique. Wherever a word, in its alphabetical order, represents a general subject, it is printed in small capitals, and then follows volume and page references. Sub-subjects are likewise alphabetically arranged with direct reference as to the general subject to which the references relate.

Saunders' Medical Hand-Atlas.—*Atlas and Epitome of Labor and Operative Obstetrics.* By Dr. O. SHAEFFER, of Heidelberg. From the *Fifth Revised German Edition.* Edited by J. CLIFTON EDGAR, M. D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 14 lithographic plates, in colors, and 139 other illustrations. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$2. net.

This issue of *Saunders' Medical Hand Atlases* is of great interest to every doctor, whether professional obstetrician or not, who may be called to a case of labor. To the young doctor the pictures with the descriptive text serves the part of a well observed clinic, while to the older doctor a review of its pages from time to time keeps him reminded of what to do under unusual

circumstances. "As a guide in the perusal of text-books, or as a volume of ready reference, or as a help to a proper understanding of lectures on obstetric procedures," this book will prove invaluable. The text is very plain and thoroughly descriptive. No theory is indulged in, but practical points are well stated and impressed. The work is cheap, and should be in the library of all practitioners—especially country doctors, who have no opportunity to secure consultations or professional help just when needed.

Editorial.

Purification of Drinking Water—Its Healthfulness and Cost.

The *Scientific American*, March 24, 1900, described the recently completed Albany (N. Y.) filtration plant. The method of treatment adopted at Albany is that of slow filtration through sand. The water is raised eighteen feet by pumps into a large settling basin, from which it passes to eight filter beds, consisting of various superposed layers, ranging from gravel of about the size of a base-ball at the bottom to fine sand at the top—the top layer of sand being about four feet in depth, and the total depth of the sand and gravel being five feet two inches. The water is led in over this prepared bed to a depth of four feet, and is allowed to pass downward through the gravel and sand to a system of under drains, at the rate of about four and a half inches an hour—the yield per acre of filter-bed being about 3,000,000 gallons in every twenty-four hours. From the bottom of the filter beds the water is drawn off to a central pumping station, from which it is distributed throughout the city. The first purification takes place in the large settling basin, where the heaviest suspended impurities are deposited. In passing down through the filter-beds, the silt and bacteria are deposited in the top layer of sand, and the greater part of it at the top of the bed. So perfect is this filtration at the slow rate at which the water passes through, that the finest particles and most of the bacteria are strained out *at the surface*, and not carried down into the bed of sand. Periodically the top layer of sand containing the silt and the bacteria is scraped off, cleansed in special washing machines, and redistributed over the bed.

In the issue of the *Scientific American* for July 27, 1901, we find the following very striking summary of results:

It is justly claimed that the truest test of efficiency of a system of filtration is its effect upon the public health of the city which uses it, as shown in the lowering of the death rate due to certain well-known water-distributed diseases. The engineer of the Albany filtration works, Mr. George I. Bailey, has recently been able to present accurately-compiled figures of the results already obtained. Although there were plenty of records of a kind on this subject, there were but few that gave comprehensive details.

Now, comparing the average number of deaths per year in Albany for the year 1900 with that of previous years, it is shown in the report of the operation of the filtration plant, that, whereas the average for the previous decade had been 2,186 per year, the number of deaths for the year 1900, during which time the plant was in operation, was only 1,742—a decrease of 444 deaths, or over 20 per cent. Special significance is given to these figures by the fact that, before this year, the number of deaths from all causes throughout the State of New York exceeded the mortality of the year 1899 by 6,647, and exceeded the average for the past five years by 8,000. Moreover, typhoid fever, a water-borne disease, was unusually prevalent throughout the State of New York in the autumn, causing 1,948 deaths, or 350 above the average. In view of these facts, which are stated in the *Monthly Bulletin* for December, issued by the State Board of Health of New York, the reduction in the death rate of Albany from 2,186 to 1,742, must be considered as a decided tribute to the efficiency of sand filtration. Judged by the typhoid standard, the Albany plant has proved itself a great and decided success. The average yearly deaths from typhoid fever during the years had been 84, whereas the number of deaths during 1900 was only 39—14 of which were unmistakably alien or imported cases.

The efficiency of a filter is judged by counting the bacteria in the raw water and those remaining in the water after filtration, and thus obtaining the percentage of removal. In a table of results for the sixteen months from September, 1899, to December, 1900, showing month by month the work accomplished, the lowest percentage is 97.6 in September, 1899, and the highest, 99.6 in April, 1900—the average per-

centage of removal for the whole sixteen months being over 99 per cent.

The report shows that the cost of filtering at Albany, per million gallons is \$1.66, while the total cost of the whole plant, including the care of the filter beds, care of the grounds, pumping the water from the Hindson river, and the laboratory expenses, was \$4.52 per million gallons.

The facts given bear their own comment. A large number of cities and towns are dependent for their water supply upon the rivers or creeks that flow near by. It so happens that James river, which supplies the reservoirs of Richmond, Lynnhburg, etc., has been unusually muddy for the past four or five months—unightly and obnoxious as drinking water for that length of time, and, indeed, at times unfit for bathing purposes. During this muddier condition of the reservoir water, there has been in each of the cities named a marked increase of such diseases as typhoid fever. We hear the same reports from other cities of the Atlantic slope dependent for drinking water upon the rivers or other streams that flow near by them.

Now, when we take into consideration the value of the filtration method, as adopted by Albany in giving its citizens a clearer and a purer water, and in decreasing the annual death rate, and when the relative cost is shown to be small, it is high time that the town and city authorities of other cities than Albany were adopting some like measures to purify the drinking water for their citizens.

In this connection, it is worthy of remark, so far as Richmond is concerned, that where the people use water for drinking purposes only from certain of the springs in the neighborhood, such as Fonticello, Roeky Run, etc., typhoid fever has not developed. Such springs are carefully guarded from surface-drainage, and supply clear, well-filtered, palatable water.

New Orleans Polyclinic.

Fifteenth annual session opens November 4, 1901. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work.

For further information, address Dr. Isadore Dyer, Secretary, New Orleans Polyclinic, Post-office Box 797, New Orleans, La.

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Original Communications.

SOME OBSERVATIONS MADE IN HANDLING RECENT EPIDEMICS OF SMALL-POX.

By J. W. PRESTON, M. D., Keystone, W. Va.,
Health Officer of McDowell County, West Virginia.

I believe I am correct in the opinion that so infrequent had been the epidemics of small-pox previous to the past year or so that the majority of general practitioners had drifted into the idea that it was destined to be a disease of scientific interest only, and, like cholera and typhus fever, there was scant probability of meeting it in hand-to-hand encounter; and further, that the little time devoted to its consideration by teachers of medical subjects has been in accord with this feeling. As a result, one cannot wonder that with the picture of a most loathsome and deadly disease but vaguely fixed in the mind, there has been so much discussion and disputing regarding the mild epidemics, which, like thieves in the night, have now stolen in upon us.

Mild though it is, it is alarming, for almost every State in the Union, and in some almost every community, has felt the effects of its ravages, both in the suffering of the individuals afflicted and in the annoyance and expense incident to quarantines. That the disease is on the increase, any one who has consulted the statistics must admit, and that these conditions have been sadly augmented by differences of opinion among the rank and file of physicians, is a fact which reflects to our discredit.

In so far as I am aware, there is now no further question among recognized authorities as to the nature of these epidemics, and while, as a rule, the phenomena have been much modified, we, as general practitioners, must concede that we have no right to rob the disease of its name and identity so long as we allow scarlet fever,

diphtheria, and yellow fever, in their different epidemics, to vary their rates of mortality from practically nothing to that shown by small-pox in its most deadly form. I believe a free and frank discussion among those who happily see less of the disease will effect a better understanding of the milder forms as we now have it, and serve to check many an epidemic in its incipiency; hence this paper.

Situated as we are in the centre of the Pocahontas coal fields, whose population is made up largely of laborers who are constantly shifting back and forth among the coal mines and lumbering establishments of the three adjoining States, as well as other sections of our own, it may not be surprising when I state that within less than the two years just past we have had the disease imported, being clearly traceable to sources outside of our county, seventeen times, besides other cases coming in whose origin could not be traced, averaging about one case a month.

A fact which we believe of general interest is that many, if not the majority of these, gave a history of coming from rural districts, where their own cases, or those of the epidemic from which they contracted the disease, have been either diagnosed chicken-pox, or have been passed as some obscure and nameless disease of no importance.

That the disease is less serious in a sparsely settled district, in which the more intelligent avail themselves of the protection afforded by vaccination, and the more ignorant care but little for facial appearance, is not questioned; but a problem most vexing is confronted when a community such as ours is invaded, the masses of whose inhabitants—at best none too cleanly—are crowded together in mining villages, the majority unvaccinated and opposed to vaccination, and *with no State law* to assist in enforcing it. In so fruitful a field for the spread of contagion, one need not wonder when the statement is made that—from the showing above men-

tioned—we have reaped a harvest of four hundred and fifty cases.

The average of these has shown an incubation of from ten to fourteen days, and, while some have complained of a dull, tired feeling preceding more violent pains by a few hours, others are taken suddenly with a headache and back-ache of varying intensity, completely prostrating one, while another suffers but little. Two women complained only of facial neuralgias. The majority suffer from nausea and vomiting, though a few have denied suffering any inconvenience whatever, the eruption having been detected while they were at manual labor, investigation showing that not an hour had been lost from work. The suffering has been most intense the first two days, and a decided relief is experienced on the appearance of the eruption the third or fourth day; though I have notes of a case in which it was delayed until the sixth.

The temperature has ranged in cases in which it was noted from 101 degrees F. to 105 degrees F., and has quickly subsided upon first appearance of eruption. In worse cases the tongue has simulated a beginning typhoid. Upon the whole, no characteristic has been noted in this stage which would differentiate the disease from a beginning la grippe or typhoid.

The eruption at first is minute pinkish macule, without any perceptible induration, and certainly not the feeling of a "shot under the skin" of the text-books, but passing in a few hours to simulate very closely a "flea bite." At the end of twenty-four hours it has something of the indurated shotty feel, which, in my experience, does not last longer than thirty-six or forty-eight hours, passing on into a vesicle, which, in about the same length of time, is again shading into a pustule. Within a few hours a darker spot makes its appearance in the centre of the pustule, which here and there may sink into a depression. The eruption is most plentiful on the face, wrists, hands, back, and buttocks, appearing about in the order mentioned, and showing up on the palms and soles about the time those first appearing have reached vesicular stage.

As above stated, this description applies to the average well-marked case, in which but little secondary fever occurs, and desquamation is complete by end of third week.

The individual papules on first appearing seem to include in their formation all layers of the skin, and to the naked eye are almost identi-

cal with those of syphilis, which in a few cases has made a diagnosis most difficult. The following case is a good illustration: A negro boy with chancere, or chancroid, on penis, stated that he had no possible exposure to small-pox; that he had been sick an indefinite time, and had taken "blood medicine," which had caused symptoms typical of small-pox; and later two others ilar in two days; then pustular, with all symptoms typical of small-pox, and later two others who had been exposed to him developed clearly-marked cases of small-pox. As a matter of fact, the enlarged glands, falling hair, and particularly the irregular crops of the eruption make the diagnosis of well-marked cases of syphilis clear, but in a recent case, with eruption predominating, and suspected, or known exposure to small-pox, one cannot feel safe until he has seen the case on consecutive days.

About sixty per cent. of my cases have shown the eruption to be symmetrical over entire body, including scalp, soles, and palms, each pustule standing out in bold relief—in all things but lack of secondary fever and prostration, corresponding closely to the discreet small-pox of the text-books.

About eight per cent. have differed from this description, in that the papules stand closer together, the worst cases in the beginning simulating measles more than any other eruptive trouble, but as they grow in size their bases coalesce over exposed surfaces, and as the pustular stage comes on the face presents the appearance of almost a solid scab, with eye-lids and lips swollen until the former cannot be separated, while the latter seem to roll outward, as it were. Swallowing is most difficult on account of the ulcerated condition of the mouth and throat, the saliva dribbling from the mouth inropy masses; and upon the whole the distorted features and general condition present a picture most pitiable and never to be forgotten.

To the remaining thirty-two per cent. I do not know of a better term to apply than *atypical*, for while the course and symptoms of above are followed, they are very much modified, and especially does this apply to the eruption. While this is generally symmetrical, I have noted fully a dozen cases in which not over half this number of pustules appear on the face. Three cases showed only one pustule, each on the face. A few cases had no eruptions on the palms and soles, and three suspects confined with cases had initial symptoms of chilliness,

headache, backache, etc., in which I was never able to clearly make out an eruption. None of these cases referred to in particular had been vaccinated.

That the above types were one and the same disease is shown by both the mild and severe cases developing from the same exposure, and by the fact that in various instances have those originating from different sources of infection been nursed by others who had contracted the disease years ago during epidemics whose high rate of mortality left no question of their genuineness, and in no case was there a second development.

I have been surprised to note the discrepancy in the severity of the primary symptoms with that of the eruption which is to follow, the latter having come out mildly in cases which seemed to suffer as much as those who developed a confluent form. Also, with a given number of exposures, it has been impossible to form a correct idea as to which cases will belong to the severe and which to the mild type. To illustrate, a section foreman developed a case last December so mild that it was not diagnosed, and when afterwards examined no well-marked pits could be found; from him developed seven cases, his wife's and eldest daughter's cases being confluent, their faces being badly pitted on recovery. The second and third daughters suffered but little, while the youngest had a clearly-marked discrete case. A colored laborer exposed to him developed a virulent confluent case, and died on the eighth day of the eruption, while a second laborer was one among the number above mentioned who was discovered at work in the stage of eruption, and never admitted suffering in the least. Neither of these was vaccinated. A son of this same man had been vaccinated, and was the only member of the family to escape the disease, though continually in and out of the room in which the sick were confined.

Among the cases noted have been about an equal number of white and colored, and little or no difference has been noted either in the susceptibility of the different races to the disease, or in its severity.

One woman in the sixth month of pregnancy miscarried in the early eruptive stage, with no complications. Another at term developed the disease, the eruption coming out slowly, with a tendency to appear in crops; while in the pustular stage she gave birth to a girl baby. The disease in the little one was clearly marked, be-

ing in the vesicular stage at birth, passing to the pustular and desquamated stage in due time. Both mother and offspring did well. The entire family of this mother was suffering from small-pox, and the question of syphilis did not enter into the diagnosis. The next youngest case was that of an infant of four months, which developed a diarrhœa, which terminated fatally just as desquamation was complete. Upon the whole, the disease has been mild among children.

I have noted a large number exposed in the earlier stages of the disease, and have not yet seen a development from an exposure previous to the clearly-marked papular stage, and but few previous to the vesicular.

Out of the above-mentioned number of cases only four have died.

Touching the efficacy of vaccination, I can now recall but one instance of the possessor of a well-pitted scar developing the disease, although I have seen a great number exposed. One illustration will suffice: At Maybeury, a man, wife, and three boarders were equally exposed; all except the husband and one boarder had been successfully vaccinated. These two latter promptly developed clearly-marked cases of the disease, while the remaining three were quarantined in the same house, and were almost constantly together in the same room for a period of three weeks, and failed to develop it. In an adjoining room lived a family consisting of husband, wife, and three children, whom we could not move. Of these, the husband and two children had been vaccinated, but his arm did not show pit. Only the two children who were vaccinated escaped. Many other similar cases could be mentioned, but suffice it here to say that aside from the well-known statistics upon the subject, in the light of my own experience, I am convinced that it is not tempting fate too far to assert that could every individual be vaccinated, and this repeated at proper intervals, small-pox could be placed in the same category as the mild exanthemata, and would cease to be a nightmare to boards of health and to tax-payers, who must bear the expenses incurred by quarantine.

To accomplish this, the burden rests upon our profession. Until it is accomplished, if we are lax in our efforts to detect and quarantine even the least marked cases, the possibility of the mild epidemics taking upon themselves a virulent form hangs over us like the sword of Damocles; and should the worst happen, many a

scarred face from out the shades would frown upon us in silent reproof.

In conclusion, I feel that I am justified in saying that the very mildness of an epidemic of small-pox is its danger, and, in the least marked cases, taken along with no known exposure, the most experienced and accurate observer must need hesitate before making a positive diagnosis. The general practitioner who fails to report such a case, or health officer who neglects to isolate it, awaiting developments, subjects his community to unwarranted risks, and has no right to complain if he himself is the subject of adverse criticism.

SUPRA-PUBIC CYSTOTOMY, WITH A REPORT OF A SUCCESSFUL OPERATION UNDER THE INFLUENCE OF LOCAL ANESTHESIA WITH SCHLEICH'S SOLUTION.

By C. G. CANNADAY, M. D., Roanoke Va.,
Surgeon to Rebekah Sanitarium.

Whether Pierre Franco, of Tourries, in Provence, in 1556, who first performed this operation, or Roussetus, in 1590, who never did an operation, but wrote up the details, sharply criticising Franco for influencing others from doing the operation, deserves the honor of first introducing the operation, is of little importance. It is certain that the operation was done by many surgeons of the fifteenth, sixteenth, and seventeenth centuries, and, as described in Roussett's work in 1590, and Thornhill's, of Bristol, Eng., in 1722 (who was the best exponent of the operation), is practically the same in detail as we now do. And great credit must be given to these men for their results, when antiseptics and anesthetics were unknown.

The case I wish to report is of interest from several standpoints:

Mr. P——, an old Confederate soldier, suffered for many years from stricture of such narrow calibre in the prostatic urethra as to admit, with much difficulty, a number one catheter or sound. This patient was warned repeatedly of his danger, but refused to have any line of treatment looking toward a cure. I saw him at various intervals for several months. In December, 1897, I was called, and found him with distended bladder, extravasation of urine, and great pain. It was impossible to insert a filiform bougie, every method being tried, but ac-

complishing nothing. Supra-pubic cystotomy was decided on, as a perineal section, under the circumstances, was not thought practical. An attempt was made to chloroform patient, and, notwithstanding chloroform was administered by a junker inhaler, as modified by Krohne & Sessman, of London, which is considered extremely safe, still the patient came so near dying several times before anesthesia had been fully produced (due, as it subsequently was ascertained, to advanced albuminuria), that this mode of anesthesia was abandoned. It was decided to attempt the operation with Schleich's solution, together with eucaïne. The abdominal walls were not less than five inches, as the patient was very obese—this alone rendering the operation long and tedious. Nevertheless, the tissues were kept saturated with that solution, to be aided occasionally by eucaïne, until the bladder was reached and opened, the usual procedures being carried out with little pain to the patient. The shock was *nil*. The tissues in the abdominal walls were filled with extravasated urine, abscesses formed in various parts of the pelvis, but eventually, after a lengthy period, closed up. The patient suffered from sepsis, but was tidied over by the Edison asepsoline, hypodermically, which I found especially efficacious in such cases. The Cath-cart modified apparatus was made and used to syphon the bladder, and was in every way quite an improvement over the old method. Owing to certain complications, the details of which will not be given, it was necessary for the dorsal position to be maintained for at least three months, during which time not a bed-sore occurred, due to the fact that the patient was kept on a water-bed.

The patient has since been operated on for prostatic stricture. The rubber tube which was devised so as to fit carefully the opening into the bladder, and which conveyed the urine into a rubber bag attached by straps around the abdomen, was dispensed with. The abdominal opening was closed up, and the patient was enabled effectually to void and retain the urine. I am convinced that this operation can be done in any case with little pain, and comparatively no shock, by using Schleich's solution, occasionally aided by a little eucaïne, and I shall not hesitate to do a cœliotomy with such local anesthetics when an occasion arises in which the chloroform or ether cannot for any reason be safely used. The chief objection to its use is that the tissues do not heal rapidly after its use.

REPORT OF A CASE OF SUBCUTANEOUS INJECTION OF PARAFFIN.

By JUNIUS F. LYNCH, M. D., Norfolk, Va.,

Visiting Physician Hospital St. Vincent de Paul, Norfolk, Va.

My attention was attracted to this subject some time ago by a request from the young gentleman whose photograph accompanies this to alter the shape of his nose. He had a typical saddle nose, the result of a blow received some ten years ago.

After reading an account of the results obtained by Gersuny in these cases by the subcutaneous injection of soft paraffin, I determined to try it. The operation is very simple, and requires little time. In my case the patient left the operating room and went immediately to his work.

The usual preparation of the field of operation is, however, very necessary, as is also the thorough sterilization of all instruments used. After the injection of cocaine, the paraffin,



Before and after injection of paraffin.

which has been previously boiled and allowed to cool, is drawn into the syringe and injected just under the skin until the depression is filled. It produces no irritation, and heals in place with little or no inflammation. In the course of two or three months it grows harder, and becomes of cartilaginous consistence.

The term *paraffin* used in this connection is misleading, as one naturally infers it is the hard

paraffin which is used—the substance from which candles are made; it is the soft paraffin, or “white vaseline,” that should be used, which is a soft salve at the temperature of the room, and which emerges like a worm from the point of the needle.

CASE OF TWIN CONCEPTION; ALMOST PAINLESS MISCARRIAGE OF ONE FOETUS AT SEVEN MONTHS; OTHER CHILD BORN AT TERM; ONE PLACENTA.*

By J. PROSSER HARRISON, Richmond Va.

The lady referred to in this report is a Virginian, white, 42 years old, married 18 years, has had seven pregnancies to the full term, all of the children living, and 3 miscarriages at two, four, and six months, respectively. She was taken unwell on 29th November last, and the usual symptoms of pregnancy progressed without incident until 20th May, 1901, when she felt a sudden gush of water from the vagina, followed by quite a severe hæmorrhage. I confined her to bed for ten days, and there being no further symptoms she got up and went about her usual household duties.

On July 4th she had two sharp pains in her abdomen and went to the closet to relieve her bladder, when, in her words, something passed from her, but was not detached, and being afraid to pull on it, she supported it to the bed, where I found her about half an hour later. I found a foetus expelled, and cord was attached; used gentle traction, and then quite forcible traction without results. I introduced my finger, and found the os sufficiently dilated to introduce three fingers, and felt the head of a living child. I followed the cord along the right side of the uterus as far as my finger would reach, and, finding no attachment, used considerable force and detached the cord. There was no hæmorrhage, no discharge, no pain—in fact, no symptoms of either. The patient was kept in bed. The foetus was about three months' growth; genitals sufficiently developed to distinguish the sex (male). Head about the size of tennis ball; head compressed flat. There was no decomposition; no foetus; no maceration. It looked as if it had been immersed in alcohol.

*Read before the Church Hill Medical Society, of Richmond, Va., August 29, 1901.

On the 7th July mother was taken with pains about 5 P. M. I gave a full dose of opium, and was called again about 10 P. M., when I found her in active labor. I ruptured the membranes at 10:30, and in fifteen minutes a seven months' girl was born. After delivering the placenta, I introduced my hand, but found no foreign substance (second placenta). After washing the placenta I found a portion of it, outside of the membranes, as large as my hand, presenting the appearance of the expelled fœtus. There is no doubt in my mind that this was a twin conception, and not a super-fœtation, for there was only one placenta.

The mother made an uneventful recovery. The child is well and growing.

The leading feature in the case is that a dead fœtus should remain in utero with a living child for four months without undergoing decomposition, without producing grave symptoms in the mother, and without bringing on labor. Will be glad to hear the views of the profession on this case.

2314 East Broad Street.

MEDICAL TREATMENT OF THE DISEASES OF THE KIDNEY.*

By J. N. UPSHUR, M. D., Richmond, Va.,

President of the Tri-State Society of the Carolinas and Virginia, &c.

To intelligently consider the therapy of renal diseases, it is necessary that they should be classified under *congestions*, *inflammations*, and *organic* change—bearing in mind always, that one pathologic condition may be, though not necessarily, consequent upon the other. The development of inflammatory change, and subsequent organic lesion, do not necessarily follow upon congestions. This last may not, of course, be a diseased condition *per se*, but form a part of some clinical picture, yet important in the sense of a grave complication, which may be the pivotal point in determining the result of the illness.

It seems to be a work of supererogation to say anything of the treatment of acute congestions; so plain are the indications, that it is hard to go wrong. Yet the subject would not be complete without at least an outline of the most effi-

*Read before the Richmond Academy of Medicine and Surgery, September 10, 1901.

cient means to be exhibited to bring prompt relief.

We find the patient with complete or almost complete suppression of urine, skin dry, some temperature, and if a sufficient time has elapsed tendency to or pronounced uræmic coma. We must remember the vicarious office of the skin, and bowels for relief of the kidneys, and by hot packs, administration of saline purges, diaphoretics of pronounced action like pilocarpin, with turpentine stupes over the loins, relieve the system of harmful excrementitious matter, subsequently rousing the kidneys to active secretion by the exhibition of suitable diuretics, like flaxseed tea and lemon, hot lemonade, acetate of potash, etc. Be careful always to select such agents as will be at least irritant to the kidneys, and therefore less likely to enhance the trouble by producing irritation, and increasing rather than diminishing the congestion. Care should be taken in the subsequent treatment that the kidneys are continuously well flushed by lithia in some form; by regulation of diet, so that an unusual amount of excretion be not required as the result of gastric derangement. The diet should be light, but nutritive. Alcohol in all forms should be forbidden, and the subject of the attack is better off without either tea or coffee. The body, especially over the loins and abdomen, should be protected from sudden changes of temperature by soft, warm flannels.

When passive congestions are present, it is absolutely requisite to intelligently treat the condition, that careful and analytical discrimination should be made as to the cause, in order that it may be removed. To attempt to stimulate the kidneys under these conditions is like whipping a foundered horse; it only adds to the gravity of the trouble, and does harm instead of good. These passive congestions have usually as their prime cause feeble heart action, whatever may be the condition that may be back of it and acting as a depressant; low fever, septiciæmias, myocarditis in some form, failure of compensation in valvular lesion, animal poisons, such as the infection of diphtheria, or other exanthems, or super-saturation with drugs, as digitalis, when it has been administered too long and the third stage of the physiological action has been established.

To brace up the heart and make it perform its function as nearly in a normal manner as possible, is the indication for relief; and the selection of the agent requires a just and intelli-

gent discrimination; care—great care—must be taken that no agent is selected which can directly or indirectly be depressant. The salicylates in every form, whether as a drug or as a constituent of those proprietary agents into which it enters as the most prominent factor, as diuretin, should not be considered for an instant, as they are positively contraindicated. Nitro-glycerin, erroneously spoken of, and considered as a heart tonic, can be only fruitful of evil, because it is purely and simply a cardiac depressant, through its paralytic action on the vaso-motor nervous system. Alcohol moderately, but caffeine, strychnine, strophanthus, are agents upon which we may rely, encouraging the drinking of an abundance of pure water, and paying careful attention to nutrition.

In acute inflammation, we have a different pathologic condition to deal with. The kidney is acutely enlarged, and needs depletion by such agents as will make the blood-vessels unload themselves. Counter-irritation to the loins, with turpentine stupes, free derivative action from the kidneys through the skin by exhibition of pilocarpin, and other active diaphoretics, including the hot pack, from the bowels by full and repeated doses of Epsom salts, stimulation of the kidneys to a freer secretion by such agents as nitro-glycerine, given in doses of 1-50 to 1-20 grain every six, four, or even two hours if necessary. It acts in this condition by dilating the tense blood vessels and giving more room for the forwarding the current of blood previously domed up and threatening development of a hyperplasia in the organ, and relieving the heart tension by diminished resistance in front.

In these conditions, too, especially when a sequel of scarlet fever with pronounced dropsy, infusion of digitalis serves a good part, pushed to physiological point, where it produces diminished tension, causing a very free flow of urine. It is, I know, a very nice distinction to make of simple inflammation of the kidneys and an acute parenchymatous nephritis, and possibly it is only one of degree, but the duration of the attack can be understood to discriminate between the two. In parenchymatous nephritis, tubular, vascular, and interstitial tissues are all involved, and the condition is more grave, and much more apt to be followed by serious organic degenerative change, requires, too, more active and longer continued treatment. Acute parenchymatous nephritis does not infrequently terminate in complete recovery under appropriate treatment,

but is also a very common thing for it to run into a chronic condition; analysis, chemical and microscopic, showing abundance of albumen—persistent also—and kidney debris and blood and epithelia and dark granular casts, blood corpuscles and free epithelium and fatty cells in the urine.

In the treatment of this form of trouble, rest in bed, quiet and warmth, are the indications; the exhibition of such agents as will combat the suppression of urine, with all the ills that follow it. The patient becomes enormously dropsical very soon, and the swelling and tension are sources of great discomfort. Agents, therefore, should be selected which not only stimulate the kidneys to increased action, but promote absorption. Infusion of digitalis is highly recommended at the outset, acetate and bitartrate of potash, lemonade, etc., being added just as soon as the digitalis shows its physiological effect on the pulse. (This is the second stage of its action, diminished tension and increased frequency.) I prefer other agents where there is vascular tension, with hard, firm pulse. I know of no agent which relieves the condition more promptly and efficiently and causes as abundant flow of urine as nitro-glycerine; coincidentally may be given simple diuretics, abundance of lithia water, lemonade, acetate of potash, etc; saline purgatives, as well as others of pronounced hydragogue action, are very valuable and tend to increase rather than depress the strength of the patient. They exert also a derivative influence from the brain, and, eliminating the retained effete material, tend to counteract the uræmic coma, which always threatens. It also diminishes the tendency to convulsions. Vomiting or nausea is often a distressing symptom, and is to be relieved by such agents as are sedative and soothing to the mucous coat of the stomach. Distressing itching of the skin, which is sometimes present, may be relieved by rubbing freely with menthol in almond oil.

When acute mania, delusional insanity, are present, resort should be had to bromides, especially bromide of potash, because the potash element tends to the kidneys for elimination and with increased secretion. Morphia should be avoided; indeed, all preparations of opium, because of their pronounced interference with secretion, though sometimes the urgency of the symptoms to be controlled is so great that, much as we may deprecate it, opium, or some one of its alkaloids, has to be exhibited for temporary

relief. I have found hyoscyamin in dose of gr. 1-100 hypodermically very useful in procuring sleep and quieting nervous irritation. To the nurse, it manifests a sleep very noisy in the beginning, but the patient is unconscious of it, and awakens much refreshed. In large measure, the treatment above outlined in the acute is indicated in the chronic form of parenchymatous nephritis, but some modification will usually be found to be necessary.

It must be remembered that many cases of the chronic form come on insidiously without having been preceded by the acute. Poverty of blood and general systemic depression usually are prominent; and a sustaining treatment, both by concentrated nutritious diet and appropriate tonics of iron in the form of Basham's mixture, manganese, arsenic, and strychnine, are indicated; but care should be taken not to exhibit the iron in too large doses, as it will lock up the secretions and defeat the object for which it is administered.

Careful attention should be paid to diet. The less meat taken the better, but an *abundance* of good sweet milk or buttermilk, diluted with Vichy water, is desirable; succulent vegetables may be allowed; tea, coffee, and alcohol should be prohibited. Hot pack may be administered daily for its effect on the skin and depurative effect on the blood. The time comes, however, when all means fail, and we can only endeavor, alas, often succeeding but poorly, to make the patient comfortable.

What has been said fully of the treatment of chronic parenchymatous nephritis applies equally to the treatment of the interstitial form; it must be largely symptomatic. I would emphasize the contraindication for the exhibition of mercury; the tendency to ptyalism is very strong, and when it does occur it is very intractable, going on to a condition of aggravated cancrum oris. In the last stages, when distress is extreme, resort must be had to some form of anodyne, potent enough to give relief from suffering. I have been forced repeatedly to resort to some form of morphine and atropine. I have had very good results from the exhibition of hyoscyamin, gr. 1-100, given at bedtime hypodermically.

The treatment of *lardaceous* kidney is largely anti-syphilitic, or by the removal of a limb in which exists profuse chronic suppuration or suppurative pyelitis, or pyelonephritis, perinephritis, or perinephritic abscess. The treatment

belongs so eminently to the domain of the surgeon that I pass it by as not being within the scope of this paper.

Tubercular kidney requires general upbuilding of the system, just as when tubercle exists in any other organ or region.

Kidney colic.—The treatment is palliative at the time of the paroxysm, and dietetic during the interval, the form of the diet depending on the composition of the stone, or sand. If uric acid dominate, the exhibition of alkalies is indicated, especially alkaline mineral waters. A limit should also be put to the amount of nitrogenous diet. If the tendency be phosphatic, benzoic or boric acid has the reputation of being efficient, but these are not well borne by the stomach. The mineral acids, especially dilute muriatic, will be found useful. In the matter of diet, meats and milk are indicated, and a diminution of the vegetable element because of their tendency to alkalinize the urine. The urine should be carefully watched for phosphatic deposits.

The only medical treatment in floating kidney is in the direction of upbuilding of the general health, resort to surgical procedure being required in many cases.

Hæmorrhage from the kidney is to be combated by removing the cause, whatever that may be. It is sometimes due to sharp crystals of oxalate of lime passing through the kidney; and I have found, when this is the cause, most decided benefit from the exhibition of the tincture of gniacum, teaspoonful every two, four, or six hours.

Finally, so common is cardiac involvement present with kidney lesion that careful discrimination should be exercised to determine which is the primary condition, and the remedies must be directed accordingly.

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SURGICAL INTEREST OF THE SUB-PERITONEAL TISSUE.*

By HUGH M. TAYLOR, M. D., Richmond, Va.,

Professor of Practice and Clinical Surgery, University College of Medicine, Richmond, Va.; Surgeon to Virginia Hospital, Etc.

A profound interest is attached to all knowledge pertaining to the peritoneum and its morbid changes, and a vast literature commensurate with its importance is a sequence of this focussed interest. This is by no means true of the sub-peritoneal tissue—a structure surgically hardly less important than the peritoneum itself. The term sub-peritoneal tissue implies that this structure underlies literally the largest of all serous sacs in all of its ramifications. But it does more—it extends as a vaginal sheath around all of the structures that pass out of the abdomen, above into the thorax, below into the thigh and buttocks, and laterally with the blood vessels and nerves to the abdominal walls, and surrounds partly or wholly many of the organs which are post-peritoneal.

The sub-peritoneal tissue, in its extent, may very well be compared to the sub-cutaneous cellular tissue—a continuous sheet of sub-peritoneal tissue underlying the peritoneum, just as a continuous sheet of sub-cutaneous cellular tissue underlies the skin throughout the whole extent of the latter. A septic cellulitis starting in the foot may rapidly travel through this spongy continuous sheet of cellular tissue until it infects the whole limb. A post-peritoneal cellulitis starting as a retro-caecal infection may culminate in a perinephritic, perihepatic, or phrenic abscess.

Recalling the fact that this sub-peritoneal structure extends as vaginal processes along the blood vessels and nerves, passing from the abdomen into the thorax, we have an explanation of the extension of suppuration from the abdomen or pelvis into the chest; how, for example, appendicial pus may be coughed up, and, on the other hand, how an empyema of the pleura may point to the thigh, or a wounded thoracic duct result in pointing in the thigh or groin, by travelling along through this spongy connective tissue? I have seen post-peritoneal appendicial abscesses open in the middle line of the abdominal wall, on the buttocks simulating suppuration in the hip joint, and through the inguinal canal into the scrotum.

A few nights ago, as I took my seat in a street car, the conductor said: "Doctor, you do not know me." He then reminded me that I had treated him twelve or fifteen years ago for abscesses in his abdominal walls (supposed iliac or lumbar abscess). His case so aptly illustrates post-caecal suppuration from appendicitis, and the wide range over which the pus may travel, that I have asked him to come before you. Let us go back to the beginning of his trouble. He tells us that it began with pain in the right side of his belly, that it lasted for weeks, and that he was very sick. In a few weeks, he thinks it was, an abscess formed and pointed here near the crest of the right ilium. These two or three scars over his appendiceal region represent the first openings. We see others near the median line, and several on the left side over the left iliac region, and some behind—a dozen or more in all. As was common in those days, I credited his trouble to lumbar abscess.

Most of you will agree that as our knowledge of appendicitis and its many erratic manifestations has increased we now rarely meet with lumbar and iliac abscesses. I should have known better at that time, and certainly would know better now from one occurrence, which was that several foreign bodies worked out of the sinuses. This was before we appreciated fully the capabilities of appendicitis to produce surgical surprises. On examination, the foreign bodies were shown to be coproliths. In this case, starting as appendicitis, suppuration in the post-peritoneal tissue, this infection has travelled back and forth in the continuous plane of connective tissue, which connects the transversalis fascia to the peritoneum, and burrowed the abdominal wall in places until it was honeycombed.

In connection with this case, we have said enough to outline the possibilities of sub-peritoneal cellulitis. Certainly the subject of its inflammation is a very wide one. The condition may meet the surgeon at every step in his practice, and in the preaseptic era was especially a post-operative complication of frequent occurrence. An Alexander operation, a herniotomy operation for varicocele, or castration, may result in infection of the vaginal process of this tissue, which passes out with the round ligament, etc., and a virulent diffuse cellulitis ensue. The only disaster incident to the Alexander operation in my experience resulted from wound infection, and an upward and inward

*Read before the Tri-State Medical Association of the Carolinas and Virginia at its annual session, 1901.

extension and a blocked pelvis. It may dog the steps of the abdominal and pelvic surgeon, and may follow nearly all the diseases and injuries of the abdominal and pelvic parietes and viscera, and even the thoracic; and, as we have said, its products tend to travel in directions that may lead far wide from its starting point. We find it described under the headings of retro-peritoneal, subphrenic, perinephritic, peri-pancreatic, iliac or pelvic cellulitis; but we have a clearer understanding of its scope if we recall the extent of this continuous sheet of post-peritoneal connective tissue.

By William Anderson, F. R. C. S., we are told* that structurally "the sub-peritoneal planes consist of highly-elastic areolar tissue, containing fat, and traversed by bands of unstriped muscular fibre. It varies in different individuals in amount from a thick accumulation loaded with fat, as at the starting point in front of the spine, to a gauzy film over the intestines and in the sheath-like prolongations which ensheath structures—*i. e.*, vessels, nerves—and which pass out of the abdomen.

It is intimately related to the parietes, the peritoneum, and the viscera. In its parietal relations it forms a continuous sheet around the inner surface of the abdomino-pelvic wall in contact with the diaphragmatic, transversalis, iliac, and pelvic fascia. In its peritoneal relations it is loosely adherent to the parietal layer of the serous membrane, permitting the ready detachment of this in such operations, as the extra-peritoneal ligation of the iliac vessels. Passing out along the renal vessels, it invests the entire kidney and its ducts loosely with a capsule containing usually a large quantity of fat; it also covers the supra-renal body. As Glisson's capsule, it is prolonged over and into the liver, and it forms more or less complete sheaths for the other organs which are partly or wholly retro-peritoneal, such as the pancreas, the third portion of the duodenum, and the pre-sacral portion of the rectum. In the pelvis it completely invests the greater portion of the mesial rectum, and surrounds the capsule of the prostate in the male; it is in contact with a portion of the bladder in both sexes, and in the female it runs between the layers of the broad ligament to reach the hilum of the ovary, the inter-serous portion of the Fallopian tube, the sides, and part of the front of the uterus, and

the greater portion of the vagina. The levators ani and coccygei, with their fascia, separate it from the perineal ischio-rectal and anal region.

Extra-abdominal prolongations are of great importance. The tissue ensheathing, as it does, the great and retro-peritoneal vessels and nerves and all their subdivisions, runs with them in the form of vaginal processes in all directions—outward through the abdominal wall to the surface, backward into the spinal canal, downwards beneath Poupart's ligament into Scarpa's triangle, where it forms the femoral sheath and canal, and through the inguinal canal into the labium or scrotum, through the obturator and sciatic foramina into the deep thigh; the perineal ischio-rectal and gluteal regions, and down the back of the lower limb; finally, in an upward direction, it passes through the various openings in the diaphragm, to become continuous with the sub-pleural tissue and mediastinum.

A consideration of the wide expanse of this tissue, its relations and extensions, forecasts the surgical conditions in which it may become involved. Through its *structural elements*, it becomes subject to—

A. (1) Neoplasms, fatty, fibrous, myomatous, sarcomatous, and cystic; (2) primary inflammatory process of surgical or accidental origin; (3) atrophic and degenerative changes which favor certain visceral displacements, as movable kidney, enteroptosis, hernia, etc.

B. Through its parietal, peritoneal, and visceral relations, it is liable to implication in all inflammatory and malignant affections of the abdomino-pelvic walls of the peritoneum and of the viscera, and to infiltration with secretions and excretions from the latter.

C. Through its vascular, glandular, and fecal contents, it is subject to hemorrhages, dropsical and lymphatic extravasations to certain cystic tumors, and to secondary malignant disease.

D. Through its peri-vascular extensions it may become involved in processes arising in the thorax, perineal and ischio-rectal region, external genitals, lower extremity or elsewhere; or its own diseases may spread in any of the directions named, as when a perinephritic or subphrenic abscess spreads into the mediastinum, plura, lung or pericardium, or when a sub-peritoneal fatty growth runs through the inguinal canal.

It may be very difficult for the surgeon to distinguish the starting point of any given sub-peritoneal manifestation, since the structure

* British Medical Journal, October 17, 1896.

and connections of the tissue favor the most remarkably wide and rapid extension of morbid processes in various directions. The following classification may help to guide a discussion:

1. *Inflammatious*. Classified according to etiology, (1) idiopathic; (2) tubercular; (3) syphilitic; (4) metastatic; (5) lymphatic, or remote origin.

Classified according to locality, (1) retro-peritoneal, including mesocolic, mesenteric, etc.; (2) subphrenic; (3) perinephritic; (4) iliac; (5) pelvic, including parametric, prevesical.

Primary, (1) lipoma and fibrolipoma; (a) retro-peritoneal may become mesenteric, mesocolic, omental, parametric; (b) hernia through the inguinal, femoral or obturator openings, through the linea alba and in other situations; (c) intra-peritoneal after the manner of appendices epiploicæ.

In addition to fibroma, myoma, and myofibroma, sarcoma, cyst, simple, hydrated and dermoid, as primary growths, we may have secondary, notably carcinoma or sarcoma conveyed by lymphatics of blood vessels.

Hemorrhage into this tissue may issue from rupture of healthy or diseased blood vessels.

Lymph exudations from disease or injuries of the receptaculum chyli or its tributaries.

Extravasations of secretions or excretions. Bile, feces, gaseous infiltration, air from communication, etc., with lung. Intestinal gases from perforation of gut, gases of decomposition.

Atrophy—leading to displacement of organs—as in movable kidney, gastroptosis, hernia, etc.

Our own experience has been limited largely to sub-peritoneal cellulitis, and in a majority of cases the primary focus of infection was the appendix. Some years ago, a patient with a sinus in the mid-abdominal wall just above the pubes was under observation. She had a history of a sharp attack of abdominal or pelvic trouble some years previously. A probe passed into the sinus came in contact with a foreign body. A section disclosed an enterolith behind the right rectus muscle and a fistulous tract was traced back to a buried appendix. Post-peritoneal infection incident to appendicitis was evident, and the coprolith had burrowed through this sheet of sub-peritoneal tissue until stopped by the more yielding muscular or fascial tissue.

Some years ago I saw in consultation a young man, who some months previously had had a

large appendiceal abscess incised and drained. He was discharged well, but later on a virulent cellulitis extended from within out through the right inguinal canal into the scrotum, with the result of destroying the scrotum by extensive sloughing. Again I recall a sinus leading down to the crest of the right ilium. Several experienced surgeons had operated, expecting to find necrosed bone, but without success. A careful exploration of the sinus traced it inside of the pelvis and finally to a buried appendix. Presumably from a non-sterile kangaroo tendon used in an Alexander operation, a virulent infection was started, which culminated in extensive exudate in both broad ligaments in the cul de sac, a fixed uterus, blocked pelvis, and prolonged convalescence.

In two cases of laparotomy for penetrating bullet wounds of the abdomen with hollow visceral lesions, drainage was practiced. The patients in each instance lived eight days, and died from diffuse deep cellulitis of the abdominal wall. Drainage along the suture tracks in, through and through suturing of the abdominal wall lessen in many instances an extension of infection in the tissue. At the present time we have under observation a man who is coughing up a pint or more of pus a day. He has no lung or bronchial trouble, but there is a history which points to a perihepatitis, a perinephritis, pancreatitis, gastric ulcer on the posterior aspect of the stomach, and possibly as a sequence a phrenic abscess with opening into a bronchial tube.

Exceptionally met with even now, but much more commonly in preaseptic times in such operations as herniotomies, castration for varicocele, and virulent infection, etc., a wide traveling of the infection along the sheet of sub-peritoneal tissue ensued.

We know the peritoneum is not a *nolle me tangere*, as our predecessors supposed, its powers resisting septic invasion is now well known in this time of sub-peritoneal tissue. We dread cellulitis more than we do dermatitis; we certainly dread a cellulitis of the scalp more than an inflammation of the superficial layers of the perianium. Considered as a whole, a sub-peritoneal cellulitis is certainly an interesting and important study. Recalling that this tissue is continuous with that in relation with the pleura, we can easily understand a case we saw recently reported, in which an appendiceal abscess pointed immediately under the

clavical, and as well comprehended how a wound of a large lymphatic in the thorax or abdomen may induce a post-peritoneal chylous collection which may point at Poupart's ligament, or, as has been reported, in the buttocks, or even near the knee.

Sub-peritoneal tumors, solid or cystic, are subjects of universal interest to the surgeon. Mr. Anderson tells us this is especially true of the lipomata, because of their large size, and the difficulty of diagnosing them prior to section; and further, that they may be subdivided clinically into certain varieties: (1) Those which remain confined to the sub-peritoneal spaces, such as the retroperitoneal, mesenteric, omental, parametric growths, which nearly all originate retroperitoneally; (2) those which escape through weak points in the parietes, forming fatty hernia, and (3) those which grow into the peritoneal cavity, like the normal appendices epiploicæ.

A confusing experience was met with by myself not many months ago. I was called upon to operate upon what was supposed to be a strangulated irreducible inguinal bubonocoele. A dissection revealed that the mass occupying the inguinal canal was not an enterocele, nor an epiplocele, but a tongue-like mass of fat, evidently an overgrowth of retro-peritoneal tissue. Such overgrowths induce hernia by stretching the canal; its atrophy, on the other hand, brings about the same condition by leaving the canal empty.

It should be borne in mind, that, while in a majority of cases these fatty masses simulating hernia are usually solid, but exceptionally they may bring down with them attached bowel, or even may be hollow and contain bowel.

Returning to the retro-peritoneal lipomata, while they occur in both sexes, they are twice as commonly met with in women, are usually single, but may be multiple; usually are encapsulated, but may be diffused, and are susceptible to such complications as fibro-lipoma, myomatous or sarcomatous degeneration. In size, they vary from very small to large masses weighing thirty pounds. Their removal is dangerous, because of their size, their intimate relation to important structures post-peritoneal, such as blood vessels, nerves, etc. When they occur between the folds of the mesentery, involves a danger to the nutrition of adjacent bowel. Other tumors and cysts developing in this tissue may attain even greater size, and are the *bete noirs* of experienced abdominal surgeons.

Dermoid cysts and hydatids are occasionally met with. Hemorrhage, traumatic, or pathological, may occur in this tissue from injury to bony parts, as the frustures, or through degenerated blood vessels. Blood in any way effused may become circumscribed or diffused over a wide area. Mr. Anderson says: "Perinephritic hematoma may closely resemble a hydronephrosis," and he cites such a case occurring in the practice of Allingham, in which the urine filtered down into the pelvis. An obstruction to a wound of retro-peritoneal lymphatics may result in an effusion of lymph circumscribed, or it may point at Poupart's ligament, or pass upwards to the sub-pleural tissue—a sheet continuous with the sub-peritoneal tissue.

Gaseous accumulation may occur in this tissue just as in the sub-cutaneous cellular tissue. A lesion of the gastro-intestinal tract may be the source of gas. A wound of the pleura compend in the lung or skin may equally be a source. Gaseous abscesses in abdominal walls are reported.

As we have said, according to Mr. Anderson, "structurally the sub-peritoneal tissue consists of highly elastic cellular tissue, containing fat, and traversed by bands of unstripped muscular fibre. The unstripped muscular fibre is seen in the form of bands extending above the fascia lining of the abdomen to the viscera. Its most familiar example is the fibro-muscular band of Treitz, which supports the termination of the duodenum, but it is also found in the mesentery, the meso-colon, and the broad ligaments, and in all cases appears to be sustentacular in function."

An appreciation of the elasticity of this tissue and the sustaining power of unstripped muscular fibres is especially interesting to the surgeon in connection with ptosis of the abdominal and pelvic viscera. For a long time it has been known that absorption of the perinephritic fat was associated with nephropptosis. We also know that nephropptosis and gastroptosis, enteropptosis, or glenoid disease commonly co-exist. This is true to such an extent that it is often difficult to decide which is the causative agent in the gastro-enteric and nervous phenomena, the nephropptosis or gastro-enteropptosis. Usually the nephropptosis is indicated. We have long thought that the failure of nephrorrhaphy to give the expected relief is due to the co-existing enteropptosis, etc. Visceral ptosis of the abdominal and pelvic organs is a field of much interest to pathfinders of to-day.

Much good work has of late been accomplished in this field, and we think an appreciation of the part played by these mustriped muscular tissues, its sustaining function, and its degenerations may be the key which will unlock much of the mystery surrounding abdomino-pelvic ptosis.

A study of Mr. Anderson's valuable paper will be time well spent. Practically, all that I know about the subject I have learned from this paper and the clinical cases its study has made clear to me.

I have in my remarks copied *verbatim* to a large extent from Mr. Anderson's paper.

2 north Fifth street.

SOME OBSCURE INJURIES FOLLOWING THE TOXIC USE OF ALCOHOL.*

By T. D. CROTHERS, M. D., Hartford, Conn.,

Superintendent of Walnut Lodge Hospital, Hartford, Conn.

There are many serious organic diseases which are traceable to syphilitic infections, also to heat and sunstrokes, and also to brain shocks, concussions or injuries from falls and blows on the head.

Sometimes the connection between these causes and the serious diseases which follow is very clear, and can be traced in a continuous line of symptoms. In other cases it is obscure, with breaks in the history, and yet these causes as the starting point of many grave diseases which follow cannot be mistaken.

Alcoholic intoxication is the first cause of many equally serious diseases and neuro-psychoses, although this fact is largely unknown and unrecognized by the profession.

The familiarity with intoxication, and the delusive theories of moral causation have repelled most efforts to study the pathology and psychology of this form of poisoning; hence the etiology of delirious delusional alcoholies on the streets and in the station-houses are literally more obscure and unknown than the etiology of yellow fever or the plague.

In this new study of the subject I will confine myself to the conditions which are traceable to the first toxic action of alcohol. This may be divided into two classes.

First. The direct injuries which follow from alcoholic poisoning.

Second. The psychoses following this state manifest in the alcoholic craze and inebriety which follows.

As an example of the first form of injury, the following instance is an illustration:

Many years ago I was called to see a physician whose intoxication was so profound as to be alarming. He had attended a supper at a medical society with some friends, and drank several kinds of wine. This was his first intoxication. He had been a total abstainer up to this time, and both the taste and smell of spirits were particularly unpleasant. All his habits of life and living had been regular. He was considered a strong, healthy man, and had never been ill. He recovered the next day, and went home. The only change observed was extreme paleness.

Several years later he consulted me, and gave the following history: After this first intoxication he became anemic; had attacks of nervous dyspepsia; could not eat certain foods. Any over-exertion or break in the regularity of his habits of sleeping or eating was followed by extreme exhaustion. Attacks of insomnia and headache followed; and his ordinary practice was a burden, only done with great mental effort.

He was filled with morbid fears of fatal mistakes and loss of reputation. He had been abroad six months, and returned no better. All the physicians he had consulted had diagnosed neurasthenia with possible incipient dementia, and advised change and rest. He was morbidly introspective, and was alarmed at the possibility of oncoming malignant disease of the stomach. He had grown thin, and was anemic, and though at times he slept and ate well, yet indigestion and insomnia would follow. Various functional disorders frightened him so seriously that he would go to bed for days at a time, then get up and appear well again, and attend to business with pleasant ease. Later, he was obliged to give up surgery for fear of making mistakes, and seemed to have at times doubts of the correctness of his judgment, and grave, unusual care and attention to confirm his opinions. This neuro-psychopathic state continued for two years, ending in sudden death from what was called angina pectoris. He asserted that his condition dated from the injury following the first intoxication.

The second example was also a physician of

* Read at the Mississippi Valley Association, September 12, 1901, at Put-In Bay.

forty years of age, temperate, and in vigorous health. He had never been sick, and had taken unusual care of himself. His ancestors were healthy, long-lived people, and there were no hereditary diseases in the family. He passed a rigid examination for a large life insurance a week before he was first intoxicated. Previously he had never used spirits or tobacco, both from principle and from disgust with the odor and taste of these drugs.

He attended a banquet in a neighboring city, and to the surprise of his friends, when urged, drank freely of wine and champagne. He returned to his home in a semi-delirious state, and later became stupid and remained in bed for three days. Then he recovered and went about his usual work. From this time his manner changed. His former cheerfulness merged into silence and reserve. He seldom laughed, and seemed absorbed in some mental study. He complained of insomnia, and seemed very anxious about foods and baths for himself. Six months later he was anemic, and walked as if partially palsied. His sleep and digestion were impaired. He made no complaint; went about as usual, and when asked to explain his condition, treated it lightly as some obscure nerve exhaustion. The next year hypersensitive states appeared. He complained of cold and sudden heat, and began to express fears of sudden death, and thought the condition malarious; took large quantities of quinine and anti-malarial drugs. His mental condition changed. He was suspicious and irritable, and talked loudly at times and at other times would be reserved and seemed afraid to speak. He consulted a number of physicians, who diagnosed brain exhaustion, and advised change and rest. He spent a year travelling, and came back worse; and a year later died suddenly of some sudden palsy. A *post mortem* revealed nothing that would explain the cause of death.

The third example was that of a clergyman thirty years of age, in charge of a large church. He was a strong, athletic man, temperate, and had never used spirits or tobacco. There was no history of hereditary disease in his family, and he had never been sick. He was chilled from services at a funeral in a country cemetery, and given a large glass of cider brandy for warmth. This diminished the muscular power of his legs so that he spent the night at a friend's house. For other symptoms, hot whiskey was given, and he was considered ill for two days

before he could return home. From this time he became a nervous invalid. First, nutrition was disturbed. Food disagreed with him. Then insomnia and heart palpitation followed. Influenza, malaria, and various forms of neurasthenia were diagnosed. Rheumatism and stiffness of the joints succeeded. Then his mind became feeble, and emotional changes followed, until two years later he resigned his charge, and is now an invalid, unable to walk or bear any strain of mind or body.

The fourth example was that of a mechanic, forty-six years of age. He was a perfectly temperate man, never using spirits or tobacco, and living in good surroundings, and was regular in work, eating, and sleeping.

After a fortunate sale of a patent in a distant city, he was persuaded to drink with some friends, and suddenly became intoxicated. He remained in bed twenty-four hours; then returned home, and called the family physician, and was supposed to have an acute attack of indigestion. From this time he was an invalid, and appeared to be suffering from some obscure neurosis, with swellings of the joints, and general nervous exhaustion. Five years later he gave up business, and is now going the rounds of sanitarium for relief from paroxysmal pain and nameless functional and organic disorders.

These examples are given as marked types of neuro-psychoses and psychopathies, which are traceable, and began with, the first profound intoxication from spirits.

In these instances an aversion to all use of spirits followed the first intoxication. No spirits were taken before this event, and there was a general impression that intoxication was the first cause of the disorders which followed. There was no hereditary history in these cases, and all the facts pointed to the first poison of alcohol as the active and exciting cause.

In two similar instances occurring recently, where an accidental intoxication was the starting point of serious and finally fatal neurosis marked by sclerosis and palsies, there was a history of previous hereditary psychopathies. It was evident that intoxication acted as exciting cause, rousing up a latent tendency to disease, which continued to a fatal termination.

The second clinical phase of this subject is the psychosis following the first intoxication, breaking out later in some form of inebriety, which is literally a symptom of the previous degeneration or injury. I have found a number of less

prominent examples where neuroses appeared soon after the first toxic poisoning from alcohol that was supposed to be due to influenza. Thus, soon after the first intoxication, symptoms of influenza came on, and a long, distressing sequelæ of obscure diseases followed, ending fatally.

Malaria, rheumatism, and other symptoms of disease seemed to start from this point although ascribed to other and insignificant causes. The evidence that alcoholic poisoning was the specific cause was due to the fact that symptoms of functional and organic changes began soon after the intoxication, and also that there were no facts in the previous history which indicated these changes.

I have seen four cases of persons who used wine and beer in great moderation during periods of from two to six years; then suddenly they became profoundly intoxicated; recovered, and were total abstainers ever after.

Dating from a first acute alcoholic poisoning, various and most complex neuroses appeared, and diseases which were obscure and very difficult to diagnose and to treat followed, ending fatally in a short time. The specific cause—alcoholic poisoning—was not recognized, nor the preliminary period of moderate drinking considered as a predisposing factor in the cases.

In my studies of a large number of both alcohol, opium, and other inebriates, a certain proportion of instances have a history of one early, profound intoxication, and then after years of abstinence they merged into a continuous addiction to spirits or some narcotic drugs. An interval of years may have passed from the time of the first intoxication, during which they were total abstainers, and in some instances promoters of the cause of temperance. Then, suddenly, without apparent cause, they became addicted to the use of spirits and drugs. The mental symptoms in such instances are often so prominent as to suggest a long preliminary state of degenerative changes dating from the first intoxication.

The remark of friends and near associates that such persons were always queer and peculiar in their thought and habits is a confirmation of the expectation that neurotic changes had been going on long before the break-down.

The following is an example under my care: A young man of good health and family history became profoundly intoxicated on his graduation from a law school. For ten years he was a hard-working, temperate man, and although

successful, was eccentric. He would suddenly stop business, go to bed, and abstain from food for two or more days, claiming to be exhausted, and threatened with congestion of the brain. The family physician considered it largely hysteria, and could find no tangible cause. Both in his business, and in regard to himself, he was erratic and changeable in his plans, and spent much time reading books of health. Suddenly he began to use spirits daily, and soon became an inebriate. There was doubtless a connection between the first intoxication and the inebriety years after. This was evident in the neurotic symptoms and changes during this period.

Persons who become neurotics in the best conditions and surroundings of life, and then unexpectedly drink or take drugs to great excess, are often found to have a history of some early profound intoxication with slow recovery. These instances are unrecognized, but can be traced in many cases, and the connection between the first intoxication and the later stages can be established without much doubt.

A leading business man became intoxicated at a wedding for the first time in his life, never having used spirits before. He was sick for a week; then recovered. From this time he was conscious of increased nervousness, loss of power of attention, was fearful and worried about matters which previously gave him no concern. He described his symptoms by the phrase that "he had lost his nerve" and could not control himself as in former times. He complained of weakness and disinclination to either think or act, and said it all dated from the intoxication at the wedding. This increased until a year later hemiplegia appeared. Two years afterward he died of some acute disease. The interval between the first toxic poisoning was marked by distinct symptoms of both mental and physical changes and fatal breakdown, which have not received any study so far.

Many persons become intoxicated at long, irregular intervals, depending on some unknown causes, and while there are no pronounced symptoms of neuro-psychical disease which attract attention, there are often symptoms of debility and weakness which are overlooked. Such persons suffer from organic and functional disorders and acute diseases that are ascribed to other causes. Nephritis and obscure forms of so-called rheumatism are common; an instance occurring recently of a physician who was seized with what was called an attack of rheumatism, and

after a few hours of acute pain, died. It appeared that for the past five years he had been intoxicated at least six times, and on each occasion suffered from severe pains in the legs and severe heart depression. The last intoxication was four days before death, and he was out as usual attending to business the day after drinking. No doubt there was some connection between the alcoholic poisoning and the death which was not recognized.

It may be stated as a fact that every intoxication from alcohol is both a physical and psychical concussion to the brain centers, and the beginning of both organic and functional changes which may go on rapidly or slowly. Frequent intoxications develop imbecility and masked dementias. This is seen from any careful study of chronic inebriates. The resisting power of the brain to continue intoxication varies widely, yet it is evident that after certain changes have taken place the action of spirits may seem less acute and prominent, but the degeneration is continuous. Like repeated blows on the head, the effects are cumulative, and finally merge into well-marked organic neurosis.

The phenomena of intoxication from alcohol are familiar, and yet their physiological and pathological significance is largely unknown. An outline view will be of interest. The first glass of spirits produces a sudden flushing or blanching of the vaso-motor circulation of the blood to the face. The facial muscles are first agitated, then become fixed, and have a stolid, palsied appearance. Or they may twitch and quiver for a time, then settle down into a stolid, fixed state. The lips seem more firmly compressed, and when used rapidly, have a spasmodic movement. The eye appears bright and glittering, then becomes suffused with tears, and rolls about in an unusual way, or settles into a fixed, palsied look. The voice is altered. Words come hurriedly or slowly, or very smoothly glide into each other, both with or without an effort. Respiration is quickened, and a sense of shivering and agitation pervades the body. Brain activity is suddenly increased, rapidly merging into confusional states, with difficulty of utterance. When more spirits are taken all these symptoms deepen. The first shock from a sudden interruption of the normal rhythmical flow of nerve energy passes away, and a delusional period follows. This is anaesthesia, with buoyancy, comfort and rest. The first action is

that of shock and profound alteration of the functional activities of the brain. Later the special senses become impaired. Sight is diminished. Hearing is dulled. Feeling, taste, and smell are lowered. There is a fall in temperature. Muscular power is enfeebled. Memory is weakened. Rapidity of thought and power of concentration, with conception and perception and judgment, are all more or less paralyzed. Stupor and unconsciousness follow. Before this later stage a period of exaltation and delusional confidence in ability to think and act more wisely and clearly is nearly always felt.

There is in all forms of intoxication, first a shock and concussion to the brain and nerve centers. Second, a period of anaesthesia of the higher and sense centers, with delusional exaltations and boldness of mind. Third, these all finally merge into stupor, palsy, and unconsciousness.

The so-called stimulation is irritation and paralysis. Psychological measurements of the brain and sense functions, as well as the organic functions at their early period, show palsy. Yet the theory of stimulation is accepted as a true explanation. Each intoxication is a profound sudden paralysis of the brain and nerve function. A concussion from chemical agents acting in some unknown way, raising the heart's action, then lowering it, acts with especial severity on the higher brain centers.

The feeling of comfort, exaltation, and superior vigor are delusions. The theory that the action of spirits will give new power and force in an emergency is an error. It brings recklessness and loss of judgment, with failure of the finer conceptions of the relations of things, but nothing more.

When alcohol is used to the state of intoxication it is always followed by symptoms which show in some degree the injury which has been done. The common sequelae of intoxication are headache and exaggerated sensations of head and stomach, with extreme debility; these are significant signs of injury. The acuteness of these symptoms calls for more spirits, and finally the suffering subsides, because the higher sense centers are blunted and anaesthetized and fail to register the pain impressions.

From our present knowledge of the action of alcohol on the brain and nervous centers, we are sure that recovery from its toxic effects is slow, and in some cases almost impossible. The dam-

age may be covered up and not be clear except from a minute study of the symptoms, and yet it exists.

Intoxication soon after or near the age of puberty has been the starting point of very serious neuroses, which continued years after, often breaking out in some neurosis or form of inebriety.

Profound intoxication at from forty-five to fifty is very serious in the entailments which not unfrequently follow from it.

Some of the facts which I wish to make prominent are these:

First. Intoxication from alcohol to the extent of coma, with profound relaxation of all the functional activities of the body, is often a serious injury to the brain and nerve centers, and is followed by neuroses and organic change.

Second. The significance of alcoholic intoxication in the study of obscure diseases cannot be overstated. It may be both an active and an exciting cause, and should always be considered in neuro-psychopathies or other disorders that follow.

Third. Intoxication at puberty and in middle life is often the starting point of a circle of disease which is usually ascribed to other causes.

Fourth. Intoxication always predisposes to the diseases of inebriety from alcohol or opium which may come on suddenly at any time in after life.

Fifth. Poisoning from alcohol is far more serious than supposed, both in its effects and the neuroses which follow.

he prescribed new glasses. When they came from New York, they were all wrong, and I saw with them everything in a wedge shape. I wore them about one-half day, and had to take them off, and returned to the glasses I had been wearing. I could not see through them, and found I could see better without them. For over eighteen months I went without glasses at all, and could see as well as any one. When I read, I use glasses, but when walking or for ordinary purposes, I do not need glasses at all, although once or twice during the last two months I have had to use glasses for ordinary seeing.

Now, suppose I had taken "Christian Science treatment" at any time prior to this restoring of my sight—even ages before—then that science would have had all the credit for this miraculous recovery of sight, which was wrought in about five or six hours.

I simply write this to show that there are others who get well without resort to Christian Science. It is an answer to such tales as the Christian Science people put up.

Yours very truly,

WM. D. TURNER, M. D.

Fergusson's Wharf, Va., Sept. 4, 1901.

Analyses, Selections, Etc.

Relation of Infectious Diseases to Chronic Catarrhal Inflammation of the Nose and Throat.

Dr. Carolus M. Cobb, 419 Boylton street, Boston, Mass., in a paper read before the Mississippi Valley Medical Society, September 12, 1901, shows the relation of the infectious diseases to chronic catarrhal inflammation of the nose and throat, first by a resume of the reports of Wolff, Pearce, and Weichselbaum. Wolff has reported the results of the bacteriological examination of the sinuses from autopsies performed on 22 cases of diphtheria, 5 cases of measles, and 2 cases of scarlet fever. He found the antrum of Highmore involved in all of the cases of diphtheria, and in many of the cases one or more of the other sinuses were also affected. The inflammation of the sinuses varied in intensity—15 of them being severe. In 12 of these the Klebs-Löffler bacilli were found;

Correspondence.

Christian Science and Eyesight.

Editor Virginia Medical Semi-Monthly:

I notice in the Richmond News of September 3, 1901, under the heading, "Charles W. Tanner's Sight Restored, and It is All Attributed to Christian Science."

Since I was fourteen years of age, I have had to wear glasses for astigmatism, and as I grew older the stronger the glass and the more constant the use—so much so that after twenty-two years of age I had to wear glasses constantly. About two years ago I consulted an oculist, and

the other 7 were simply mild attacks, caused by other bacteria. Of the 5 cases of measles examined the antrum was found involved in 3. Cultures from the antrum in two cases showed the streptococcus and pneumococcus, and in 1 staphylococcus. The sphenoid sinuses were not involved. In one of the cases of scarlet fever, the antrum and sphenoid sinuses were involved. Cultures showed staphylococcus pyogenes aureus, and the bacillus pyocyaneus. The other case showed no inflammatory changes, and the cultures were sterile. Richard Mills Pearce, of the Boston City Hospital, reports that he obtained cultures from autopsies of 39 cases of diphtheria, 2 cases of diphtheria with measles, 5 cases of diphtheria with scarlet fever, and 4 cases of scarlet fever. In the 39 cases of diphtheria, inflammatory changes were found in the accessory sinuses in 25. The number of sinuses involved varied in the different cases, the antrum being the most often affected—*i. e.*, in 16 of the 25 cases. Both cases of diphtheria with measles had double antral disease, Klebs-Löffler bacilli and streptococci being found in both antra in each case. Of the 5 cases of diphtheria with scarlet fever only two had disease of the accessory sinuses, but in one of these cases all of the sinuses were involved, and in the other the disease was unilateral. Cultures from one case showed Klebs-Löffler bacilli and a variety of unrecognized bacteria; from the other streptococcus and staphylococcus, albus and aureus. In three of the four cases of scarlet fever, inflammatory changes were present in the accessory sinuses. Cultures showed streptococcus and staphylococcus albus and aureus, and the bacillus pyocyaneus, and one a short diplo-bacillus. Weichselbaum reports that he found the nasal accessory sinuses involved in 90 per cent. of those who died of influenza.

Secondly, by an analysis of 102 cases from the outpatient clinic of the Lynn (Mass.) Hospital. The patients were those who complained of a nasal or post-nasal discharge, and in attempting to trace them to the primary disease, it was found that—

Thirty-one had existed from childhood, or did not know when it began.

Twenty-five followed one or more attacks of influenza.

Fourteen followed an attack of diphtheria.

Eleven were caused by repeated colds.

Seven followed scarlet fever.

Six followed measles.

Four followed typhoid fever.

Two followed pneumonia.

Two followed whooping-cough.

It is quite probable that a large percentage of the cases which are given as existing from childhood belong with the cases given as caused by the acute infectious diseases, and the remainder to the purulent rhinitis of children caused by various infections. In this list of unselected cases, 69 per cent. can be directly traced to the infectious diseases, thus placing the so-called catarrhal diseases of the upper air tract in an entirely new light, which leads to a reasonable hope of their successful treatment.

Some Indications for Gastro-Enterostomy.

In a paper by William J. Mayo, A. M., M. D., Surgeon to St. Mary's Hospital, of Rochester, Minn., read September 12, 1901, before the Mississippi Valley Medical Association, the writer based his paper on experience derived from sixty-four operations. In malignant disease gastro-enterostomy is indicated only if symptoms of obstruction are present. The mortality is high, 25 to 30 per cent. The writer lost four out of sixteen cases. The reason for this mortality lies in the bad condition of the patient. The early cases in good condition need radical treatment, and the latter operation (pylorotomy, etc.), on this account has an even lower mortality than gastro-enterostomy, which has no such limitations.

For open ulcer, gastro-enterostomy is of the greatest benefit if the ulcer is situated near the pylorus, and it usually is. Under such circumstances the stomach is of normal or increased size, the latter condition due either to obstruction or pyloric spasm. If the ulcer be distant from the pylorus, and the stomach contracted, gastro-enterostomy has less value, and the anastomotic opening may close, although the ulcer is usually healed before this takes place. The writer has had thirteen gastro-enterostomies for open intractable ulcer, with one death.

For benign obstruction without regard to origin, gastro-enterostomy is the operation of choice, the cure being immediate and lasting. Pyloroplasty enlarges the outlet; but if the stomach is very large and pouched, the degenerated muscle fibre may fail to elevate the food

to the pylorus, and relief is not always afforded. Gastro-enterostomy drains from the lowest point, and is superior in every way to the plastic operation. In thirty-five gastro-enterostomies of this class only one died.

Acute Intestinal Auto-Infection.

During the session of the Mississippi Valley Medical Association this week, Dr. John M. Batten, of Downingtown, Pa., read a paper on this subject, in which he reported the following case:

I was called to see professionally W. F. B., age, 56 years, on February 21, 1898. He had been suffering extreme prostration for several days, although neither his pulse nor his temperature was disturbed. I ordered him to bed, thinking that rest in bed might be beneficial to him. Within forty-eight hours patient took on his own responsibility a dose of calomel, which still further prostrated him, so he had to be helped to bed from the chamber. I noticed that he had had a grey, leaden complexion for several weeks previously to my being called in to see him professionally. That grey or cachectic appearance was present which is usually pathognomonic of intestinal auto-infection, although it may indicate malignant disease of the liver. In fact, it was my opinion it was malignant disease of the liver for several days after my first visit before we could make differential diagnosis of intestinal auto-infection from malignant disease of the liver, as there was either a thickening or a congestion of the lower part of the stomach and upper end of the duodenum. The patient was corpulent, weighing 220 pounds, and lost 40 pounds during the two months he was confined to bed. Patient was careless in securing a regularity in the movement of his bowels for some months preceding his ailment. The usual symptoms of the disease presented themselves—constipation, flatulency, borborygmus, urates, and the constituents of the bile in urine, fever, headache, unpleasant dreams, melancholia.

The treatment consisted of large daily doses of calomel till the bile flowed freely, then antiseptics internally, together with small doses of mercury till an amelioration of the disease was effected, then the natural mineral waters followed by vegetable tonics in connection with hot

baths. Strychnia was prescribed for weak heart, with which he suffered. Nitrate of silver and small doses of mercury for the congestion at the lower end of the stomach and upper end of duodenum, which was thought to exist. The diet was beef essence, but he did not exhibit any disposition to eat. His legs swelled in convalescence, and he suffered acute pain alternately in his knees. Patient in due time fully recovered his health after a protracted stay at Mount Clearness, Mich., whence he had gone as soon as he had convalesced sufficiently to enable him to do so.

Glycozone and Hydrozone for Chronic Gastritis.

Dr. Chas. J. Pollard, Princeton, Ky., reports (*New Eng. Med. Monthly*, August, 1901) the case of Mr. H., age 57, average lean build, languid, expressionless eyes, coated tongue, sallow skin, who came for treatment May 21, 1900. For the past four years he had had indigestion characterized by eructations of sour material, pain after eating, nervous depression, sleepless nights, constipation alternating with occasional diarrhoea, vomiting, loss of flesh, weak pulse, flabby muscles—in fact, a typical case of chronic gastric catarrh. Nux vomica and dilute muriatic acid were given after meals. In two weeks the patient reported some improvement. His medicines were repeated, and he was cautioned about diet.

He reported June 21st that he had a rheumatic attack the week before, but his stomach trouble was slowly improving. Due to the impossibility of securing systematic lavage, the patient was given hydrozone, $\bar{3}$ ij, with directions to add an ounce to a quart of sterilized water, and take half tumblerful half an hour before each meal. This was done to procure a clean surface for the oncoming meal, though for the first few days it produced some discomfort from the accumulation of gas. Immediately after meals he was to take a teaspoonful of glycozone in a wineglassful of water, and grains iij of nux vomica.

On July 16th patient could eat without dread of pain or discomfort, and his general improvement was very markedly improved. Prescription repeated.

On August 1, 1900, all signs of stomach lesion

had disappeared, and the patient claimed to be well for the first time in four and a half years. Treatment discontinued. Since then this patient has practically had no trouble.

Dr. Finlay Ellingwood says (in his excellent *Materia Medica, Therapeutics and Pharmacology*) that glycozone is one of the best manufactured articles of the present day in its action upon enfeebled, disordered stomachs, especially if there is ulceration or catarrhal gastritis. It is a most efficient preparation, and Dr. Pollard says he will use it freely in the future.

To Control High Temperatures.

Dr. C. C. Booth suggests the following method of reducing a high temperature: "The patient is stripped entirely of all clothing, placed upon rubber sheet and covered with one thickness of a piece of cheesecloth, two yards long and the usual width, one end having been so split that each leg will be covered separately. A nurse is directed to squeeze water about the temperature of the body from a sponge over the entire anterior surface of the body, and to wet the gauze freely as often as necessary to supply water for evaporation. All that is claimed for this method is that it is more convenient, more easily applied, less dangerous, cheaper and pleasanter to the patient than by any other method. The gauze is to be kept wet until the temperature is reduced to normal."—*Philadelphia Medical Journal*.

A New Method of Determining Approximately the Amount of Hydrochloric Acid in the Gastric Contents.

Max Einhorn, New York, has lately made use of a method (*Medical News*, July 20, 1901), which he believes to be equal in exactness to that of Guizburg. For this purpose he employs the solution of dimethylamidoazobenzol recommended by Toepfer, not making use of the solution directly, but of filter paper saturated with it. The procedure is as follows: A minute quantity of stomach contents is placed by means of a glass rod upon a strip of dimethylamidoazobenzol paper (one-half by eight centimeters).

If the paper turns red one drop of the contents is diluted with two drops of water in a small porcelain dish. A glass rod is dipped into the mixture, and the test paper again touched. If it still turns red, one or two more drops of water are added and the procedure repeated as before. This is done until only a slightly red or almost no red color is produced by the mixture on the test paper. In this way the amount of dilution required for a trace reaction with the test paper is determined; a dilution of from 3 to 6 would correspond to a normal, under 3 to subnormal acidity, and over 6 to hyperacidity. It is applicable where only small quantities of contents can be obtained, and where a quick test is desired.

The Consumptive Convicts of Texas

Are not only isolated so they may not infect others, but they receive treatment similar to that which the patients in sanatoriums for consumptives receive. On an isolated convict farm they receive an abundance of nourishing food, and though their life day and night may be said to be in the open air, they are required to work only so far as they may without danger of physical injury. Yet this farm has yielded to the State a net profit of \$2,500 in two years.—*The Sanitary Inspector*, June, 1901.

Hiccoughing.

Noir reports an immediate cure of an attack of hiccoughing by means of continuous traction on the tongue for one and a half minutes. The patient, a nervous child, had been hiccoughing almost uninterruptedly for six hours. She had failed to respond to the various remedies applied, and was greatly exhausted. There was no recurrence.—*Med. Times*.

To Get Rid of Mosquitoes, Etc.

Consul Plumacher, of Maracaibo, says that, from personal experience, no blood-sucking insect will abide where the castor-oil bean grows. He advised its growth, as far as possible, in all infested regions.—*Public Herald*, August, 1901.

Book Notices.

Etidorpha, or the End of Earth.—*The Strange History of a Mysterious Being, and the Account of a Remarkable Journey.* By JOHN URI LLOYD, Author of "Stringtown on the Pike." With Many Illustrations, by J. AUGUSTUS KNAPP. Eleventh Edition—Revised and Enlarged. New York: Dodd, Mead & Co. 1901. Cloth, 12mo. Pp., 375. Price, \$1.50. (For sale by all book dealers.)

This clever, original, and unique book, with its mystical plot and weird characters, presents a rare combination of science and romance. It is the strange history of a mysterious being, "I-am-the-Man," who makes a journey into the interior of the earth. In the descent of seven hundred miles, he loses voice, weight, breath, and heart-throbs, and yet continues on his journey until he reaches "the home of love"—the land of Etidorpha. Then rebounding he comes to the surface of the earth again to tell of the sciences of his journey. The romance assumes the centre of gravity to be about 300 miles beneath the earth's surface. In the journey downward, dens of drunkards, etc., are passed, and misery is depicted. The book awakens thought of the possibilities of the home of the soul. It is well written—dealing much in psychology and the natural sciences. It is probably too severe a romance for the strongly impressionable to read, but is full of suggestion for the colder, sterner classes of men. Each page entices the reader to next until the book is ended, and the mind is full of wonder.

Saunders' Medical Hand-Atlas.—*Atlas and Epitome of Obstetric Diagnosis and Treatment.* By Dr. O. SHAEFFER, of Heidelberg. From the Second Revised German Edition. Edited by J. CLIFTON EDGAR, M. D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 122 colored figures on 56 plates, 38 other illustrations, and 317 pages of text. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$3, net.

This book is one of *Saunders' Medical Hand Atlases*, which have become very popular, and deservedly so. It treats particularly of obstetric operations, and besides the wealth of beautiful lithographic illustrations, contains an extensive text of great value. The symptomatology and diagnosis are discussed with all necessary fulness, and the indications for treatment are definite and complete. In this new edition both text and illustrations have been subjected

to a thorough revision. Most of the colored plates are new, and illustrate the modern improvements in technique as well as a vast amount of new clinical material. Such an atlas as this, so well representing in colors and other illustrations the exact conditions and procedures—so true to life—is one that every obstetrician or general practitioner who has to attend to cases of labor should have for ready reference.

Manual of Diseases of the Nose and Throat. By CORNELIUS GODFREY COAKLEY, A. M., M. D., Clinical Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City, etc. Second Edition. Revised and Enlarged. Illustrated with 103 Engravings and 4 Colored Plates. Lea Brothers & Co., New York and Philadelphia. 1901. Small 8vo. Pp., 566. Cloth, \$2.10, net.

Beside careful revision and corrections of the text of the first edition, issued about 20 months previous to the present publication, some advisable additions have been made. The chief difference, however, in the two editions consists in the addition of a new chapter on the affections of the upper respiratory tract in infectious diseases, which is of special interest to general practitioners. The new colored plates and 11 additional illustrations have been inserted to better explain the text. This *Manual* possesses the qualities of a systematic treatise on the subject, beginning with the anatomy and physiology of the upper respiratory tract, and the methods of examination of the throat, nose, etc. Special attention is shown throughout to the practical sections, as those on the methods of examination, diagnosis, and treatment. In reference to the sections on treatment, the author has selected only those medicinal and operative measures which, in his judgment, are the best. Microscopic and bacteriological investigations are insisted on where the nature of the morbid process is in doubt. The chapter on *Therapeutics* considers—*first*, remedies for local treatment of diseases of the nose, pharynx and larynx; *second*, oily solutions for the nose and pharynx; *third*, medicaments to be locally applied to the nose, nasopharynx, and mouth on cotton wound applicators; *fourth*, ointments for use in the nose and about the face in connection with diseases of the nose and pharynx; *fifth*, powders for insufflation into the nose and pharynx; *sixth*, dry inhalations; *seventh*, tablets; *eighth*, aqueous sprays for use in the larynx; *ninth*, oily sprays for the larynx; *tenth*, medicated steam inhalations; *eleventh*, medicaments to be locally applied to

the larynx by means of cotton-wound applicators; and *twelfth*, insufflation of powders into the larynx. An excellent index is added.

Progressive Medicine, Vol. II, June, 1901.—*A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences.* Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 460 pages, with 81 engravings and one full-page plate. Lea Brothers & Co., Philadelphia and New York. Issued quarterly. Price, \$10 per year.

The subjects considered in this volume are: "Surgery of the Abdomen, including Hernia," by Dr. William B. Coley, Clinical Lecturer on Surgery in the College of Physicians and Surgeons, New York, going specially and thoroughly into the operative treatment of gastric ulcers and intestinal perforation, in which surgery has lately made such wonderful advances; "Gynecology," by Dr. John G. Clark, Professor of Gynecology in the University of Pennsylvania, in which section he discusses the parasitic origin of malignant growths, the utility of spinal anaesthesia in gynecological operations, and gives the result of his own epoch-making study of the circulation of the ovary—a discovery which has cleared up many of the problems of ovulation and menstruation; Dr. Alfred Stengel, Professor of Clinical Medicine in the University of Pennsylvania, discusses diseases of the blood and ductless glands, the hemorrhagic diseases, and metabolic diseases—including the gist of much original work on his own part. Dr. Edward Jackson, Emeritus Professor of Ophthalmology in the Philadelphia Polyclinic, presents an able resume of ophthalmologic advances during the year. Handsome illustrations elucidate the text throughout.

Editorial.

Tri-State Medical Society of Alabama, Georgia and Tennessee.

The thirteenth annual meeting of this Tri-State Medical Society will be held at the Tulane, Nashville, Tenn., Tuesday, Wednesday, and Thursday, October 8th, 9th, and 10th, 1901. Dr. M. C. Gannon, Nashville, is *President*; Dr.

Frank Trester Smith, Chattanooga, Tenn., is *Secretary*; Dr. George R. West, Chattanooga, Tenn., *Treasurer*. Drs. W. G. Bogart, of Chattanooga, Tenn.; Searle Harris, Union Springs, Ala., and Michael Hoke, Atlanta, Ga., are *Vice-Presidents*. Dr. S. S. Crockett, Nashville, is chairman of the Committee of Arrangements. Dr. R. R. Kime, Atlanta, Ga., is chairman of the Committee on Sociology.

An interesting feature of the meeting will be a series of papers on sociological questions. All physicians are invited to attend the meeting and take part in the discussion of papers and report of the Sociological Committee. The following papers have been promised:

1. *Syphilis in the Male as a Social Question—Its Prevention*, by Drs. Childs and Champion, Atlanta, Ga.
2. *Gonorrhœa in the Male as a Social Question—Its Prevention*, by W. Frank Glenn, M. D., Nashville, Tenn.
3. *Gonorrhœa in the Female—Its Results*, by W. G. Bogart, M. D., Chattanooga, Tenn.
4. *Syphilis in Relation to Diseases of the Eyes*, by Alexander W. Stirling, M. D., Atlanta, Ga.
5. *Tuberculosis—Its Prevalence and Prevention*, by J. D. Cromer, M. D., Atlanta, Ga.
6. *Suppression of Consumption*, by R. C. Bankston, M. D., Birmingham, Ala.
7. *Marriage and Heredity in Relation to Insanity*, by T. O. Rowell, M. D., Milledgeville, Ga.
8. *The Development and Control of Sexual Instinct*, by J. W. Macquillian, M. D., Chattanooga, Tenn.
9. *Legislation and its Limitations in the Prevention of Crime and Disease From a Legal Standpoint*, by Hon. John Bell Keeble, Nashville, Tenn.
10. *Heredity and Acquired Characteristics as Social Questions*, by R. R. Kime, M. D., Atlanta, Ga.
11. Report of Sociological Committee, R. R. Kime, Chairman.

Enno Sander Prize, 1901-1902, a Gold Medal, Valued at \$100, and \$100 in Cash.

The Enno Sander prize, 1901-1902, has been generously increased by its founder to consist of a gold medal, valued at \$100, and \$100 in cash. The subject for this year is, "*The Most Practical Organization for the Medical Depart-*

ment of the United States Army in Active Service." Competition is open to all persons eligible to membership in the Association of Military Surgeons of the United States. Essays must consist of not less than 10,000, nor more than 20,000 words, exclusive of tables. Each competitor will send three typewritten copies of his essay in a sealed envelope to the secretary of the Association (Dr. James Evelyn Pileher, Carlisle, Pa.) on or before February 28, 1902.

The Virginia Press Association

Held a most enjoyable and profitable annual meeting at Luray, Va., during July, and adopted an omnibus resolution of thanks. The Mansion Inn, the Hotel Laurence, and the Hotel Provence are especially mentioned because of their hospitality and courtesy; to Mr. T. C. Northcott, proprietor of Linair Sanitarium, for hospitality, etc., in showing the Association through his superb institution, and for his entertainment at the banquet; to Mr. Zerkel, proprietor of Luray Caverns; to the citizens of Luray for their uniform courtesy and kindness, etc. Mr. J. L. Hart, Farmville, Va., is secretary of the Association.

The Medical Society of Virginia

Will hold its thirty-second annual session in Lynchburg, Va., beginning Tuesday night, November 5, 1901, and will probably remain in session till November 8th. The preliminary circular announcement has been issued. The regular announcement, giving titles of papers, etc., will be issued about October 5th. It is gratifying to note that an unusually large number of doctors are sending in their applications for membership. The Society has on its roll of Fellows about one thousand names. It is hoped that this list will be much enlarged by the time of the meeting. Every regular doctor should be a member.

Testing Dr. Koch's New Theory.

It has recently been announced that Mr. L. L. Monson, State Dairy Commissioner for Colorado, offers himself as a subject for a thorough test as to whether or not animal tuberculosis can be transmitted to human beings. Mr. Monson is a strong advocate of Dr. Koch's theory, and is willing to make the test, provided a suitable annuity for his family is assured in case of fatal results. His faith is greater than ours.

The Attempted Assassination of President McKinley

Was such a shock and outrage upon the public mind and sentiment that the hanging of the would-be assassin could not satisfy the demand. The breathless suspense of anxiety about the President's recovery is becoming abated by the reports that are issued from his bedside. The American nation is to be congratulated that the wounded President fell into the surgical hands of those so well skilled in the art of surgery—recognized the world over as eminent surgical authorities. There are none better in the surgical world than Drs. Roswell Park and Ed. Mann. It was fortunate for the assassin—however unfortunate for the nation—that the crime occurred in New York State, where the laws, it would appear, are much behind the times with reference to the protection afforded openly-avowed murderers. It is scarcely probable that the President will be allowed to return to his official duties for many weeks—even though no further untoward manifestations result from his wounds.

Dr. L. S. Foster, Superintendent of the Eastern (Va.) State Hospital, Williamsburg, Va.,

Was the victim of a cowardly assault by a discharged private attendant, while standing in the depot at Williamsburg, on the morning of August 28th. Dr. Foster's first knowledge of the presence of his assailant, who was a much larger man, was when he received a blow on the back of his head. The Doctor was then seized and assaulted from the rear. Dr. Foster is an excellent man, and a most worthy State medical officer, and has many friends. Those in a position to know declare that in the treatment of his attendants he has been kind and courteous, and that his administration as superintendent has always been in the interest of the patients and the institution.

We trust that the punishment meted out to the assailant, who was arrested, and later on bailed, will be a lesson, not only to himself, but also to others who would pursue such methods for revenge.

The Medical Society of the Missouri Valley

Will hold its fourteenth annual meeting at St. Joseph, Mo., September 19th, and at Eureka Springs, Ark., September 20, 1901. This

is a new idea—holding a session in two different cities in two different States on succeeding days. A pleasant trip is promised all who may attend. Dr. V. L. Treyner, Council Bluffs, Iowa, President; Dr. Charles Wood Fassett, St. Joseph, Mo., Secretary. It may be depended on that whatever Dr. Fassett has a hand in arranging will be a success.

The Executive Ability of the Doctor of Medicine

Is unjustly questioned by the *Medico-Legal Journal*. Referring to the membership of the Lunacy Commission of the State of New York:

"There is no objection, it patronizingly says, to having a physician on the Board, but he should not be at the head of it. The education of our physicians is such as not to fit them for the discharge of offices requiring great executive ability. They are contracted rather than expanded by their peculiar education."

This is absolutely absurd. What sort of medical men has Mr. Clark Bell, the editor thereof, come in contact with?

The strenuous and engrossing life of the all-around general practitioner often makes such exacting demands on his time through the necessary work and study, in the upbuilding of his period of his professional life as to compel him to refrain largely from public affairs in the United States, and this had led laymen to misjudge the medical executive capacity. "An examination of the facts," says one who knows the doctor's capacity better, "shows" (and this has been our own observation), "that physicians as a class exhibit remarkable executive ability when placed in positions of responsibility." Compare the administration of hospitals and charitable institutions generally that are in the hands of physicians and those which are governed by laymen. There is scarcely a hospital in the country that is under political control which does not compare very unfavorably with the same institutions under the care of medical men. The vast public health service in the management of epidemics, quarantine, and other questions, presents problems requiring the highest administrative ability for their solution. We appeal confidently to the record of our profession in administrative positions. We believe that it will show a higher record of successes and fewer failures than that of any other class. The record of General Leonard Wood in the government of Cuba is an instance strikingly in

point. He has increased the efficiency of the public school system tenfold, has added thousands of miles of new road, has suppressed brigandage, has opened four great orphanages, and provided every city of any importance with a public hospital, and all this without increasing the public debt of an already overburdened community.

In this record of Dr. Wood we see the value of a medical training in an executive position. "A well-educated medical man must be well grounded in the sciences." *Medicine*, from which we quote, states the truth further, that a medical man "must be grounded in the sciences," "understand the body's physical needs and psychological states," and "underlying sociological factors which exert important influence on affairs of state," etc.

The trouble with medical men is that they do not plan the division of their time so as to mingle with down-town business men, and do not come enough in contact with the world they live in outside of the sick-room and office and their exclusive medical sphere of influence and action.

The result is they are side-tracked and shelved in this country, and men of less knowledge, ability, and general fitness take their legitimate places to declaim the incompetency of doctors for executive functions and proclaim the superiority of inferior lawyers and laymen. In no respect does the education of physicians unfit them for the discharge of offices requiring great executive ability, any more than lawyers or others not specially trained in lines of public service.

A doctor of medicine ought to make as good a President as a man from any other calling, law not excepted, and as good a man in the President's Cabinet as any other, and better than most, because the range of the rightly-educated medical man's knowledge is greater in all that pertains to the welfare of a people. Fortunately the Governor of New York has not taken the view of the *Medico-Legal Journal*.—*Alien. and Neurol.*, July, 1901.

Professional Representation

In the President's Cabinet is certainly a pressing necessity for the perfection of the government of this grand and rapidly-growing country, with its vast sanitary interests of many millions of people, says the *Alienist and Neurologist*.

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Original Communications.

CASE OF MOVABLE LIVER—HEPATOPEXY.*

By J. H. CARSTEN, M. D., Detroit, Mich.

As there are but few cases of movable or floating liver recorded, I thought it might be interesting to report a case. My case is as follows:

Mrs. R., Elkhart, Ind., and a patient of Dr. Mast, aged 48, passed the menopause; married a second time, but never had children. She is a hard working woman, weighs about 220 pounds, and never had been seriously ill, but has had the usual symptoms of the menopause well marked. During the last year she had been troubled with pain in the region of the liver, extending down to the pelvis, a sensation of fullness and distress, sometimes was obliged to keep in bed for a half day to two days, occasionally she was jaundiced for a few days. All symptoms indicated some diseased condition of the liver, but no symptoms of gall stones, no severe colic, just a feeling of fullness and distress. Her bowels were inclined to be constipated, her digestion was good, although she complained a good deal of gas. The nervous symptoms were also well marked with hypochondriasis, a feeling of despondency, as we so often find in disturbances of the digestive system.

Examination.—Stout, heavy woman, where it is difficult to make any positive diagnosis of abdominal trouble. Percussion on the right side down to the pelvis indicated a tumor, or solid mass, the character of which could not be made out, but it might have been an enlarged liver, tumor of the kidney, an ovarian tumor developed in that direction, or possibly a long pedicled fibroid. It might also be a malignant growth, although the general appearance of the patient would discredit such condition. Besides, it

might be one of those very rare tumors sometimes found, such as a hydatid or a cyst of some other organ attached to the right side.

The growth did not seem movable, and I did not pass an opinion on the character of it, but suggested an exploratory operation, and agreed to do whatever was indicated. She was prepared and operated upon April 24, 1900. An incision made at the outer edge of the rectus two inches below the ribs and downward for two and a half inches. After cutting a thick layer of fat and opening the peritoneum, I found that the enlargement was the liver, the right lobe being very much enlarged and hanging down to the brim of the pelvis. It could be moved and easily replaced in its normal position and then projecting about two inches below the ribs. There were no gall stones, and all other abdominal organs seemed normal.

The only thing to do seemed to me was to fix the liver in its normal place as near as possible. I therefore scraped as thoroughly as I could the anterior side of the liver and the anterior wall of the peritoneum, so as to get it thoroughly denuded of epithelium, and allow adhesions to take place. I then brought the raw surfaces together, took hold of the coronary ligament, and brought it forward and stitched it to the upper angle of the wound. The patient made an uninterrupted recovery.

ANCHYLOSTOMUM DUODENALE IN VIRGINIA.

By WM. B. GRAY, M. D., Richmond, Va.,

Ex-President Virginia Microscopical Society; Ex-President Richmond Medical and Surgical Society, etc.

On January 21, 1898, I was called to see Miss E. M., aged twenty-five years. She was very anæmic, pale, nervous, had no appetite, though

* Read before the Miss. Val. Med. Soc., Put-in-Bay, O., September 12, 1901.

she was extremely hungry. Her tongue and lips were bloodless in appearance; her ankles œdematous, and she complained of pain in her back and right side of the abdomen, accompanied by a dreadful feeling of depression, nervousness and great weakness. Her stools were filled with great quantities of mucus, and while at stool she often had spells of syncope.

Thinking I had a case of dreadful anæmia, I treated her with iron, arsenic, etc. She did not improve. Hunger increased with loathing of food, and nausea at the sight of it.

One morning I was hastily summoned to see her. She had fainted while at stool, and was with difficulty removed to her apartments. Upon my arrival I at once examined the closet, and found in the bowl a gill or more of tenacious mucus. Taking a sample of this, I hastened to my office to make a microscopic examination of it, assisted by my nephew, Dr. A. L. Gray, Professor of Physiology in University College of Medicine, Richmond. We found at once a great number of ova and several of the peculiar parasites which neither of us had ever seen before, though we quickly informed ourselves from Simon's *Clinical Diagnosis*. For the first time my patient's case was perfectly clear, and I directed the treatment accordingly. She was required to take nothing but liquid food for 24 hours. On the next morning she took the following mixture (which is original, I believe, with Dr. Hobart Amory Hare, for tænia solium):

℞ Oleoresin Aspidii	} —	a a min. x 1 v.
Tinct. Vanilla	} a a	
P. Gum. acac.		ʒ ss.
Aq. dist.		ʒ j.

MS.—Take entire mixture, and follow it in two hours with ʒ j. magnesia sulph. in a glass of water.

The medicine acted promptly and copiously, bringing away great numbers of ova and the peculiar parasites. My patient made a prompt and untoward recovery, and neither ova nor parasite were found afterwards. She was, however, sent for one season to the Rawley Springs, Va.

So soon as the nature of Miss E.'s case was disclosed, her sister, Miss H., aged 27 years, said she had the same sensible symptoms Miss E. had suffered, and applied for treatment. Her statement was verified by careful examination, and she was given the same treatment.

The parasite was never discovered, nor the ova in this case. Simon says this is often the case. She was, however, subjected to the same treatment, and has suffered no further trouble.

Remarks.—In 1895 both these young ladies visited a popular summer resort on the Virginia coast. They occupied a cottage. The cisterns were dry. The water they used for drinking purposes was purchased from parties bringing the same for sale to the guests. It was brought in barrels and sold from them.

In Italy, Germany, Switzerland, Belgium, Egypt, and the West Indies, anchylostomiasis is attributed to the drinking of putrid water. Though both of my patients are native Americans, why may not putrid water have caused their trouble?

I acknowledge my indebtedness to Dr. A. L. Gray for his assistance in the microscopy, and to the Philadelphia Medical Journal for their kindness in furnishing me such literature as they had at hand on the subject.

I have intentionally delayed publishing these cases that I might see their cure was complete. Both patients have been and are well at this date, September 12, 1901.

901 E. Clay.

CLINICAL NOTES ON GLEET.*

By A. RAVOGLI, M. D., Cincinnati, Ohio.

Professor of Dermatology and Syphilography in the Medical Department of the Cincinnati University, Etc.

The essayist remarked that although the term gleet was popularly used to signify a scanty discharge from the urethra, yet it could be retained in the nosology of the urethral diseases to show that transitional stage between chronic gonorrhœa and the formation of a stricture. From the infection by the gonococcus to the formation of stricture is nothing else than a continuation of disorders and of alterations of the tissues, started first by the presence of the infectious germ and then continued in the cells of the tissues as the result of their presence and of the derangement of nutrition they have caused.

The gonococci may remain dormant for a long time without showing their presence. In-

* Original abstract of a paper read at the meeting of the Mississippi Valley Medical Association, held at Put-in-Bay, O., September, 1901.

deed, there are so many glands, Littré Morgagni's crypts, Cowper glands, the prostatic ducts and the seminal vesicles, which offer abodes to the gonococci. The scanty secretion and the shreds may be often examined without disclosing the presence of gonococci, which are hidden in the submucous tissues and in the glands. They may at any time be awakened from their latency by a new hyperæmia of the mucous membrane of the genitals, caused either by excess in alcoholic drinks or by over-indulgence in sexual relations. In these cases we see a fresh gonorrhœal outbreak, which simulates a new invasion, but it is only an instance of autoinfection.

In my cases, however, the gonococcus is dead, so that after several years' standing no acute reproduction of gonorrhœa has occurred, and the discharge has not shown the presence of gonococci. Most of the patients are married men, and their wives have never shown signs of gonorrhœal infection, nor have they complained of any trouble of the sexual sphere; they have given birth to healthy children, thus showing no sterility, which so often is the result of chronic gonorrhœa. In a word, they have been exempt from any infection.

In some cases the provocation test has been tried with a solution of nitrate of silver, and in the secretion resulting from the chemical irritation no gonococci could be found, dispelling any idea of the presence of an active infection.

The manifestations of the gleet are limited to a scanty discharge of a whitish fluid, which appears in the morning as the *goutte matinale*. In some cases the secretion is so scanty that the fluid at the meatus gets dry and closes the lips together as a dry scale. The patient has no trouble in retaining the urine, and he urinates normally every four or five hours. In the urine we constantly find shreds, which vary in appearance. In some cases the urine is clear, containing short, small shreds, which are scattered throughout the whole quantity of urine. In a few minutes the shreds settle to the bottom, leaving the urine perfectly clear. In other cases the urine is clear, but in the middle of the glass or at the top a conglomeration of shreds is found like a little ball. These are floating and are easily separated in the form of thick, long shreds. In other cases, the urine is somewhat cloudy, showing a kind of turbidity that destroys the characteristic transparency. Sub-

jective symptoms are very few. Only seldom had the essayist known patients to complain of a burning sensation in the act of micturition, or more often at the end of micturition, which is the result of a prostatic complication. Some patients complain of a painful sensation at the time of ejaculation.

Some patients complain of rheumatoid pains affecting the lumbar or the gluteal region, extending to the thighs. These pains are not steady, but come and go. Often they complain of being tired, feeling a sense of fatigue. Often this condition is so accentuated as to produce a marked nervous hyperexcitability extending over different nerve territories to constitute what we call sexual neurasthenia. In fact, the posterior urethra is supplied with large numbers of sensitive nerves, regulating the acts of micturition and of coitus, and it is easily understood that a continued irritation in this delicate organ may be the source of nervous phenomena. The inflammation produced in this region by the urine and by the secretion which is formed there causes an irritation, and in consequence nocturnal emissions, which make the patient weak and nervous. The patient loses flesh, becomes forgetful, and cannot attend to his occupation. He loses sleep, and is greatly depressed mentally. In some cases erections become difficult or incomplete, and ejaculation is retarded, tending toward impotence. In other cases the ejaculation is so quick that the individual scarcely has time to approach the woman. In my experience, I can say that in a great many cases of neurasthenia, where the patient has never spoken of any genito-urinary trouble, the introduction of a sound has revealed the origin of his neurasthenia. In some cases the symptoms subside under treatment of the urethra, to reappear later, when the treatment has been neglected.

The morning drop must be carefully examined. In the microscopical examination of the secretion we do not find, however, an explanation of the stubbornness of the affection. In the secretion we find epithelial cells of the pavimental kind, mucous filaments in the form of mucin, and small mononuclear leucocytes. Only rarely some polynuclear cells can be found, and the field of the glass is covered by a quantity of amorphous granules of uric salts, which are arranged in small concretions. In regard to micro-organisms, at times there are only a few in number, and at other times they are abundant.

They are of different length and diameter, in the form of coeci; many have not yet been classified, and very likely belong to the safrophytes.

The most important micro-organism, the gonococcus Neisser, at this time, in a large number of cases, has not been found. The shreds are made up of polynuclear leucocytes and a few epithelial cells. The condition of the prostate must be taken into consideration, and Finger believes it to be responsible for the stubbornness of the discharge. Indeed, this organ, which is formed by the conglomeration of many glands, can easily be the abode of infectious germs. In any case of old gonorrhœa it is necessary to press the prostate with the finger and obtain some of the prostatic secretion for microscopic examination.

In many of the cases the essayist has found the prostate but little affected. In only a few cases a little fluid has been obtained by pressure on the gland, and the examination of the secretion did not reveal anything abnormal. In spite of the negative result of the examination, the urethral drop must be regarded always with suspicion. Gleet has its seat in the posterior urethra, and continues for a long period, which includes years of a chronic hyperplastic inflammation, which will end with sclerosis and shrinking of the tissues, forming the so-called stricture.

The membranous portion of the urethra is lined with many glands, and they are paved with epithelial cells of different types, and all offer hiding places for the development of gonocœci. In cases of old, chronic gonorrhœa, we can look upon these glands as foci of infection, which only with difficulty can be destroyed. The difficulty of reaching the germs is also increased by the continuous epithelial desquamation of the excretory ducts of the glands and utricles shown by the presence of the shreds, also called comma-like filaments, which are modelled on the excretory ducts of these glands. These accumulations of mucous in the ducts of the glands prevent the access of the remedies to their interior, and so makes the gleet more persistent.

For the above-mentioned reasons the digital exploration of the prostatic gland is necessary in every case of gleet, in order to find out its shape, volume, inequalities, tender spots, etc., so as to determine the presence of chronic prostatitis.

The introduction of a metallic sound is necessary to complete the examination. I introduce a Benique sound from 21 to 24 for an ordinary

examination. This is inserted without difficulty, showing that the calibre of the urethra is not affected. When the sound is removed a little drop of milky fluid comes out of the meatus. This fluid under the microscope shows many small leucocytes, some large epithelial cells, and some amorphous uric salts, indicating the presence of altered urine which has remained in the urethra for some time. The little drop of urine left in the canal undergoes chemical changes, causing irritation. Indeed, when a little quantity of urine remains to moisten the mucous membrane it is natural that this irritant shall produce a maceration of the epithelium and an irritation of the papillæ and of the glands. This condition is easily demonstrated by the use of the urethroscope, which shows the mucosa of the urethra red, with small papillary granulations. This condition is not the result of a stricture, but it will become a stricture if it is not treated. It is the result of the chronic gonorrhœal inflammation, which produces a hypertrophy of the connective tissues and changes in the epithelial cells. The various alterations which occur in the inflamed cells modify their volume, form, mutual relations and functional activity. In acute cases degeneration of the cells is present, but in chronic gonorrhœal inflammation a proliferative reaction predominates, and the cells grow and become hypertrophied. These changes of volume of the cells modify the normal elasticity and disposition of the tissues, causing functional disturbance. The urethra is not a simple tube to allow the passage of the urine, but with its two layers of non-striated muscles and with the help of the compressor it normally squeezes out every drop of urine from the canal. When a part of the mucous membrane of the urethra is rendered hard and inelastic from infiltration and hypertrophy of its histological elements, this place will be a hindrance to the muscular layers, and also to the compressor, in the attempt to squeeze out all of the urine. In consequence, a small quantity of urine will remain beyond and about the infiltrated point, which is collected in a drop on the posterior surface of the urethral mucosa.

At this point it is clear that the presence of the gonococcus is no more necessary to maintain the inflammatory process, but the presence of the altered urine is sufficient to explain the obstinacy of the chronic inflammation.

I have already stated that for gleet I understand that period of chronic inflammatory pro-

cess of the urethra, commencing at the cessation of the gonorrhoeal symptoms and ending at the formation of the urethral stricture. The cause is the infiltration and the inelasticity of the tissues and glands of the mucosa of the urethra limited to circumscribed patches, which prevents the perfect voiding of the urine.

Here the essayist reviewed the pathological alterations which take place on the mucous membrane of the urethra from the first penetration of the gonococci. He stated that the gonococcus is a microbe of the mucous membranes, affecting in preference the cylindrical epithelium. It may penetrate other kinds of epithelial cells, and sometimes reach the connective tissue, but only to a slight degree. The gonococcus loses some of its virulence by repeated reproductions on the same ground, and provokes only slow reactions of a chronic nature. In this way it can remain for a long time on the mucous membrane of the urethra or its glands in a latent condition. The pathological changes on the mucous membrane are better appreciated by the use of the urethroscope. In this examination the delicate normal disc will be found protruding in one of its segments on account of its infiltrated condition, sometimes showing small whitish patches, like epithelial cicatrices, at times small red nodules due to the occlusion and cystic transformation of the Morgagni's lacunae and the Littre glands.

Under the microscope it is clear that the process runs its course in the subepithelial connective tissue in the form of small cell infiltration and a connective tissue proliferation. The infiltration of this layer causes the epithelium to suffer in its nutrition and to undergo interesting changes, which in the beginning are limited to proliferation and desquamation of the cylindrical epithelium, and later to the conversion of the cylindrical epithelium into pavement epithelium. The infiltration of mononuclear cells in the submucous layer is so abundant that in some cases it forms a newly-formed tissue, with new-formed capillaries. In ordinary cases the infiltration is discrete, and is limited to patches of different size surrounding the lacunae and the glands.

When gleet has lasted for a long time and it is complicated with chronic prostatitis, with well-directed treatment a great deal of good can be done, but in some cases complete recovery is difficult to obtain. The treatment of gleet cannot be carried on with only one method, but requires good judgment in the selection of the

methods demanded in the different cases. From the internal remedies the essayist does not expect much benefit. Balsams may diminish suppuration and clear somewhat a cloudy urine, but their real benefit is rather questionable. But it is not so of the urinary antiseptics, which he considers as adjuvants in the treatment. Salicylates, and especially urothopine, have a germicidal and antiseptic action.

The treatment to be most relied upon is the local applications. In the first place, the posterior urethra must be washed, which is done by means of lavages. These can be applied without catheter with the Janet irrigator, or by means of a recurrent catheter, the essayist favoring his own silver catheter. The fluid to be used is a solution of permanganate of potash in the strength of from 1 to 5,000 to 1 to 2,000.

In cases where infiltration is already formed, stronger solutions are required, which are to be used on the affected place by means of instillations. With a small catheter adjusted to a graduated syringe a solution of nitrate of silver from 1-2 to 2 per cent. is instilled in a few drops into the posterior urethra. The essayist prefers the use of 1 per cent. to 2 per cent. of protargol, from which he never had the inconvenience which sometimes is determined by the solution of the silver nitrate.

He recommended the use of the urethroscope and the application of the caustic solutions through this instrument, in order to limit its action to the affected part. He prefers this way of applying caustic solution to the instillations, from which irritation and tenesmus often result.

He discusses the mechanical treatment, which consists of pressure applied on the infiltrated patches by means of sounds. The sounds are steel, applied for the purpose of dilatation together with the pressure. He considered the fenestrated sounds, which are constructed with a view of associating to the pressure of the sound the action of a remedy in the form of salve. He praised also the sounds constructed to carry to the infiltrated places an electric current for the purpose of dissolving the infiltration by electrolytic action. The sound is covered with rubber, the tip only being metallic; the other extremity is placed in contact with the negative pole, and the positive is given into the hand of the patient.

The dilators are to be applied in case of deep lesions; with them a dilatation has to be accomplished gradually and gently. The dilators of Otis, Oberlander, and especially of Kohlman,

are recommended to be used always after rendering the urethra anæsthetic by an injection of eucaine. The instrument must be used gradually without injuring the urethra. With the dilator longitudinal fissures a few millimetres in length are produced all around the infiltrated surface. These tears occur only in the infiltrated mucosa of the urethra, and in a few days are completely healed up, leaving no trace. From these cicatricial points the process of re-absorption takes place, which will restore the mucous membrane of the urethra to the normal condition.

To terminate the treatment, the essayist recommends the old sounds, either those with Thompson's short curve or those with Benegue's curve. The sound is left in the urethra for five minutes, and then withdrawn. It is applied at first once a week, then once in two weeks, and finally once a month. The pressure on the tissues made by the metallic sound causes the absorption of the remnant of the infiltrated elements in the mucous membrane, maintains unaltered the diameter of the calibre of the urethra, and prevents the little drop of urine from remaining in the affected places, finishing the treatment of the dreaded gleet.

5 Garfield Place.

(1) STRABISMUS—(2) EXPLANATION OF CHOKED DISC, AND CHANGES IN THE OPTIC NERVES CONSEQUENT UPON THE EXISTENCE OF BRAIN TUMORS.

ABSTRACTS FROM CONTRIBUTIONS TO THE CURRENT FRENCH OPHTHALMOLOGICAL PERIODICALS,* AND DESULTORY COMMENTS UPON THE SAME.

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Operations for Strabismus.

Were I asked, what operation of ophthalmic surgery, when properly performed, reaching unto all the possibilities of the case, I consider

* 1 — *a. Strabismus, Operation for* (Panas); *b. Operation for Strabismus* (Landolt); *c. Clinical Researches upon Strabismus of the New-born* (Serni)

2. — *a. Explanation of Choked Disc, and Changes in the Optic Nerves Consequent upon Existence of Brain Tumors* (Sourdille)

the most difficult, and, at the same time, the one showing the broadest knowledge of ophthalmology, I should answer, *the operation for strabismus*. One could imagine that, after all these years, some definite method would have been decided upon, and that there might be at least one fact upon which all of the teachers on this field were agreed; yet such is not the case. The masters of the science continue to politely "pooh-pooh" as unworthy of their consideration all methods except "this latest method of mine."

There must be some reason for these diversities of opinion—these seemingly honest, yet so different, and, at times, diametrically opposite interpretations of the same fact. This strife in all matters, great and small, is being waged over the whole field of medicine. Good is evolved as the result; yet as the horizon of the possible for all widens, that of the possible for the individual grows ever less.

Professor Panas and Dr. Landolt are co-editors of the *Archives d' Ophthalmologie*. Panas and Landolt are names than which none stand higher in modern ophthalmology.

In the June number of their periodical, Professor Panas has an article entitled, "*Nouvelle Statistique de l' Operation du Strabisme Concomitant*." In the July number, Dr. Landolt writes on "*La Technique de l' Avancement Musculaire*."

Dr. Landolt, as the result of his researches, has demonstrated to his own satisfaction that, in concomitant strabismus, there exists, *for both eyes*, a symmetrical limitation of movement—temporal in convergent strabismus; nasal in divergent; that concomitant strabismus is a binocular affection; that the antagonists of the *contracted* muscles in convergent strabismus—which is essentially a spastic strabismus—being little exercised, are weakened; that the same in a reverse sense holds true for divergent strabismus. Dr. Landolt does not consider the weakened state of the antagonists as the cause, but as the result of the strabismus. Thus he attacks both eyes, advocating the advancement of the weakened muscles, and not the putting back of the insertions of the more powerful until their strength equals that of their weakened antagonists. Dr. Landolt claims for this method of operating that he increases, in its own direction, the arc of excursion of the muscle thus advanced, without limiting it in the opposite direction—*i. e.*, augmentation of the positive part of the amplitude of convergence, without diminishing

the divergence; consequently there is no risk of over-correction. Dr. Landolt has given elsewhere his reasons—*anatomical, physiological, and pathological*—for advocating muscular advancement, and for condemning the old method of tenotomy with “putting back” of the stronger muscles.

The main object of Dr. Landolt’s article—the technique of the operation—will receive our attention later on. We wish here to compare these teachings with those of Professor Panas, and which appear in the same periodical one month earlier.

Professor Panas refers to his report of the results obtained “*par notre methode*” in 220 cases—210 convergent strabismus, 10 divergent. He affirms that, of the former, 180 were “immediately and completely” relieved; the remaining 30, where there was present at the time of dismissal, hypo-correction, or a slight hyper-correction, the strabismus must have disappeared, since not one of them has ever returned to his clinic. Of the 10 divergent cases, the putting back of the muscle was sufficient in 8, while in 2 capsular advancement of the interni had, in addition, to be resorted to. “*Le resultat fut egalement definitif et parfait.*” “*Parfait ?*” “*Est ce que vous savez ce que veut dire ce parfait ?* is the question I have oftentimes wished to ask another oculist who has seen these “resultats” through spectacles not those of the operator—so often, indeed, that the French “resultat parfait” has gotten in my mind to be different from the English perfect result.

Professor Panas then reports 68 additional cases operated upon by Dr. Ferrien. Of these, 58 were for convergent; 10 for divergent strabismus. Some tables are given which, at some points, are of interest. Nine cases of convergent strabismus were operated upon before the tenth year; 36 between the ages of eleven and twenty years. It would be of more interest to know the number between the tenth and sixteenth years. The angle of the strabismus varied from 18 degrees to 60 degrees. In speaking of the refraction of these cases, a note is made—one which gives a most unusual fact, or points to much carelessness in measuring the amblyopic eye. Of these 58 cases, only 5 showed any astigmatism. Had Dr. Ferrien noted that only 5 failed to have some astigmatism, his statement would probably have been nearer the truth. We shall refer to this later on.

Professor Panas states that the reason he does

not advise that children under seven years be operated upon is that “in many cases the degree of the strabismus lessens or disappears during the first years of life, as the result of the development of the cranium, and that the first seven years of life can be made use of to exercise the eyes, with the view of maintaining good vision in each.

Such statements as these bring every practical man to his feet to ask questions. Strabismus is oftentimes congenital, or develops during the early years of life as the result, partially at least, of an oblique chiefly compound hyperopic astigmatism—the two eyes being anisometropic. In some of the congenital cases, we should find, could we examine the orbit, one or more of the eye muscles imperfectly or wrongly developed. Where these congenital anomalies exist—whether of faulty muscular development or insertion, or where there is, for one eye, a high degree of compound hyperopic oblique astigmatism, no amount of training within the bounds of reason will ever develop, or, if developed, maintain first-class vision in the squinting eye. Its existence would be against nature. The patient is far better off for his amblyopia and his squint. No man who has not had under his constant care those unfortunate cases where there existed the necessity for binocular vision in the presence of a faulty muscular equilibrium and a high degree of anisometropia, one eye being obliquely astigmatic, can appreciate what suffering it means, if at the same time, inclination or surroundings make for the patient a life behind a pen point or over a book a necessity. I have in my professional life seen more than one such case where, were I in the patient’s place, I would have had the offending eye removed, or, by operation, prevented from taking part in the act of vision, physiologically healthy though it was.

It is not well to operate for strabismus in young children, but there are better reasons therefor than that sometimes the strabismus disappears as the child grows older. Professor Panas advises that the operation be not deferred later than the ninth year. He only rarely resorts to prolonged atropinization, being convinced that spasm of the accommodation has nothing to do with the production of strabismus at this early age. This, however, is an open question, and one the truth of which not every observer will admit. That the prolonged use of atropia after the strabismus is a *fait accompli*

very rarely proves to be of any value is true. Of the 58 cases, 16 were confined to one or the other eye; 40 were relatively fixed, only 1 clearly and regularly alternating.

Professor Panas' method consists in elongation of the deviating muscles with their simultaneous bilateral section, "operative acts whose union assures the success of the strabotomy." For children under ten, Professor Panas advises double tenotomy without elongation. Between ten and twenty, the two operative acts should be combined. Between twenty-one and forty it often happens that bilateral advancement of the opposing muscles has, in addition, to be resorted to. In other words, for so we are forced to read between the lines, when the lines tell us that of 7 cases between twenty-one and forty, where the combined elongation and tenotomy were done, only 2 were "parfaites," in 3 hypocorrection existed fifteen months later, while in 2 advancement in addition had to be resorted to; that of 36 cases, between ten and twenty-five, 24 were operated upon by simple tenotomy, with 11 "corrections parfaites." Of the other 12, with elongation, 3 cases of hyper-correction resulted, 1 of hypocorrection, 8 "parfaites"—in other words, we read between the lines that the method of Professor Panas leaves much to be desired for accuracy, even where he is satisfied with a "parfait," which is not actually disfiguring.

Further, Professor Panas concludes: "Every one knows how much the operative correction of concomitant divergent strabismus has up to this time left to be desired; failure, or, at best, partial success only being the rule, whether we put back the externi or do a muscular or capsular advancement of the interni. We are, however, able to guarantee in these cases far better results than anything heretofore given, if we do simultaneously a putting back of the externi and capsular or muscular advancement of the interni."

To the beginner, nothing could be more confusing than this article by Professor Panas, which advises about as follows: In strabismus, wait until the ninth year before operating; then, try a double tenotomy or a double tenotomy with elongation, or a double tenotomy with elongation and a double muscular or capsular advancement, and you will get in 190 out of 220 cases a result "parfait," and you can feel assured that in the other 30 cases the result has been equally

"parfait," because no one of them ever returned for further treatment!

"Un resultat parfait," "a perfect result," must mean such a correction of the strabismus as relieves the deformity to a degree that either satisfies the patient, or that it is not markedly noticeable—it cannot mean that anything like parallelism of the axes for all lateral movements have been obtained; in other words, if examined according to our American standards, these "resultats parfaits" would show high degrees of ex—, es—, or hyperphoria, and be thus far from our standards of perfect. Dr. Landolt advises bilateral advancement. Professor Panas bilateral elongation, with simultaneous tenotomy. Dr. Landolt condemns tenotomy in concomitant squint.

Such articles, when read together, leave the ophthalmologist whose clinical experience is small very much at sea as to what he is to believe to be the best method. From them he draws the deduction that there is little unanimity as to the correct method of operating for squint; that often squint represents such imperfections of the ocular musculature that even the authorities are satisfied with a very imperfect "parfait" as the result of their work. There is, however, no such thing as a perfect result, unless the two eyes after operation show neither exophoria, nor esophoria, nor hyperphoria; in other words, are up to the standard set by Stevens. A perfect within the limits set by the case is a perfection whose degree varies for each squinting eye.

It would be vastly interesting could Dr. Landolt persuade Professor Panas that his (Dr. Landolt's) method was the correct one; or, if Professor Panas could bring Dr. Landolt over to his (Professor Panas') views of the proper operation for squint. As it is, their readers must choose for themselves which master they will follow, and be condemned as they advance with the one to look inquiringly over the shoulder back to the other. Nothing except much experience with all the various methods suggested in all of possible variations of squint will allow an ophthalmologist to have an opinion, even in a measure satisfactory to himself, as to the best method of operating for the individual case of strabismus.

Strabismus varies from a degree so slight that it can be demonstrated to exist at all only with prisms and a red glass, all through the easily measurable phorias, through to the degree when

it is demonstrable with a red glass alone; then becoming visible, it may be present in any degree to the final, which is represented by a condition brought about by complete paralysis of a muscle or muscles. Each case of strabismus has a law unto itself, and offers for solution its own peculiar problems—problems set by the patient's age, health, nervous condition, position in society, mode of making a living, time at the doctor's and patient's disposal, object to be gained by operation, by the existence or absence or possibility or advisability of obtaining binocular single vision, by the refractive condition of each eye, by the relative strength of the other muscles, and by other conditions too numerous to mention here.

One would judge from the writings of some of the operators for strabismus that to obtain binocular single vision for all patients within the ordinary field of vision should be our aim. Under certain conditions, pretty well defined ones too, such an object, if attained, would leave the patient in a condition of such discomfort as he had never before experienced.

I had one case where there had existed, with a slight strabismus, the necessity for binocular single vision, one eye (the left) being highly hyperopic and astigmatic, the other (the right) being highly hyperopic with 2 degrees of oblique astigmatism in addition. An injury resulted in the absorption of the lens of the right eye in such a way that only a piece of loosely attached capsule hung before the pupil. Some years after the accident I offered to remove this piece of capsule and "restore the vision." The man, a printer by trade, declined with a positiveness which made me ask him why he preferred the eye to remain as it was. "Because I never had any peace with my head in my life until I lost the sight of my right eye. Since then I have never had any trouble with it. I only want my glass strengthened a little." He was wearing $+8D^s=+2D^c135^\circ$.

Nor is it necessary that the refractive state of the eye be either greatly away from the normal, or that there exist anisometropia, for the eyes to be the origin of a train of nervous troubles of the most varied kind. All that is needed is that there exists a necessity for binocular single vision and at the same time ocular conditions which render its accomplishment impossible save as the result of a severe and constant strain.

Mr. A., aged thirty-seven, had $+1\frac{1}{2}D^s=+\frac{1}{2}D^c90^\circ$ as his refraction for each eye. The

eyes showed an esophoria of 2.1-2 degrees, which reduced to 2 degrees when he was wearing a full correction. For months when I first saw him he had been suffering with severe headaches, from such confusion of ideas and shortness of memory that his physicians—and he had consulted several—had, after experimenting along various lines with internal medicines, advised him as a last resort to sell out his flourishing business and go into a sanitarium for an indefinite time, telling him at the same time that otherwise he would lose his mind. "But, Doctor," said Mr. A., "there is nothing the matter with my mind. I am sure it is my eyes, for any attempt to use them brings on such a sense of confusion in my brain that I cannot collect my thoughts." Mr. A. was wearing properly adjusted glasses. The esophoria for distance was 2 1-2 degrees. He had never had any diplopia. I watched Mr. A.'s case for some weeks, and finally cut all save the outermost fibres of both interni. The result was a correction of the esophoria and a disappearance of all the nervous symptoms.

To Dr. George Stevens belongs the honor of having turned the attention of the medical world to these ocular muscular reflexes. Unfortunately, neither he nor any of his followers have been able to draw sufficiently strict lines between the cases which can be helped as the result of tenotomies and those that cannot be; nor has Dr. Stevens, nor have his followers, been able to formulate rules by which with sufficient accuracy, any ex—, es—, or hypo-phoria can be turned into orthophoria. Some ophthalmologists will have nothing to do with the correction of the phorias; others have been willing to operate on any phoria greater than 1-2 degree, whereby bringing much discredit upon the whole system. The study of the reasons for the failures of tenotomies to correct these phorias had led to bringing into prominence the parts played by the superior and inferior recti and the obliques in their production. Thus the whole problem has been greatly complicated, and rightly so—for the truth of the matter has not yet been attained unto.

Two or three things, however, should be borne in mind, and they are these: Dr. George Stevens should not be deprived of the honor of having forcibly directed the attention of ophthalmology to the existence of these reflexes and their source, and this even though experience has shown that all that is claimed in his earlier writings cannot

be accomplished by following the directions therein given. Dr. Stevens himself acknowledges this by his persistent, although unsuccessful, efforts to remedy those defects by the aid of the revelations of the clinoscope. And, lastly, there is a certain proportion of these ocular reflexes which can be and should be fully remedied by following the teachings of Stevens.

The above remarks may be deemed out of place here, but they serve to show some of the phases presented by "latent" strabismus, to illustrate the remark with which this paper began. When we face the problem of manifest strabismus, other elements are added, and we see that still more of detail is necessary to complete the picture. Which is the better method of correcting a high degree of concomitant strabismus complicated by amblyopia, I will not undertake to say. My judgment, backed by a limited experience, leaves me to think Dr. Landolt's teachings are for very many reasons the better of the two. To tenotomy with elongation of the tendon there seem to me to be serious objections, and yet I must add that I have seen more than one case where double advancement proved to be insufficient to procure "une redressement complet," and I have been obliged to have recourse to tenotomy in addition. In all extreme cases of squint simple tenotomies or slight advancements are going to fail. Either or both must be bilateral and extensive.

The main object of Dr. Landolt's paper is to describe the technique of muscular advancement. There is nothing of especial interest in this description, save that the different steps are clearly described, making it possible for any operator to follow them without difficulty. The operation done, Dr. Landolt insists upon occlusion of both eyes, even when only one eye is operated upon. He wishes thus to favor primary union of the wound, and in the position left at the close of the operation. This occlusion of both eyes after squint operations is important and not a few failures are to be attributed to leaving the eyes free. Neglect binocular occlusion, says Dr. Landolt, and "we compromise the success of the most correctly performed operation." The dressings are changed daily, and in convergent strabismus atropia is instilled daily. The stitches are allowed to remain for five or six days. At the end of this time the dressings are removed, if the case was one of divergent strabismus; continued for two or three days longer, if one of convergent strabismus.

Dr. Landolt closes his paper with a few comments upon the value of the accommodation as a corrector of the tendencies to strabismus left after the operation. "The judicious use of mydriatics and of correcting lenses is of inestimable benefit as assistants to our operative work. Thus as long as there is a tendency to excessive convergence the suppression of the convergence will prevent the patient from falling again into his old habit. If, on the contrary, an over-correction is feared, suppress the use of the mydriatic and regulate the amount of the hyperopia corrected according to requirements. If latent divergence persists, we have only to abandon altogether the use of correcting lenses, and we will see how quickly convergence will return.

Reading again between the lines, we see clearly that Dr. Landolt admits that his method leaves a great deal to be desired so far as perfect results are concerned, and one may repeat here that no one method will serve for all varieties of squint. To operate correctly for this deformity, we are compelled to use Stevens' classification as our standard, and taking a multitude of facts into consideration, we are to use our judgment, and its value in turn will vary with our experience and our knowledge of the eye and of general medicine. We are to use our judgment as to how far each case can or should be made to conform to it.

Professor Panas refers in his paper to the observations of Dr. Serini made to decide the question *whether strabismus is ever congenital*. In the May number of the *Archives d' Ophthalmologie* Dr. Serini's article appears under the title, "Recherches cliniques sur le Strabisme des Nouveaux-nés. Le Strabisme fonctionnel congenital existe-il?"

Dr. Serini examined 136 infants less than fifteen days old, and found that 60, or nearly one half of them, squinted, the strabismus being always convergent, alternating and periodic. Of 120 children between the ages of fifteen days and six months, 35 squinted, the strabismus being as before. Thus the deviation so common during the first few days of life disappears with a certain per cent. of the cases as the children grow older. With some, however, it persists, and we have strabismus that is clearly congenital. The first-born are much more subject to this deformity than the later children. Thus, of 61 new-born children of primipare, 40 squinted; of 40 of secundipare, 10 squinted, and of 22 of tertipare, only 4 squinted.

Serini, from examination of the records, shows that there exists a relation between the strabismus of newly-born, and (1st) the total length of labor and (2) the relation of the latter to the period of expulsion. The longer the accouchement and the greater the number of complications, the greater are the chances of deviation of the eyes.

Dr. Serini adds that there are, however, other causes for the strabismus of infants than the length of labor and the complications, and among these are heredity (examples of which are common in the experience of every ophthalmologist), neuroses, and last, but not least, syphilis, which blows its blasting breath where it pleases on the developing fœtus. Dr. Serini's short article is an interesting and very instructive one, and one which furnishes much food for reflection to those who concern themselves in the matter of the origin of squint.

Explanation of Choked Disc and Changes in the Optic Nerves Consequent Upon the Existence of Brain Tumors.

To us the most interesting ophthalmological article which has as yet appeared for this year in any of French periodicals is that by Dr. G. Sourdille, entitled, *Contribution à l'Anatomie Pathologique et à la Pathogénie des Lésions du Nerf Optique ans les Tumeurs Cérébrales*. Especially interesting is it, inasmuch as it does not ask one to believe a theory which fails to explain the known facts of the case. It differs in this respect greatly from the theories of Schmidt-Manz, Leber-Deutschman, Parinaud and others. The deductions of the article are based upon the examinations of three cases—two of cerebral tumor, and one of hemorrhagic pachymeningitis. After a full history of these cases with the gross and microscopic findings in each, Dr. Sourdille reviews those mentioned above, and it may not be uninteresting to briefly reproduce them here.

Theory of Schmidt-Manz to Explain the Phenomena Observed in Connection with the Development and History of Optic Nerve Lesions in Cerebral Tumors.—It is based upon the following hypothesis: The presence of a cerebral tumor determines an increased intra-cranial pressure, which in turn forces a part of the cerebrospinal fluid into the sub-vaginal space of the optic nerve. This causes serous effusion into the sheaths; then the liquid, by filtration through

the pial sheath, produces an œdema of the optic nerve and papilla, the lamina eribrosa in turn being pushed forward, and thus the circulation interfered with.

Among the objections to this theory, Dr. Sourdille offers the valid ones, that if the augmentation of the intra-cranial pressure is truly the cause of the papillitis, then there must be some exact relation between the two—*i. e.*, the greater the intra-cranial pressure the greater would be the degree of papillitis. Every ophthalmologist who has had opportunities to witness much brain surgery will know that this is not true. Papillitis often is found as the result of very small tumors—indeed, it is found where there is no tumor, in meningitis, for example. Again, Roehon-Duvigneaud remarks that we never find in these cases dropsy of the spinal sheaths. Again, it has been shown that dilatation of the sheaths of the optic nerve is not necessary for the development of the papillitis. Furthermore, and an important objection, the papillitis often develops before there is any sensible increase of the intra-cranial pressure. Again, as the intra-cranial pressure increases, the papillitis and the dilatation of the sheaths decreases, until finally atrophy results.

Theory of Leber-Deutschman.—Leber, in 1881, claimed that the papillitis is not due to simple œdema, but represents a peri-neuritis and a neuritis extending from the optic chiasm to the eyeball. The leucocytic infiltration is due to the irritant action of phlogogenic products secreted by the tumors and brought into contact with the nerve and its sheath by the intra-cranial fluid. Deutschman and Elsching came to similar conclusions as the result of their investigations, and it is this theory which has attracted most attention in the ophthalmological world up to the present time.

The arguments upon which this infectious theory is established are of three kinds—clinical, anatomical, and experimental. The principal clinical reason is that there exists no essential difference between "choked disc" and descending neuritis. In the same subject we can observe both types, and the same eye can present each of them successively. From the anatomical point of view, embryonal infiltration is the fundamental lesion, and infection alone can explain it. For Sourdille and many others the dominant lesion is the œdema, not this accumulation of embryonal cells; the disassociation of the whose origin is not the cerebral fluid. The cel-

ments of the neuroglia is caused by a liquid lular proliferation is a secondary phenomenon. No one has ever been able to demonstrate the infecting agent which was admitted only to explain these anatomical lesions. Again, clinically, cerebral affections of a demonstrable microbial origin, abscess of the brain, meningitis due to diplococcus, etc., are not accompanied by lesions of the optic nerve, while tumors, certainly non-infectious (hematomata, fibromata, gliomata, etc.), almost constantly cause them. Not being able to demonstrate the microbial origin of the inflammation, they invoke to their aid the secretion by these tumors of some mysterious phlogogenic substances. Why, if these substances provoke an optic neuritis, do they not invade all of the cranial nerves? In the cases examined by Sourdille the other cranial nerves have been found absolutely healthy. Again, Sourdille asks, why should cerebral tumors secrete a toxine sufficiently strong to infect all of the cerebro-spinal fluid, when the same class of tumors in the eye are unaccompanied by inflammatory reaction?

Theory of Parinaud.—This is founded essentially upon the coincidence of internal hydrocephalus and the papillitis. The development of the tumor causes hyper-secretion of the cerebral fluid; this accumulates under pressure in the ventricles—*i. e.*, internal hydrocephalus results. There, then, results disturbance of the entire cerebral-lymphatic circulation, which results in œdema of the optic papillæ. The optic nerve participates in this œdema, which œdema produces the subsequent changes.

Theory of Sourdille.—Sourdille takes as his starting point the *acknowledged fact of the coincidence of ventricular hydrocephalus and the optic neuritis. But how do these two conditions stand causally to each other? Whence comes this internal hydrocephalus, and how is it caused by brain tumors?* According to Sourdille, the ventricular œdema is transmitted directly to the chiasm, and from thence to the optic nerve, owing to the intimate relations existing between the chiasm and the third ventricle. Examination of the chiasm shows that its anterior three-fifths are free, and are covered only by the pia mater and the visceral layer of the arachnoid, the posterior two-fifths project into the third ventricle, and are covered by ependymal epithelium. The upper surface of the chiasm contributes with the supra-optic gray layer to form the supra-optic recessus. This supra-optic layer,

when it reaches the superior surface of the chiasm, divides into two layers—a posterior, which covers the posterior two-fifths of the chiasm, and the anterior, covering the anterior three-fifths. Thus the whole chiasm is covered with a layer of gray substance. This gray substance, which not only surrounds the whole chiasm, but which penetrates it to bind together the higher elements of the nerve, is prolonged upon the optic nerves, forming a sheath, which grows thinner and thinner, without, however, entirely disappearing, until it reaches the retrobulbar portion, where it again becomes thicker. It is this gray substance, consisting entirely of neuroglia, which has been described by Fuchs under the name of “peripheral atrophy of the optic nerve.” Thus we see the intimate relation existing between the chiasm optic nerve and the third ventricle, and how readily inflammation of the walls of the latter passes over to the former. The œdema having its origin in the gray matter of the third ventricle, passes by continuity to the neuroglia of the optic nerves. Just as facial paralysis, from exposure to cold, would not be produced if the facial did not pass through the aqueduct of Fallopius, this swelling, this œdema, would have by itself little effect upon the visual functions were it not that the optic nerve presented an anatomical disposition similar to that of the facial—the optic foramen, which is just large enough to allow the passage of the nerve, its sheaths and the ophthalmic artery. The optic nerve begins to increase in volume, it gets too large for the unyielding foramen, and it becomes compressed. Under the influence of this compression the return circulation of the blood from the veins of the optic nerve, which enter the cranial cavity, becomes interfered with, as does the lymphatic circulation. The interstitial œdema of the nerves increases; the veins of the pia mater become dilated; then results a serous exudate, which accumulates in the subarachnoid spaces; thus results the destruction of the sheaths of the nerves, and thus is formed the classic ampullar dilatation. Naturally, the circulation of the central vein and artery of the retina is interfered with. The artery becomes contracted, but remains pervious. The vein is reduced to a mere slit, and were it not that there developed communication between the papillo-optic circulatory system and the vessels of the choroid and scleral ring vision would be quickly abolished. This development of the collateral circulation is

not, however, accomplished without notable changes in the part of the papilla, which changes are visible under the ophthalmoscope as the "choked disc."

The reason this immense swelling is confined to the region of the papilla and is not common the retina in its whole extent is to be found in the enormous dilatation which the vessels traversing the lamina cribrosa undergo in their effort to be able to perform the extra work thrown upon them. Moreover, this capillary anastomosis is found only in the papillary region; hence the general retina remains free. Again, the development of this capillary circulation determines anatomical modifications in the structure of the lamina cribrosa, swelling of its connective tissue bundles, etc. Naturally the degree of swelling of the papilla varies with the permeability of the central vein of the retina, the relative largeness of the optic foramen, etc., and in some cases is visible only as a cloudiness of the papillary region, the often mentioned appearance presented by "a descending neuritis." Up to this time no permanent damage has been done the nerve tissue, and a cure—the cause being removed by any means whatever—is a possibility. Even when nothing prevents the progress of the cerebral tumor, the vision is for a long time retained. One can even see the swelling of the papilla diminish. This may be due to atrophy of the optic nerve in the foramen, making a reflux of the fluid along the canal again a possibility, or it may be due to development of a further collateral circulation by means of the veins of the dural sheath. Little by little, however, the vision diminishes, and is then finally abolished. Lesions of degeneration appear in the nerve, strangulation at the foramen, and then atrophy. The peripheral fibres are first attacked and later the central. This degeneration extends towards both chiasm and bulb. Generally we find the atrophy of cerebral portion of the nerves more marked than that towards the bulb. This is due to the fact that the larger part of the optic nerve fibres have their trophic centre in the retinal ganglion. Thus all of the phenomena exhibited in the side of optic nerves are the result of œdema of the ependymal neuroglia. This œdema of the neuroglia represents but an extension direct of the œdema of the gray substance found in all cases in the neighborhood of growing cerebral tumors.

The above, in substance, is Dr. Sourdille's presentation of his case, and he is to be congrat-

ulated upon the clearness with which it is stated. It is a pleasure to meet with advances in any department of medicine, whether these advances have or have not a practical side. It is a pleasure to have an explanation that explains—doubly pleasant when it takes the place of numerous other explanations which we have been asked to accept, but which serve only to give birth to other children which themselves needed explanation.

314 east Franklin street.

Analyses, Selections, Etc.

A New Method of Controlling Hemorrhage in Operations Upon the Head and Neck.

Dr. George W. Crile, of Cleveland, Ohio, read a paper on this subject before the Mississippi Valley Medical Association, session held at Put-in-Bay, Ohio, September 12th and 13th, 1901. He said that the partial or complete obliteration of the common carotid arteries for a temporary period is the basic principle of a method advanced for the control of hemorrhage in operations upon the head and neck. Owing to the anatomical position of these arteries, and especially of their close relationship to the vagus, and also for the purpose of noting the changes on the arterial wall, an experimental research extending over a large number of dogs was undertaken.

The instrument employed during these experiments, and afterwards also clinically, consists of two parallel blades shielded by rubber and adjusted by a set screw. The effects on the blood pressure and respiration comprised the main physiological factors of this investigation. The blood-pressure curve in all cases rose to a height corresponding as to whether one or both carotids were clamped. Physiological compensation, however, occurred soon after, the blood pressure curve thereby again regaining its normal level. Cardiac inhibition, due to vagal manipulation, was noted in many cases. Its results were not attended with serious consequences, and experimentally as well as clinically this disturbance is effectually eliminated by atropine administered some time previous to the opera-

tion. Respiration for the most part was unaccompanied by any marked changes, a slight fall being noted in many cases. Changes in the arterial coats varied according to the amount of pressure applied, and the length of time during that such pressure had been continued. The lumen of the vessel in all cases showed an oval outline at the point of application, especially in those cases where the clamp had been too tightly adjusted or had been maintained for a continuous period of several hours or days. Clamping the arteries for fifteen to twenty minutes gave otherwise no change. When continued for a longer period, one hour or so, alterations of the intima were noted, such as separation and massing together of the endothelial cells. Media and adventitia also bore evidence of disturbances in their component elements. Some specimens subjected to pressure for from four to six hours revealed marked degeneration of the media and corresponding changes in the intima and adventitia. Others clamped for the same period were thrombosed and some necrosed, a resulting cause of forcible adjustment of the clamps. Wound infection, which occurred in some experiments, was attended with the most marked changes, such as round celled infiltration, thrombosis and necrosis.

For the clinical application of this method, caution against too forcible adjustment is advised. Mere approximation of the arterial walls, not compression of the same, is all that is required. Clinically, this method has been efficiently employed during the past few years, and has been found to effectually control arterial hemorrhage. The great number of operations in which this method has been applied comprises the various tumors of the face, neck and nose, parotid glands, excision of the tongue, resection of the jaw, etc.—in short, all operations on the head, neck, and face.

The Young Physician.

Dr. Emil Amberg, of Detroit, Mich., read a paper on "The Young Physician" before the session of the Mississippi Valley Medical Association, just held at Put-In-Bay, Ohio (September), of which the following is a synopsis:

Clouds are gathering on the professional horizon. The status of the medical profession

of to-day will in future be understood and excused only by the historical method. The young physician of to-day is most concerned in any medical matters, because the future belongs to him. The public and the young physician are in many instances shamefully deceived by the medical schools. The "declaration of independence" of the medical profession has not yet been pronounced. The most important part of it will read: "medical schools shall be State institutions." Modern medicine should be based on solid ground; it must be studied systematically, and requires the whole energy and time of its well-trained exponents. Only in devoting his time to professional work will the average physician be true to his calling. Thorough knowledge in physiology and pathology is absolutely necessary for correct and independent thinking in medicine. The field of medicine becomes larger every day. The means which lead to a differential diagnosis become more exact. Preventive medicine has become the password of the time. The methods of treatment embrace means hitherto only little employed. A greater familiarity with psychology, hydrotherapy, massage, and gymnastics and their proper application will quickly diminish the number of faith healers and osteopaths and strengthen the confidence of the public in the profession. Thorough training in a professed specialty should be insisted upon. The code of ethics is almost powerless now-a-days.

As soon as it is understood that the life of a citizen in one political division is just as valuable as the life of a citizen in another division, uniformity of medical laws will be established by the aid of reciprocity. It is only natural that divisions, which are, medically, equally strong, will form groups. Overcrowding in itself is at present beyond our control. Reciprocity will raise the standards and do away with illegitimate and fraudulent overcrowding. The approval of reciprocity and uniformity by almost every intelligent physician must be acknowledged with satisfaction. The tyranny exercised by so many medical schools can and must be broken by the profession. Paternalism of the worst kind must be overcome. The combination of the profession against medical schools of lower standards may become a necessity. The standard approved of by the Association of Medical Colleges cannot be accepted as sufficiently high. The mere fact that a medical college belongs to the Association of Ameri-

can Medical Colleges is no proof of its sufficiency. The medical boards cannot conscientiously recognize the College Association. If the American Medical Association cannot act independently the formation of a new Association may become a necessity. However, this can be avoided. At present the future of American medicine is in the hands of the House of Delegates of the American Medical Association. Great responsibility is placed upon the shoulders of the delegates, who are confronted with serious problems. The endorsement of the plan of reorganization of the American Medical Association at the meeting at St. Paul awakens great hopes. May the delegates find a solution in the near future, and may they feel sure of the assistance and co-operation of every clear-minded and well-meaning physician in this our great country.

Influenza Heart.

Among the more frequent sequelæ of influenza must be placed, as Saundby (*Birmingham Medical Review*) writes, the affections of the heart. These may be organic or functional; the functional appearing in altered rate and rhythm, bradycardia more often than tachycardia, of the heart's action, in many cases inconstant, only occurring under certain conditions, or at certain times. The symptoms frequently simulate those occasioned by abuse of alcohol, tobacco, or tea. The organic lesions are chiefly shown by dilatation of the ventricles, in many cases due to a subacute myocarditis, leading in weak subjects to later fatty degeneration.

Clinically, the symptoms most commonly observed in women after an attack of influenza comprise irregularity of the pulse and intermittency, persisting, may be, for months; with pallor, debility, depression; but with no change in the physical signs of the heart. Gastric catarrh is a very common accompaniment. Actual dilatation of the heart is confined in his experience to males, not invariably giving rise to a mitral regurgitant murmur. Albuminuria is rare, dyspepsia common.

The prognosis in these cases is grave, and depends upon environment. Treatment for purely functional disease spells, rest, careful dieting, iron, quinine, and digitalis, if the pulse is rapid. With dilated hearts, patients obtain most good

from the Schott mode of treatment, in addition to the measures just detailed.

Sansom (*Internl. Med. Mag.*) regards tachycardia as the most frequent cardiac sequel of influenza; many of the cases exhibit quickened action of the heart, but only intermittently. If constant, the patient may suffer little inconvenience, even with a pulse-beat of 120. If intermittent, discomfort arises when the acceleration begins. "Vagus storms" are also common. Palpitation, paroxysmal dyspepsia, nausea, migraine, diarrhœa, dyspnoea, and tachypnoea may occur. In these cases dilatation of the heart is rare, even after prolonged tachycardia; other organic lesions have not been seen. The examples of dilatation seen by Sansom have been chiefly in males. He regards this dilatation as nervous in origin, and sometimes only temporary in character. In one interesting case, a male of alcoholic habits, after an attack of influenza, became dyspnoic, with a pulse of 200, and an extremely dilated heart. In thirteen days the dilatation had disappeared, and the pulse dropped gradually to 56. Probably here there was some alcoholic neuritis of the vagus.

Paroxysmal post-influenza tachycardia is usually accompanied by several ocular symptoms: (1) Retraction of the upper eyelids toward and under the margins of the orbits; (2) tremor of both lids when gently closed; (3) Von Graefe's sign; (4) one eye on a lower level than the other from unequal muscular balance (Dixon Mann's sign); (5) exophthalmos. These signs are probably due to central causes. Treatment often fails. Digitalis and the like are useless, except in chronic dilatation; in acute dilatation are harmful. If given, it should be intermittently. Simple diet (largely milk), arsenic, and especially weak galvanic currents, passed along the course of the vagi, form the best means of treatment, but it is generally six months or so before marked improvement may take place.

Another condition of the heart seen after influenza is that of irregular action, from slight occasional intermission to "*folie du cœur.*" Gout is the most important associate of irregular heart. The condition is slow of recovery. Physical methods are valuable. Bradycardia, though less common, is more dangerous to life, and usually more distressing. Slowing of the pulse down to 19 beats per minute has been noted. Massage of the limbs is of service here, and in some instances belladonna has acted well; but this condition is even more unsatisfactory

for treatment than the quickened or disturbed rhythms.

Cardiac pain after influenza, resembling in severity true agina pectoris, but without high arterial tension, or other circulatory lesion, probably arising from a nervous cause, local or central, was described by Sansom in 1892 and 1894. He now modifies his former description, and admits that in many such, organic heart disease supervenes; *post-mortem* examinations of several cases, with previous history of such attacks, afforded signs of aortitis—acute, subacute, or chronic, localized or general. The acute cases are little influenced by treatment. In the others, temporary relief of the symptoms should follow long-continued administration of iodides, in 5 to 10-grain doses.—*Indian Med. Record*, August 28, 1901.

Hydrogen Peroxide a Local Anesthetic.

It has been going the rounds of some of the medical journals, as coming from Dr. H. E. Kendall, Sydney, N. S., that peroxide of hydrogen has proved very satisfactory in his hands as a local anæsthetic. Injected under the epidermis, it produces immediate and complete anæsthesia of the whole skin. No absorption appears to take place, as the inter-cellular inflation from the gas generated seems to produce such pressure that the skin cuts like frozen tissue. Dr. Kendall has used the hydrogen peroxide for over a year in opening abscesses, cutting off redundant tissue about ingrowing toe-nails, opening the pleural cavity, and, in one case, opening the abdominal cavity.

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"Glycerinated" Vaccine Lymph vs. Dried Lymph.

In the fourth series of Our Subscribers' Discussions, published in this issue of the *Journal*, in regard to the relative value of these two forms of vaccine, it will be noticed that only one of the participants prefers the dried lymph—namely, Dr. Weston, of Duluth, to whom the prize is awarded. We have received more answers to our question than we have been able to publish, and all the writers whose answers we do not print prefer the "glycerinated" lymph. Nevertheless, the pages of some of our contemporaries during recent months have shown evidence of considerable dissatisfaction with that form of vaccine, and we are far from being convinced that it has a single point of superiority over dried lymph. Leaving the main question for further consideration, however, we may be allowed to point out the fallacy of one of the statements on which a preference for "glycerinated" lymph is based.

It is a great mistake to suppose that there is any considerable difficulty in preserving dried lymph for transportation unimpaired to any part of the world. But, in the language of the comic opera, "it depends on the way it is done." It must be really dried, chemically desiccated, and then it must be kept excluded from the air. It need not be kept in a refrigerator, and, if it is properly prepared, no ordinary temperature injures it in the least. To the best of our information, the prime importance of the thorough desiccation of vaccine lymph was first suggested some twenty years ago, by the late Dr. Jerome H. Kidder, who was then in the medical corps of the navy, and on duty in the Naval Laboratory in Brooklyn. Dr. Kidder's theory was exhaustively tested at the time and absolutely demonstrated to be correct. We remember that the following was one of the tests employed: Ordinary dried vaccine slips were subjected to several days' additional desiccation by exposure in hermetically sealed receptacles to the presence of strong sulphuric acid or anhydrous calcium chloride, sometimes the one and sometimes the other being used, according to methods well known to all chemists. They were then sealed in a piece of rubber tubing and kept constantly at a temperature of 98 degrees F. for a month. At the end of that time they were found to be quite equal in potency to fresh lymph. Slips thus prepared were sent to England by mail,

brought back to New York by mail, and then used successfully. They were even sent as far as to Japan and found to be unimpaired on their return. Such tests were applied over and over again. There is no difficulty, then, in transporting dried lymph without lessening its efficiency.

The trouble was that in the days when these tests were applied the profession had not learned that vaccine could be kept for long periods without impairment. They demanded that it should be "fresh," that is, not more than four or five days old; consequently, they often received from conscientious purveyors material that would never have been issued if there had been time to test it. In a long series of transmissions of vaccinia from calf to calf, some of the animals yield lymph of standard potency, while others furnish a decidedly weak product, perhaps almost if not quite inert, and there is every grade between the two. Generally there is no obvious reason for the difference or any apparent indication that would lead one to expect it. Physiological testing of the product is the only means of distinguishing between the good and the bad; if time is given for that, there need be no dearth of dried vaccine having all the efficiency desired.

It has been demonstrated again and again that the unpleasant local effects that sometimes follow vaccination are seldom the result of any original contamination of the virus, and they never will be if the most ordinary precautions are taken; hence the addition of a germicide is not at all necessary, especially that of a feeble one like glycerin, which, whatever else it may do to vaccine, certainly dilutes it, and so, one would suppose, diminishes its potency. Given a vaccine free from noxious contamination—and dried lymph should always be that—what is wanted is one that will act promptly and produce typical poeks. Such, we believe, is dried lymph properly prepared, properly transplanted, and properly used.—*Editorial N. Y. Med. Jour.*, September 21, 1901.

Medical Diploma Mill Exterminated.

About a month ago Governor Voorhees, of New Jersey, was informed that the Central University of Medicine and Science, managed by Jno. W. Norton Smith, at Jersey City, was offering to sell medical diplomas for \$10 each. Now,

the counsel for Smith submitted to Mr. Vickers a proposition that Smith would consent to forfeit his charter on condition that no further action should be taken. This was agreed to, and Smith then surrendered himself. He was taken before Justice McCornick and gave bail in \$200, nominally to await the action of the grand jury on a charge of obtaining money on false pretences, but really as security that he will abide by his agreement.—*Phila. Med. Jour.*, September 14, 1901.

Book Notices.

Manual of Surgical Treatment. By W. WATSON CHEYNE, M. B., F. R. C. S., F. R. S., Professor of Surgery in King's College, London, Surgeon to King's College Hospital, etc., and F. F. BURGHARD, M. D. and M. S. (Lond.), F. R. C. S., Teacher of Practical Surgery in King's College, London, Surgeon to King's College Hospital, etc. *In seven imperial octavo volumes, with illustrations.* VOLUME V. 482 pages, with 145 illustrations. Cloth, \$5, net. Lea Brothers & Co., Philadelphia and New York, 1901.

This volume deals with the "Treatment of the Surgical Affections of the Head, Face, Jaws, Lips, Larynx, and Trachea, and the Intrinsic Diseases of the Nose, Ear, and Larynx." The editors of this *Manual* consigned the authorship of a large part of this volume to H. Lambert Lack, M. D., F. R. C. S.—especially that part devoted to the "Intrinsic Diseases of the Nose, Ear, and Larynx." Dr. Arthur Whitfield, in the section on *Moles*, wrote the account of "electrolysis for superfluous hairs." This volume is indeed of special interest to the rhinologist and laryngologist; but the descriptions of the surgical treatment of diseases and injuries of these parts are so clearly and plainly written, with a profusion of well drawn illustrations to assist the text, that the work becomes also of essential interest to the general surgeon as well—especially when he lives remotely from the specialist. But it contains descriptions of much more than belongs to the specialist in the line above indicated. It deals with wounds and affections of the scalp, of the skull, with intra-cranial injuries and suppuration, including concussion, contusion, and compression of the brain, with

hernia cerebri, tuberculous meningitis, hydrocephalus, focal epilepsy, and many other conditions of the part. Trigeminal neuralgia receives the consideration of an entire chapter. Plastic surgery of the face, including hare-lip and cleft palate, have the space of two chapters. In short, all of the generally recognized surgical diseases of the head are treated of in this volume. As this *Manual* of seven volumes approaches completion, the purchaser finds that he has an almost complete library of *surgical treatment*, prepared by authors each eminent in his field. Each volume is well indexed as to its contents. Enough of causation, symptomatology, etc., is introduced in the text to be a guide to diagnosis of the conditions requiring surgical treatment. We very highly esteem the five volumes already issued, as being practical, helpful guides.

Diseases of the Intestines. By DR. I. BOAS, Specialist for Gastro-Intestinal Diseases in Berlin. *Authorized Translation from the First German Edition, With Special Additions by SEYMOUR BASCH, M. D., New York city. With Forty-Seven Illustrations.* New York: D. Appleton & Co. 1901. 8vo. Pp. 560. Cloth, \$5; sheep, \$6.

This is a valuable work to the practitioner of medicine and surgery, and it is of equal value to the beginner in medicine, and he should have it in his library for frequent reference as a help in diagnosis and as a therapeutic guide. In fact, a very large portion of Part I is devoted to the "General Therapeutics of Intestinal Diseases," including dietetic treatment, hydro-therapeutics (including mineral waters of the United States), massage, electro-therapeutics, injections, inflations and gastric lavage, medicinal treatment, etc. Part II is taken up with special diseases, as intestinal catarrh, habitual constipation, intestinal displacements, ulcers of the intestines and duodenum, intestinal neoplasm, stenosis and obstruction, typhlitis, perityphlitis (appendicitis), sigmoiditis and pericolicitis, diseases of the rectum, and nervous diseases of the intestines. This book at once takes rank among the standard works which every doctor should have, whether he be physician or surgeon. It is thoroughly practical in all of its descriptions, free of unnecessary rubbish and rehash, and the short sections on differential diagnosis under almost all of the diseases are extremely helpful. We confess that we like the author's way of presenting his subjects, and Dr. Basch, in his addenda to

various chapters, has seemed to keep in mind the wants of the American practitioner. The charming style adopted by Dr. Joseph M. Mathews in his "Treatise on Diseases of the Rectum, Anus and Sigmoid Flexure," in imparting practical, useful knowledge, has, in great measure, been followed in this work, imparting valuable information as the reader proceeds from page to page. The illustrations are good, and a good index is appended. In the chapter on Appendicitis, we find in this edition a brief resume of the American views on this common disease. The introductory, covering some fifty-odd pages, gives essential anatomical and histological, as also physiological and physiologic-chemical remarks, and a few pages on the intestinal gases. Part I is mostly taken up with a detail of the best methods of examining the patient, the fæces, urinary examination, etc.

The Mental Functions of the Brain. An Investigation Into Their Localization and Their Manifestation in Health and Disease. By BERNARD HOLLANDER, M. D. (Freiburg, I. B.), M. R. C. S., L. R. C. P. (London). *Illustrated with the Records of Eight Hundred Cases of Localized Brain Derangements, and with Several Plates.* G. P. Putnam's Sons, New York and London. The Knickerbocker Press. 1901. 8vo. Pp. 507. Cloth, \$2.50, net.

This is, indeed, a most interesting book. The author, basing his localization of mental functions chiefly on clinical and pathological investigations, found that they agreed very closely with those made nearly a century ago by Gall, "whose marvellous discoveries of the anatomy and physiology of the brain—on which Spurzheim built his system of phrenology—were ignored even by his most scientific followers, so that the world is ignorant of them, and they are presented for the first time in this book." The evidence adduced by Dr. Hollander from his studies of people and of the "records of 800 cases of localized brain derangement," shows that the fundamental varieties of mental derangement—whether in the form of violent mania, or melancholy, or kleptomania, or suicide, or homicide, etc.—are localized in definite circumscribed regions, and "frequently are, in the early stages, at least, amenable to treatment." If future investigators confirm the author's observations, brain surgery will receive an immense stimulus to activity. Their confirmation will also lead to a revival of interest in phrenology. The book

is of interest to physicians, lawyers, and scientists in general.

Practical First Principles. *Simplifying the Study of Normal and Abnormal Structure and Function, and Aiding Diagnosis.* Designed for the Use of Students and Practitioners of Medicine. By A. H. P. LEUF, M. D., Associate Editor of "Medical Council," Philadelphia. Published by The Medical Council. Cloth. 8vo. Pp. 105. 1901. Price, \$1 net.

Beginning with protoplasm and the cell, this book proceeds in sequence to the consideration of tissues, organs, apparatuses, systems, the body as a whole, cell nutrition, cell physiology, cell pathology, general principles, their illustrative application and nomenclature. An appendix deals with an explanation of the microscope. Such a book would be of great use to the beginning medical student when he is anxious to get insight into the practical first principles of his study. It is likewise of service to the student doctor who too often needs the elementary principles of medicine simplified. The text is illustrated by nearly fifty drawings—almost all new and original, and serve well their purpose. To the class teacher or professor, this little book is of special value in affording him little practical points or descriptions which enable him the better to teach.

Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By RICHARD C. CABOT, M. D. *With Colored Plates and Engravings. Fourth Revised Edition.* New York: William Wood & Co. 1901. Cloth. 8vo. Pp. 494—xxi.

This is an almost entirely rewritten edition—especially those sections which refer to pernicious anemia, leukemia, typhoid fever, and the diseases due to animal parasites. The work is divided into two books. After an introduction in *Book I* on the scope and value of blood examination, Part I takes up the methods of clinical examination of the blood. Part II is on the physiology of the blood. Part III considers the general pathology of the blood. *Book II* is taken up with the special pathology of the blood, detailing, first, the pathology of the diseases of the blood, such as the anemias, chlorosis, leukæmia, etc. The changes are next noted in the blood of infectious diseases—acute and chronic. After this, the clinical values of blood examinations in the diseases of special organs are detailed. The changes in the blood of nervous and malignant diseases, and the changes produced by va-

rious poisons are described. Under the heading of blood parasites, the malarial organism is described in full. Like descriptions are given of changes in the blood caused by animal parasites and by skin diseases. The blood in infancy is the subject of a special chapter. The chapter on examination of blood serum concludes the systematic arrangement. Some appendices refer to Neusser's perinuclear basophilic granules; statistics in 121 cases of pernicious anemia, red cells in chlorosis, and the leucocytes in trichinosis. This running account of the contents of this work show its invaluable service to every progressive doctor.

Ready-Reference Hand-Book of Skin Diseases. By GEO. THOMAS JACKSON, M. D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. *New (3th) Edition, Thoroughly Revised.* In one 12mo. volume of 617 pages, with 82 Engravings and 3 Colored Plates. Cloth, \$2.75, net. Lea Brothers & Co., Philadelphia and New York. 1901.

The early exhaustion of the third edition of this work not only proves its popularity, but has given opportunity to the author to make many changes and additions without increasing the size of the book. Pronunciations are omitted, because dictionaries are the proper place to look for them. Besides, a searching revision has been made of the text, and whatever was obsolete has been omitted. And yet new sections have been added on acne keratosa and urticata, carate, crawleraw, endothelioma, erythrodermic pityriasis en plaques diseminées, Fordyce's disease of the lips, gramiloma necrotica, impetigo of Bockhard, lichen annularis and pilaris, pityriasis lichenoides chronica, and verruga peruana. The moderate price made possible by the large editions demanded for this work is a point appreciated by every purchaser, and every practitioner should have a copy; for "Jackson on the Skin" is by far the best book on skin diseases for the general practitioner—not an expert dermatologist. The alphabetical arrangement of the diseases with proper cross references adapts it well to the purposes of the specialist. For the general practitioner, Part I is of incalculable service. Ten pages of this part are taken up with the anatomy and physiology of the skin. The next eighteen pages are given to the subject of general diagnosis, and these pages alone are worth the price of the book. Eight pages on therapeutic notes are very valuable. A little

over five pages are given to classification, and Part I concludes with about three pages of "Some Dermatological Doubts," taken from the *Medical Record*. Part II, about 550 pages, is devoted exclusively to the symptoms, diagnosis, etiology, and treatment of the diseases of the skin, which are named alphabetically. An appendix of thirteen pages gives numerous formulæ as guides in the preparation of prescriptions for the treatment of skin diseases. Many, if not all of them have been well tried, and their value proved. A double-columned index of about fourteen pages concludes the book.

International Clinics. *A Quarterly of Clinical Lectures and Especially Prepared Articles by Leading Members of the Medical Profession Throughout the World.* Edited by HENRY W. CATTELL, A. M., M. D., Philadelphia, Pa. VOL. II., *Eleventh Series.* 1901. Philadelphia: J. B. Lippincott & Co. 1901. 8vo. Pp. 304. Cloth, \$2; half leather, \$2.25.

This is an unusually valuable issue of a generally useful quarterly. It has articles by leading men of this and of foreign countries on subjects of practical interest in almost every department of medicine. Among the articles of scientific interest is that by Professor Santiago Ramon y Cajal, professor of anatomy and histology at the Royal University of Madrid, Spain, giving "Some Suggestions as to the Mechanism of Mental Operations." The author of this paper is the discoverer of the fact that "the terminal branches of the nerve cells are absolutely free; they are not attached to any other nervous element; they are in contact with the bodies and the protoplasmic processes of the nerve cells, but no more." On this discovery, the French histologist, Duval, bases an hypothesis as to the underlying cause of sleep and of the artificial rest of the brain produced by narcotics, which only the lack of space forbids us from reproducing. Another paper which makes this volume specially valuable is one of seventeen pages, closely but distinctly printed, giving "The Pronunciation and Definition of Some of the Newer Medical Words," by Dr. W. A. Newman Dorland, of Philadelphia, author of the *Illustrated Medical Dictionary*. The words are alphabetically arranged. It would be well for the subscriber who consults his *Medical Dictionary* in vain for the pronunciation and definition of a medical word, recently introduced, to remember this list of seventeen pages of words forming the last section of the book under no-

tice. The section on therapeutics is specially rich in this volume, and the same may be said of the articles in nearly all of the other departments.

Editorial.

Substitution of Drugs Illegal in Tennessee.

Governor McMillin, of Tennessee, on April 3, 1901, approved an important act to prevent the substitution of any drug in filling physicians' prescriptions by druggists in that State. The act makes it "unlawful for any corporation, firm, or person, or any combination or association of corporations, firms, or persons engaged in the business of buying, compounding, and selling drugs and medicines to substitute any drug or medicine in lieu or instead of that given to the patient by the physician on the face of his prescription." Nor can "any agent or employee of such person, firm or corporation engaged in the business of buying and selling drugs in this State" substitute any medicine for the specific medicine mentioned in the physician's prescription. "Any person, firm or corporation violating the provisions of this act, or aiding or abetting the violation of the same, shall be guilty of a misdemeanor, and, upon conviction, shall be fined not less than \$25, nor more than \$100, for each and every offence."

Section 4 of this act states that it is enacted because public welfare requires it.

It is a notorious fact that substitution among retail druggists, and especially on prescriptions for proprietary articles, is one of the crying evils of the day. If physicians could be made to understand the vital importance of directing their patients to the most reliable druggists, or prescribing in original packages, or of examining the drugs after the prescriptions have been filled, the difficulty might be overcome. No retail druggist would dare continue this nefarious practice if he understood that in case of detection the physician would not only expose him to his patients, but would report him to his Medical Society and warn his fellow-practitioners against sending or giving him any patronage. Such a course would have all the good effect of resorting to law, although it is well to be backed

up by a law on the subject after the order of the Tennessee law.

Every now and then some worthy practitioner breaks out in some indignant outburst against this practice of substitution of some cheaper or inferior drugs under the plea by the druggist that "they are just as good as the articles prescribed." It is idle to appeal to the conscience of such a druggist. For this class of druggists, the Tennessee law suits admirably, and we trust examples will be made of some of the prescription fillers or substituters in any State where the law is at all similar to that of Tennessee.

This outrage of some apothecaries in substituting articles not prescribed for articles prescribed should be taken in hand by the medical press, and as our attention has been called to the matter, we very cheerfully come to the front, condemning the practice of substitution of anything for the article prescribed, and cautioning or warning the doctors to be on the lookout for such things.

Medical Positions to be Filled.

The United States Civil Service Commission invites attention to the following positions to be filled after examination of candidates:

Examination for Physician for Indian Service, October 22, 1901.

The examination will be held at various places throughout the United States on October 22d for the position of physician in the Indian service. The examination will consist of the following subjects, which will be weighed as follows:

	Weights.
1. Letter writing	5
2. Anatomy and physiology	15
3. Chemistry, materia medica, and therapeutics	10
4. General pathology and theory and practice of medicine	25
5. Surgery	20
6. Bacteriology and hygiene	10
7. Obstetrics and gynecology	15
<hr/>	
Total	100

Information relative to the subjects and scope of the examination may be found in section 125 of the Manual of Examinations revised to January 1, 1901. Age limit, 25 to 55 years.

From the eligibles resulting from this examination it is expected that certification will be

made to the position of physician in the Indian service, at White Earth Agency, Minnesota, at a salary of \$900 per annum, and to other similar vacancies as they may occur.

This examination is open to all citizens of the United States who comply with the requirements and desire to enter the service. All such persons are invited to apply, and applicants will be examined, graded, and certified with entire impartiality and wholly without regard to any consideration save their ability as shown by the grade attained in the examination. Preference may be given to residents of the Indian service district in which the vacancy exists.

Examination for Assistant Surgeon, Freedmen's Hospital, October 29-30, 1901.

The United States Civil Service Commission announces that on October 29-30, 1901, an examination will be held in any city in the United States where postal free delivery has been established, for the position of assistant surgeon at the Freedmen's Hospital. Age limit, twenty years or over.

The examination will consist of the following subjects, which will be weighed as follows:

	Weights.
1. Letter writing	5
2. Anatomy and physiology	10
3. Surgery and surgical pathology	20
4. Chemistry, materia medica, and therapeutics	10
5. Bacteriology and hygiene	15
6. Theory and practice of medicine and general pathology	25
7. Obstetrics and gynecology	15
<hr/>	
Total	100

The examination will be divided as follows: *First day*, first four subjects; *second day*, remaining subjects.

From the eligibles resulting from this examination, it is expected that certification will be made to positions of assistant surgeon at the Freedmen's Hospital, Washington, D. C., at a salary of \$1,000 to \$1,500 per annum, and to other similar vacancies as they may occur.

This examination is open to all citizens of the United States who comply with the requirements, without regard to race or to political or religious affiliations. All such citizens are invited to apply; but attention is invited to the fact that the Freedmen's Hospital is an institution for the treatment of colored patients, and it

is understood to be the practice of the department to appoint only colored persons to positions therein. Applicants shall be examined, graded, and certified with entire impartiality and wholly without regard to any consideration save their ability as shown by the grade they attain in the examination.

Persons who desire to compete for either of the above positions should at once apply to the United States Civil Service Commission, Washington, D. C., for application forms 304 and 375, which should be properly executed and promptly forwarded to the Commission.

Southern Surgical and Gynecological Association.

The *Canadian Practitioner and Review*, September, 1901, has this to say:

"Among the many societies of specialists in medicine and surgery which have come into existence during the last few years in the United States, we know of none that has met with greater success than the Southern Surgical and Gynecological Association. That success, as is well known, has been largely due to the unflinching and unselfish efforts of one of the most eminent surgeons of the 'Sunny South,' Dr. W. E. B. Davis, of Birmingham, Alabama, who was one of the founders of the Association, and for thirteen years acted as its secretary. We have received a copy of the transactions of the thirteenth annual meeting, held last November, at Atlanta, Georgia, and learn from it that Dr. Davis has resigned, and Dr. W. D. Haggard, Jr., has been elected in his place.

"Dr. Davis, in replying to a very cordial vote of thanks, pointed out that the Society was organized to give the surgeons of the South a chance to come to the front. It had grown and expanded to such an extent that it is now a Southern association only in name. Men from all, or nearly all, parts of the United States have become members; but its meetings are held in the South, and its officers are Southern men. He concluded by making pleasant references to his successor, whom he designated a scholarly, ambitious, and worthy man—a son of one who did more than any other member in the interests of the organization, especially in its early days."

Autopsy of President McKinley.

The following report of the autopsy of President McKinley, killed in Buffalo, N. Y., du-

ring the Pan-American Exposition, by the assassin, has been published by the surgeons and doctors in attendance upon him:

"The bullet which struck over the breast bone did not pass through the skin, and did little harm. The other bullet passed through both walls of the stomach near its lower border. Both holes were found to be perfectly closed, but the tissues around each hole had become gangrenous. After passing through the stomach, the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the kidney. This portion of the bullet's track was also gangrenous, the gangrene involving the pancreas. The bullet has not yet been found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt at repair on the part of nature, and death resulted from the gangrene, which affected the stomach around the bullet wounds, as well as the tissues around the further course of the bullet. Death was unavoidable by any surgical or medical treatment, and was the direct result of the bullet wound.

[Signed.] "Harvey D. Gaylord, M. D., Herman G. Matsinger, M. D., P. M. Rixey, M. D., Mathew D. Mann, M. D., Herman Mynter, M. D., Roswell Park, M. D., Eugene Wasdin, M. D., Charles G. Stockton, M. D., Edward G. Janeway, M. D., W. W. Johnston, M. D., W. P. Kendall, Surgeon, U. S. A., Charles Carey, M. D., Edward L. Munson, Assistant Surgeon, U. S. A., Hermanus L. Baer, M. D."

Biographical History of the Physicians and Surgeons of the Colony and State of Virginia.

This work has been undertaken by Frederick Horner, M. D., U. S. Navy (retired), of Marshall, Fauquier county, Va. The first edition is approaching completion in MS., and will, when published, be furnished subscribers at about \$3 or \$4 per copy on receipt of the book, which will be printed, illustrated, and bound in first-class style. It will contain portraits and photos of the most eminent physicians and surgeons of the Colony and State of Virginia, together with sketches of the lives of the Alumni of the universities of Europe and America, of army and naval surgeons, of Fellows of the Medical Society of Virginia, the American Medical Association, and of professors, authors, etc. It will include the Colonial period, the War of

the Revolution, and the War of 1812, and the Civil War—ending with the close of 1900. Such a book by one so able to prepare it ought to be a work of great interest to many in other States, who themselves or their forefathers went from the Colony or State of Virginia to other States or counties.

Medical Society of Virginia.

The thirty-second annual session of this State Society will be held at Lynchburg, Va., November 5th, 6th, 7th, and probably 8th, 1901. While November 5th is election day for many of the State officers, there are but few instances when the doctor who proposes to attend the session cannot vote at his precinct and then reach Lynchburg in time for the opening of the session at 8 P. M. Tuesday night. This opening session will be one of special interest to the public, and for formal reports, which will be referred to proper committees, if such be called for. The president, Dr. J. R. Gildersleeve, of Tazewell, Va., will deliver the "Address of the President," and Dr. S. W. Dickinson, of Marion, Va., will deliver the "Address to the Public and Profession." These addresses, beside the routine usual to the opening of each annual session, will consume the time till the hour for adjournment. So that the earnest business of the session—the reading of papers and their discussion—will not begin until about 10 A. M. of Wednesday, by which time every doctor in the State can reach Lynchburg after voting the day before. The Committee of Arrangements, of which Dr. C. E. Buscy, of Lynchburg, is chairman, is doing excellent work in the way of getting everything ready for the session. Dr. Gildersleeve and all the other officers are actively at work in the respective spheres. The official circular announcement of the session will be issued about October 7th or 8th. Fellows preparing papers for the session should at once notify the secretary, Dr. Laudon B. Edwards, so that they may be properly announced in the circular.

President McKinley's Death.

The reports from Buffalo just as we were going to press with the issue of September 13th indicated, much to our surprise, yet to our joy, that President McKinley was rapidly recovering—that surgically he was well, and that he then needed only some attentions from the physicians to insure his recovery. While yet—even

with the revelations of the autopsy before us—we are not disposed to criticise the mistake in diagnosis and prognosis, we can but feel that had the patient been a tramp in one of our up-to-date surgical clinics, where the reputation of the surgeon was at stake, freer investigations as to the track of the pistol ball would have been made, and a more correct diagnosis resulted. With the lights before them, we believe that the eminent surgeons in the case did the best they could have done under the circumstances. And yet in our sorrow over the loss of the great and good man from the presidential chair, the remark of the old darkie who had just lost his wife forces itself upon us: "I have no doubt, doctor, but that you have done the best you knowed how; but God knows you didn't know much."

Examinations for Army Medical Department.

The examination of applicants for appointment as assistant surgeon in the United States Army has been resumed in Washington and San Francisco. The Army Medical Boards convened in those cities will remain in session so long as there are candidates to be examined. Seventy-six vacancies in the Medical Department still remain to be filled, and as it is desired by the military authorities that the department be filled up to its full legal limit as early as practicable, all eligible applicants will be afforded opportunity for examination. Those found qualified will be commissioned at an early date. Full information as to eligibility, nature and scope of examination, etc., may be obtained upon application to the Surgeon General, United States Army, Washington, D. C. Successful candidates are commissioned as first lieutenants, and known as assistant surgeons. The pay of an assistant surgeon is \$1,600 a year.

Yellow Fever and Leprosy.

It is a source of gratification to learn that "since Cuba was wrested from Spain, yellow fever, which proved such a curse to that island for years, has almost completely disappeared. And now it is said that leprosy is being slowly, but none the less certainly, eradicated in the Hawaiian Islands. According to a correspondent, writing from Honolulu, five years ago there were over thirteen hundred inmates at the leper settlement on the island of Molokai; now there are only about nine hundred cases. This is

due, we are told, not so much to any scientific treatment of the disease, as to the gradual extinction of the native race, which alone, in the opinion of the superintendent of the settlement, will cause the complete eradication of the disease."

Such are the reports that are constantly pouring into the medical and secular press. While it is evident that vast improvement has been made in the healthfulness of Havana—that hot-bed of yellow fever—we must not forget that some years seem more than others to be epidemic years for yellow fever from causes almost unknown, or else from causes that are not removable in time to prevent the spread of the disease. In every southern city and river port, let there be eternal vigilance with reference to the prevention of this disease. "In time of peace prepare for war."

As for leprosy, a number of cases have been brought to the States, and are under close surveillance. We are watching the effect of the domiciling of the relatively few lepers in the United States with a great deal of interest, and some anxiety as to the infection of some of those who have daily to come in contact with them.

The University College of Medicine, Richmond, Va.,

Has adopted a resolution calling for a strict adherence to the four-year course, which enables its graduates to appear before any Board of Medical Examiners in the United States. It will be recalled that a number of the States, following the lead of New York, have made it imperative that hereafter graduates appearing before their State Board of Medical Examiners must give proof that they are graduates of colleges that adhere strictly to the four-year course of medical studies. Thus the graduate of a school in some academic college cannot be credited by the ticket pertaining to medicine in a four-year course medical college. The possession of a literary degree, or the holding of the certificate of graduation of any academic degree the better prepares the holder for the pursuit of the study of medicine in all of its branches. While this action of the Faculty of the University College of Medicine may, for a time, lessen the number of students, still it is believed that it will accomplish much for the advancement of medical science in the future. The tendency of the day, throughout the scientific world, is up-

ward and forward. There is little disposition to take backward steps. It cannot be long before all reputable colleges will follow the lead taken.

Mississippi Valley Medical Association Officers, Etc.

The twenty-seventh annual meeting of the Mississippi Valley Medical Association adjourned at Put-in-Bay, after a most successful session, on the morning of the 14th of September, out of respect to our martyred President. The following officers were elected for the ensuing year: *President*, Dr. S. P. Collings, Hot Springs, Ark.; *Vice-Presidents*, Drs. J. C. Culbertson, Cincinnati, O., and Paul Paquin, Asheville, N. C.; *Secretary*, Dr. Henry Enos Tuley, Louisville, Ky.; *Treasurer*, Dr. Thomas Hunt Stucky, Louisville, Ky.; *Chairman Committee of Arrangements*, Dr. A. H. Cordier, Kansas City, Mo. Twenty-eighth annual meeting, Kansas City, Mo., October, 1902.

Dr. Stuart McGuire.

Returned September 27th from his trip to Europe in good time to take up his good work at St. Luke's Hospital, of this city. During his absence this Hospital has been thoroughly renovated, elevators have been introduced, and some carpenter changes have been made.

Pasteur Instruction in Richmond, Va.

Prof. Hoen, recently of Baltimore, has established a fully-equipped laboratory in the University College of Medicine, Richmond, where he can be called on to render service in cases of suspected or real rabies or hydrophobia, etc. He will also serve as an instructor during the incoming session of the University College in microscopy, pathology, etc. This is a new departure for the Southern States, but Prof. Hoen is satisfied that there is a broad field for usefulness of his department which only requires opening up.

Medical College Statistics of United States.

The Educational number of the *Journal of American Medical Association*, September 21, 1901, is one of great interest. It gives a "brief description of every college in the United States legally chartered to confer the M. D. degree, and whose diploma is recognized by at least one State licensing board."

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Original Communications.

THE PRESENT STATUS OF EPILEPTICS IN VIRGINIA.*

By WILLIAM FRANCIS DREWRY, M. D., Petersburg, Va.,

Member Commission on State Care of Epileptics; Superintendent of the Central State Hospital of Virginia, at Petersburg.

I shall be brief, my purpose being merely to present to this Association a *resume* of what has been accomplished, or, rather, attempted, in Virginia in behalf of dependent epileptics. I shall not consume your time with a rehearsal of my personal views of the importance of such a public charity as a State institution for epileptics, for in this respect there can be, it seems to me, no difference of opinion; nor shall I discuss at length any special plan of giving needed relief to this class of dependents, for the colony system has been clearly demonstrated to be entirely practicable, and specially adapted to their requirements. It has passed the experimental stage.

The first important thing to do in an effort to establish any great public charity or enterprise is to get the people thinking about it—interested in it—and then to educate them to an appreciation of its benefits; in other words, to create a strong and favorable public sentiment, without which nothing can be accomplished.

Considering the conservatism of our people (Virginians, I mean), the proverbial tenacity with which we cling to custom and tradition, and the prudence with which we adopt new things, progress toward making provision for this long-neglected class of citizens has, perhaps, not been unusually slow. We are a humane people, and our sympathies go out to every class of human sufferers; but our coffers are not overflowing with glittering gold. Did the public

revenues justify it, all dependent classes in our State would be properly cared for.

Though no provision has yet been made by Virginia for her dependent sane epileptics, for the past seven years the matter has been constantly agitated. The widespread ignorance and indifference regarding epileptics and their pitiable condition have, to a very great degree, been dissipated, and the people have been brought to a more thoughtful consideration of their real status in the community. The public mind has been aroused to a better understanding and appreciation of the terrible results of epilepsy, and the public conscience awakened to a deeper concern about the condition of its unhappy victims.

There are evidences throughout the State of strong influences at work in behalf of these afflicted people. The medical journals, the medical profession, the public press, some humane organizations, chiefly the King's Daughters, the clergy, and many prominent individuals, have all been stimulated to efforts in their behalf. If my impressions are correct, there is now a general public sentiment favorable to the establishing of a colony for their care and treatment; indeed, I believe there is little or no real opposition to it. How can any one with humane instincts oppose it? It seems now to be simply a question of ability on the part of the State to establish the colony. Not till 1894 had attention been called to the need of State provision for sane epileptics in this State.* In 1887 it was suggested to have separate buildings at each of the State hospitals for the insane epileptics.**

The first organized effort to secure State aid for epileptics was made by the State Medical Society at the annual meeting in 1895. Imme-

*"The Care of Epileptics on the Colony Plan," by William F. Drewry, M. D., Virginia Medical Monthly, September, 1894.

**Report of Superintendents of State Hospitals to General Assembly.—Senate Document, No. 9, page 4, 1887.

*Read before the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, at Washington, D. C., May, 1901.

diately after the writer had read a paper on the subject of "State Provision for Epileptics," the following resolutions were adopted:*

"1. That it is the sense of the Medical Society of Virginia that the State should make special provision for her dependent epileptics.

"2. That an institution for epileptics, conducted on the colony plan, commends itself to this Society.

"3. That a committee of five be appointed to present this matter to the Legislature and try to induce that body to give it the attention it deserves."

The committee appointed was composed of Drs. Robert J. Preston, J. W. Nash, J. T. Graham, L. G. Pedigo, and William F. Drewry.

At two subsequent annual meetings the Medical Society of Virginia again put its stamp of approval upon the proposed measure, and appointed committees to urge the Legislature to establish a colony as early as practicable. Results followed. During the session of the General Assembly, 1895-'96, the following joint resolution, prepared by the writer, and introduced in the House by Hon. Howard Hathaway, of Lancaster county, and in the Senate by Hon. G. W. LeCato, of Accomac county, was adopted:

"Whereas it appears that there is a large number of epileptics in the State, in our hospitals for the insane, in county and city almshouses, and in private homes, many of them being without proper environment, care, and treatment suited to their unfortunate and helpless condition: therefore be it

"Resolved by the House of Delegates (the Senate concurring), That a commission of five persons, residents of the State, be appointed—one by the Governor, two by the President of the Senate (one of whom shall be a member of the Senate and the other a physician), and two by the Speaker of the House (one of whom shall be a member of the House and the other a physician)—to make a careful investigation of the subject of State care of epileptics, and of the practical workings of the colonies established in Ohio, New York, Massachusetts, and elsewhere, and report to the next General Assembly the result of their investigations."

The commission appointed as recommended consisted of Dr. George W. LeCato, member of

the Senate; Hon. William P. McRae, member of the House of Delegates; Captain C. E. Vawter, Dr. E. M. Magruder, and Dr. William F. Drewry. Dr. Magruder did not serve. Colonel John Bell Bigger, the veteran clerk of the House of Delegates, was selected as secretary to the commission.

After a careful investigation into the subject of State care of epileptics, and visiting the Craig colony, in New York, and the Ohio Hospital for Epileptics (one of the commission, Dr. Drewry also visited the Pennsylvania colony farm), the commission submitted to the General Assembly of 1897-'98 the following conclusions and recommendations:

"1. That every principle of justice and humanity is in opposition to the indiscriminate commingling of epileptics, the insane, and paupers of every class, in the same institution. That neither the hospital for the insane nor the poor-house is a suitable place for an epileptic.

"2. That, as a rule, epileptics in private families are necessarily deprived of the ordinary advantages in making support for themselves, of acquiring an education, or of entering into any of the privileges or pleasures of life; but, on the contrary, they are a heavy tax upon others.

3. That it would ultimately be in the interest of public economy if the State would assume charge of all indigent epileptics and provide for them suitable means and ways by which certainly many of them would contribute to their own support.

"We would therefore recommend:

"*First.* That one of the State hospitals for the white insane be utilized in part for the care of all the insane white epileptics of the State, leaving the others for the accommodation of white insane persons who are not afflicted with epilepsy. At such hospital suitable buildings should be set apart *exclusively* for insane epileptics, so that their diet, employment, medical treatment, etc., could be regulated in the proper manner—things that are impossible to do when they are commingled with other patients. This policy has already been adopted (1896) at the Central Hospital for the colored insane, near Petersburg, where all the female epileptics occupy a separate building.* The result has been

*Last winter, December, 1900, a building was completed at this hospital for the accommodation chiefly of male epileptics, so now practically all the epileptics at that hospital are segregated from the other patients.

*See *Trans. Med. Soc. of Va.*, 1895, and *Jour. Am. Med. Ass'n*, November 2, 1895.

in benefit to both the epileptic and the non-epileptic insane of that institution.

"*Second.* That a colony, modeled in a great measure after the Craig Colony in New York, be established in this State for sane epileptics. There should be procured, either by purchase, or by long-time lease, a tract of fertile, productive land—say, 1,000 acres—in a healthful region, with an abundant supply of pure water, good natural drainage, and means for the ready disposal of sewage. The location should be near some large town, and easy of access from all sections of the State. Having selected the site, the colony should begin on a small scale and be gradually developed in a way that would seem best adapted to the needs and requirements of the class of patients for whose benefit it is established.

"In the beginning, only a few plain, inexpensive cottages—for the accommodation of, say, 100 epileptics and the required officers and employes—and necessary barns, stables, and out-buildings should be erected. Work-shops and other buildings for various trades and industries, hospital for the sick and infirm, hall for recreation, chapel, school-house, etc., should be built later on, as the colony develops. Farming, gardening, stock-raising, fruit culture, etc., should be leading features in the beginning.

"Incalculable benefit would be derived from the school in educating the children and young people, and from the shops, in teaching many of the beneficiaries trades and giving them industrial occupation. Indeed, many would be enabled, under proper supervision, to support themselves entirely while under treatment in such a colony. The labor the patients would do, such as working on the farm, in the shops, taking care of stock, doing general work, etc., would, we think, ultimately make the colony nearly self-sustaining.

"*Third.* That a pathological and clinical laboratory be established at the colony for the collection of a large number of epileptics in such an institution, under the treatment of a well-equipped hospital corps, including an expert pathologist, would afford opportunities for a scientific study of this widely prevalent and almost irremediable disease, which would eventually lead to more accurate knowledge of its nature and cause, hence more satisfactory results from treatment. Furthermore, under skilled medical and surgical treatment, combined with suitable dietetic, labor, and hygienic regula-

tions, a goodly number would be restored, or, at least sufficiently improved to go out into the world and earn a living for themselves.

"*Fourth.* That the colony be managed by a board of directors, composed of not more than five members, to be appointed by the Governor, by and with the advice and consent of the Senate. The term of office for each member should be five years. The board should appoint as superintendent a skilled physician, whose term of office should not be less than six years. The board should also appoint (but only upon nomination of the superintendent), the necessary assistant officers, fix their respective terms of office, salaries, etc.

"In our opinion the expense of establishing and equipping the colony should be borne exclusively by the State, but its maintenance should be paid for in part by the various counties and cities sending patients there—say, \$40 per annum for each indigent patient. Pay patients should be admitted on terms to be regulated by the board of directors.

"The commitment of pay patients should be voluntary on their part. Indigent patients should be committed by county or city authorities upon the certificate of a reputable physician. The number of patients receiving benefit from the colony should be proportioned among the several cities and counties. At first, as many as practicable should be taken from the poor-houses and hospitals for the insane. From a list sent by the local authorities the board of directors and superintendent of the colony should select such cases as in their judgment would be most suitable for residence in the colony. The object of this would be to prevent the crowding in at first of helpless patients, who could be of no service in developing the colony.

"The directors should be permitted by law to receive any gift or bequest of money or any donation, to be applied, principal or interest, to the erection of buildings, to the support or education of the patients, or to the general use of the colony.

"*Lastly.* While we believe there is urgent necessity for such an institution as we have outlined, we think it would be the part of wisdom in establishing a radically new charity, to consider carefully every step; therefore, we would recommend that the General Assembly appoint, or authorize the Governor to appoint, commissioners, whose duty it shall be to pursue this investigation further, and to get options on va-

rious sites and submit plans, estimates of cost, and such other information as may be desirable or necessary to give the Governor and the Legislature full information preparatory to the establishment of a colony for the curative, scientific, and economical treatment and care of epileptics in Virginia."

The commission was reappointed and requested to pursue the investigations further, and report to next session of the Legislature.

A bill providing for an appropriation of \$35,000, with which to purchase a farm and to construct thereon and equip suitable buildings, etc.—in short, to establish an institution on the colony plan—was prepared by the commission and introduced in the General Assembly of 1899-1900. After a hard fight, in which Senator LeCato did most valuable service, much to our gratification the bill passed the Senate *only four dissenting votes* out of a total of forty. The bill reached the House, however, too late in the session to be acted upon, though a personal canvass by Dr. LeCato and myself showed that a majority would have supported it; and to the credit of the State, the colony would have been a reality. Efforts will be made again at the next session of the Legislature, and there is fair prospect that the measure will go through both houses. The same bill, with some slight changes, will be introduced.

There is some difference of opinion in our State as to the best disposition to be made of insane epileptics. I think, however, the stronger sentiment is not in favor of the suggestion made by the commission—that is, to have the colony exclusively for sane epileptics (white), and care for all the insane epileptics in separate buildings at one of the existing institutions. It is probable that the commission will yield in the matter and recommend an institution for both sane and insane epileptics, thereby relieving the hospitals of all their epileptic insane, thus making room at those institutions for that many more insane not epileptic. The colored sane epileptics might be cared for in an industrial annex in connection with the Central Hospital. The bill will probably make that provision.

From careful and repeated investigations, I am satisfied that there are not less than 4,000 epileptics in the State. In the hospitals for the insane there are 300, or about 10 per cent. of the hospital population. As near as I can ascertain, there are about 200 in the city and county almshouses and local charitable institutions; the jails

harbor some in untold misery; and more than 3,000 are distributed elsewhere throughout the State,—in the hovels of the poor as well as the homes of the well-to-do.

One has but to consider for a moment the great benefits that would come to these afflicted individuals, to the family, to the community, and to the State from such an institution, to become an earnest advocate of its early establishment. Reflect upon the condition of the epileptic: Afflicted with a well-nigh incurable disease, tending to terminate in dementia, imbecility, insanity, and physical and moral degeneracy—a disease which is hereditary to a certain degree, that or some other neurosis being transmitted from parent to offspring with distressing certainty—can you conceive of a more deplorable condition to be in? Unfitted by such a malady for companionship with more fortunate fellow-beings, debarred from entering into fair competition in any field of human endeavor, deprived of ordinary pleasures and privileges, the epileptic—poor, unfortunate creature—is practically an exile in the community, and a burden to self as well as to others.

It is only at industrial and educational colonies, such as have been established in other States, and such as I have most earnestly advocated and shall continue to advocate for Virginia, that the humane, rational, and scientific treatment of epilepsy can be obtained. It is the duty of every physician, every humanitarian—indeed, every good citizen—to exercise his or her influence and put forth efforts for the amelioration of the deplorable condition of the epileptic. It will be a reproach upon this age of enlightenment, a reflection upon the benevolence and charity of civilization, if every State in the Union does not soon lighten the burdens of this class of God's afflicted creatures.

NOTE.—While Virginia hesitates and delays action in providing for her epileptics, other States and other countries have either established institutions for their unfortunates of this class, or are preparing to do so.

In each of the following States there is a colony or institution of some kind in which epileptics are cared for at the public expense—viz., Ohio, New York, Massachusetts, New Jersey, Michigan, Minnesota, Wisconsin, California, and West Virginia—9.

Texas is now constructing a large colony for

her epileptics, for which the last Legislature appropriated a liberal sum. The Missouri Legislature has appropriated \$30,000 with which to establish a colony in that State—2.

In each of the following States the matter of establishing a colony for epileptics is being agitated—viz., Alabama, Mississippi, Georgia, Maryland, Kentucky, Indiana, Illinois, Iowa, Connecticut, Pennsylvania, and Virginia—11.

In the following States there are institutions for epileptics, supported wholly or in part by private charity—viz., Massachusetts, Missouri, Pennsylvania, and Maryland—4.

AUTO-INTOXICATION AND ITS TREATMENT.*

By CHAS. H. SHEPARD, M. D., Brooklyn, N. Y.

Superintendent of the Brooklyn Heights Sanitarium, Etc.

Health is the normal or harmonious action of all the cells of the body, and disease is but the effort of the body to resist or expel any intruder, of whatever nature, and regain its normal condition. When the conservative vital forces are overcome, a poisoning of the system is the pathological result. This is established by the most unmistakable evidence. The origin of disease is frequently not suspected when, in fact, it arises simply from the imperfect digestion, assimilation and absorption of toxic material which the vital forces are unable to render fit for normal nutrition of the body. Alcohol intoxication is simply a degree of nerve poisoning. If alcohol is absorbed, it arouses the system to action, induced by vital resistance, to obtain relief from the intruding substance, and this is often mistaken for added energy.

Auto-intoxication is a self-poisoning of the organism created in the fulfillment of its own processes and the failure of the emunctories to expel the products. Their course may be in the intestinal tract or in the tissues themselves. We know that auto-intoxication causes depressed feelings by lowering the energy of the entire metabolism, and is a very common cause of weakening the functional powers of the body.

There are various toxic substances, derived from the intestines, food, and bile, that act as causative agents in the drama of auto-intoxica-

tion. The decomposition of fish, meat, salads, ice cream, vegetables, and even fruit, form toxic compounds of a most deadly character. Improper food, retention of excrementitious matter, altered secretions, and other causes, set up putrefactive changes, and the generation of toxins, which are auto-infectious. It is most likely that tumors, both of benign and malignant character, have their origin in chronic auto-infection of the intestines. The cause of rigors and fever in malaria proceeds from the destruction of the cells and the liberation of their constituent elements. A superabundance of nourishment in the blood, to say nothing of undigested nourishment in the intestinal canal, is dangerous, and when it accumulates in such large quantities that the emunctories cannot easily dispose of it, becomes a violent poison.

Man escapes intoxication by the intestinal, cutaneous, pulmonary, and renal emunctories. The healthy man is not attractive to the microbe. Disease infers an essential deterioration of the organism. It has been demonstrated that all the poisons pass into and out through the blood. Of the many functions of the body, probably the most important and least understood is the elimination of poisons. Certain people have a fine eliminative apparatus, equal to any amount of work which is demanded of it, but with those having poor excretory organs poisons readily accumulate. Disease may follow upon nerve reaction, but it is the deterioration of the organism which hastens its outbreak, and often renders it persistent and chronic. Men whose nerves are fatigued and excited by overwork or dissipation, upon being exposed to depressing influences, are easily overcome by disease-developing conditions, which would have produced nothing in perfectly healthy men.

The first and most important line of treatment of auto-intoxication is to prevent the formation of toxins. This is best secured by regulating the ingesta, prohibiting or limiting those articles that are known to be favorable to their formation, and next, to check their penetration into the system by preventing absorption, as well as to avoid whatever may tend to weaken the patient or detract from his power of elimination. In fevers, especially typhoid, the secretions of the digestive tube are dried up or perverted. It is, therefore, impossible to feed the patient, and naturally all attempts at alimentation should be condemned. When it is permitted, there usually follows an increase and

*Original abstract of a paper read before the Missouri Valley Medical Association, September, 1901.

prolongation of the fever. Even milk raises the temperature. Vegetable acids, like lime juice, are highly recommended.

Second, the use of intestinal antiseptics to absorb or precipitate the toxins, so as to render them innocuous. The administration of a poison to counteract one already located is of more than doubtful utility. Indeed, it is not without peril, not alone from the added poison, but from the complications that are sure to arise. The free use of pure water, which has always an absorbing capacity, is of undoubted value in absorbing and accelerating the free exit of any poison. Particularly is this the case with the third line of treatment, which is to hasten and increase their elimination. This indication is capable of fulfillment in a greater or less degree, according to the emunctory utilized. The common form is to stimulate the action of the bowels, which meets with but indifferent success. The free use of pure water, which has great absorbing capacity, is of undoubted value in diluting and accelerating the free exit of any poison. But remarkable results have been secured by stimulating the action of the skin, as well as of all the other organs, by means of hot air baths. The skin may be safely subjected to excessive perspiration, for by a judicious use of hot air all possible harm is avoided, and this not only relieves the kidneys, but acts in harmony with and quickens every natural function. The great perspiration of phthisis is an evidence of the natural struggle for elimination of toxic products by the skin.

It is easily demonstrated that in elimination lies our most potent means of relief from all blood poison, and of all means to promote this action the modern Turkish bath fulfills the greatest number of indications. Heat is its one essential feature. It will destroy the virus of animal poison. It takes no vital tissue from the body. Its processes are so pleasant that it makes a luxury of the treatment. The readiness with which it can be adapted to any condition is a strong point in its favor, and there are no unpleasant after effects attending its use. By a prompt resort to the Turkish bath, there is good reason to believe that many of the cases of blood poisoning, to which so many medical men have succumbed, could have been saved.

In order that the greatest benefit may accrue to the greatest number, and that the loss of life from auto-intoxication may be diminished in our land, there should be built at public expense

large public Turkish baths, as was munificently provided for by the Roman government centuries ago. The admission should be placed at nominal rates, so that every one could have the privilege of enjoying their benefits, and every public school, hospital, reformatory, prison, and insane asylum, and especially every soldiers' barrack, should have its well-equipped Turkish bath.

81 and 83 Columbia Heights.

GLAUCOMA.

ABSTRACTS FROM CONTRIBUTIONS TO THE CURRENT FRENCH OPHTHALMOLOGICAL PERIODICALS, AND DESULTORY COMMENTS UPON THE SAME.

[PAPER No. II.]

By JOHN DUNN, M. A., M. D., Richmond, Va.,

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The French ophthalmological journals for this year devote much space to glaucoma, its etiology and treatment. The most interesting and important of these articles is de Wecker's report, read before the French Society of Ophthalmology.

De Wecker* gives the *indications for anterior sclerotomy*: First, infantile glaucoma; second, absolute glaucoma, glaucomatous degeneration, conditions in which almost complete atrophy of the iris renders a properly performed iridectomy practically impossible; third, in prodromic glaucoma, where we cannot make cease the symptoms—namely, the transient dimming of vision and the rainbow colors about the light—which are so disquieting to many patients; fourth, as a diagnostic means in doubtful cases of simple chronic glaucoma; fifth, as of value where an iridectomy has proved insufficient, or its curative value has worn out; sixth, as an auxiliary to iridectomy.

The *principal indications for posterior sclerotomy* are to quiet the pains of absolute glaucoma and to prepare an eye for the proper execution of an iridectomy.

Of *sympathectomy*, de Wecker says: First, we must not substitute it for the ocular opera-

**Valeur de l'Iridectomie dans le Glaucome* (De Wecker—*Archives d'Ophthalmologie*, May, 1901.)

tions in simple chronic glaucoma; second, resection of the sympathetic must be reserved exclusively for those cases of glaucoma which we designate as malignant; third, the result of sympathetomy is uncertain; fourth, we must bear in mind that in case of failure of sympathetomy direct surgical intervention upon the eye is rendered more dangerous.

De Wecker says in regard to myotics, that while their use defers the day when an operation become a necessity through their use, many an eye has lost by delay its only chance to retain vision. *The operative effect is the more certain the nearer to the onset of the trouble we operate.*

De Wecker gives the following reasons for not excluding the simple chronic and non-irritative forms from the class glaucoma: First, the simple form often becomes transformed into the chronic irritative; second, the fact that some members of a family have the simple form, while others have the acute or chronic irritative; third, the fact that some patients have in one eye the simple form, in the other the acute or chronic irritative; fourth, the experimental observation that sympathetomy tends to transform simple chronic into the irritative form; fifth, proof that the simple form, when taken in time and properly treated, is as susceptible of cure as the irritative forms.

De Wecker reserves the use of eserine for those cases where, in spite of a glaucomatous excavation and an increased tension, the field of vision and vision remain perfect. The least contraction of the field of vision, or the least diminution of the usual activity, become the signal for operative intervention.

First, for *acute glaucoma*, the rule is iridectomy; second, for *chronic irritative glaucoma*, do an iridectomy, which may need to assist it the additional anterior sclerotomy. The value of operative intervention will be measured by the time at which the operation is done. The older the case, the greater the number of attacks; the greater the damage done the visual apparatus the less can operation accomplish; third, *Simple chronic glaucoma*. We must distinguish between simple chronic glaucoma and a morbid affection of the optic nerve, accompanied by a pre-existing physiological excavation. *The pathognomonic sign differentiating these affections is increase of intra-ocular tension.* Where this exists, simple chronic glaucoma is as amenable to operative intervention as

is any other form. Malignant glaucoma—and there is no operator who has done much glaucoma work who cannot recall more than one of these unhappy cases—is most frequently met with in the slower of the chronic irritative forms, where the attacks are frequent. An exceedingly valuable paper is this of de Wecker's.

Javal, in the September number of the *Annales d'Oculistique*, gives* in detail the history of his own "cas malheureux." When 42 years of age—i. e., in 1881—while engaged in the construction of the ophthalmometer, the first symptoms of his ocular trouble appeared in fatigue of the right eye. Shortly thereafter appeared the prodromes of glaucoma—blurring of vision, iridopsia, slight dilatation of the pupil, and transient increase of tension. These attacks yielded to eserine. Little by little they became more frequent, until finally the vision, after the attacks, did not return to what it was before them. At no time was there pain, or injection of the ocular tunics. In 1885—i. e., four years after the trouble began—an excavation of the optic disc was observed. In November, 1885, the clouding of the vision was very marked, in spite of the constant use of pilocarpine. On November 11th a superior sclerotomy was done. Appearance of phosphenes. On December 3d an inferior sclerotomy, and on December 11th an iridectomy was done. The eye gradually grew worse, until on February 19th the vision for this eye was abolished. On February 20th a posterior sclerotomy was done. The eye grew gradually harder and harder: the vitreous was filled with opacities. The eye remained a source of never-ceasing discomfort, and oftentimes of great pain, its general diseased condition becoming worse and worse, until March, 1900, when it was enucleated. When opened, it showed complete detachment of the retina, which remained attached only at the ora serrata and the papilla. Numerous retinal and sub-retinal hemorrhages, old and new, were present.

In 1885 the left eye saw for the first time colors about a lamp. In 1886 colors about a flame and slight dilatation of the pupil. Adopted a stringent diet (too late!). In 1887 gave up all unnecessary reading and writing. The papilla remained normal until November, 1895, when there was a glaucomatous attack, accompanied with slight pain and redness, which

* *Auto-Observation de Glaucome* (Javal—*Annales d'Oculistique*, September, 1901.)

subsided after two hours' use of pilocarpine. In February, 1897, pilocarpine has to be used daily. The disc is now considerably excavated. In October, 1898, the glaucomatous attacks are more frequent and last longer, and are of greater severity. The eye grows worse and worse. In February, 1900, Javal goes to England to consult an oculist, a friend. By this time the vision has been reduced to one-half. The visual field is contracted. The disc is somewhat excavated. The pupil is small, the anterior chamber is shallow. On February 7th an upward iridectomy and scleral puncture, 6 millimeters from the corneal margin, were done. In spite of this the tension increased, and the vision diminished. An inferior scleral puncture was done February 20th. On March 16th the right eye, as above stated, was enucleated. On March 23d the ciliary operation was done (hernia of the uveal body resulted). On April 6th the ciliary incision was enlarged. On the 11th the vision was reduced to nothing. On the 21st a posterior sclerotomy was done. On the 27th this incision was further enlarged, and again on March 1st. On the 6th a further posterior sclerotomy; on the 15th and 18th sclerotomies, one anterior and one posterior, were done. On the 25th the excision of the left superior ganglion of the great sympathetic was resorted to. On the 21st of June, 1901, the conjunctiva on the ball presented a uniformly slightly violet appearance. Cornea has preserved its transparency. Anterior chamber abolished. Iris in appearance normal. Pupillary diameter 4 mm. Lens generally clouded. Vision nothing. In conclusion, Javal says: "Je ne me permettrai pas de tirer des conclusions de tout ce qui précède." The above case, destined to become a classic, should be read carefully in detail, as it appears in the *Annales d' Oculistique*. It teaches many lessons, but none more clearly than that in glaucoma, the longer operative intervention is deferred the more hopeless becomes the case, the less efficacious the operative contortions devised by the mind of man. Glaucoma is a disease of which each attack puts forever out of commission more and more of the essential intra-ocular machinery. With each attack there is less and less of hope, for destruction of the essentials for hope increases. Javal's paper, read in connection with de Wecker's, adds to the value of both. Javal's report of his own case in no way lessens the value of iridectomy in glaucoma, in no way should make us

hesitate to resort to this most important procedure. It teaches that we should not allow a glaucomatous process to exist for four or five years, making use all the while only of the impotent eserine and pilocarpine. It teaches what we are to expect from surgical procedures after the glaucomatous destruction has far advanced. Unfortunately, the results to be expected in any given case of glaucoma cannot be accurately foreseen. The average case of this trouble is usually more or less well advanced before an oculist is consulted. I recall one case of double glaucoma, where, at the time I first saw the patient, the right eye was blind, hard, and the fundus not to be seen owing to cloudiness of the cornea. Glaucoma had made its appearance a year or more previously, and the existing attack was then of several days duration. An upward iridectomy resulted in restoring central vision to 16-15. The field of vision, however, was reduced by an irregular central circle of from 5 to 8 degrees. When last seen, three or four years after the operation, no change for the worse was demonstrable. There had been no further glaucomatous attack. Opposed to this I recall another case in which double glaucoma existed. It was absolute in the right eye, which showed a tension +3. The left eye was to palpation and to all appearances normal, save that there existed a mature cataract. The patient claimed that he could distinguish between light and darkness. The combined operation was performed, and the lens extracted in toto, the eye behaving at the time in every way as a healthy eye. Thirty-six hours later an attack of glaucoma set in, resulting in a dislocation forward of the apparently healthy vitreous, a large part of which was forced through the corneal wound. The after results were disastrous. Though this be so, yet glaucoma, when seen early enough, offers as the result of proper surgical treatment more hope than the many disastrous cases which come for relief in the late stage of the disease would indicate.

Dr. Abadie, in the May number of the *Archives d'Ophthalmologie*, writes of the indications for removal of the superior cervical ganglion in glaucoma.* Abadie claims that "glaucoma is due essentially to an active vaso-dilatation of the vessels of the eye," "is not a disease of the eye, but of the sympathetic, which innervates its ves-

* *Des Indications de l'Ablation du Ganglion Cervical Supérieur dans le Glaucoma*. Abadie—*Archives d'Ophthalmologie*, May, 1901.)

sels"; he hopes that "the study of the glaucomatous affections will mark the first step in the pathology of great sympathetic." Dr. Abadie offers no convincing proof of the truth of his belief; indeed, he offers no proof at all. He compares glaucoma, in its etiology, to "certain obscure forms of deafness," "to affections of the thyroid in exophthalmic goitre," "to certain obscure diseases of the heart and lungs," etc. We cannot follow the doctor in the darkness of this obscurity. Dr. Abadie thinks that he finds proof of his belief in the well-known facts that atropia increases the tension of the eyeball in the glaucomatous state, while eserine lessens it; in the fact that atropia used for several days continuously will lessen the visual acuity of an eye, which has simple chronic glaucoma, but will not influence the vision of an eye with optic atrophy with physiological excavation. Dr. Abadie states further, that "when an acute or chronic irritable glaucoma has been definitely cured by an iridectomy that the pupil remains more dilated than normal." He interprets this as proving "how erroneous is the theory which attributes the additional influence of atropia in glaucoma to the crowding back of the iris toward the filtration angle." "This new sign of a cure," Dr. Abadie continues, "is more important than the cystoid cicatrix." "On the other hand, iridectomy done in simple chronic glaucoma does not modify the size of the pupil, which preserves its normal dimensions before and after the operation, except, of course, for the part removed." (Compare de Wecker's views of simple chronic glaucoma.) "This integrity of the size of the pupil after iridectomy indicates that the operation has failed, probably because the vaso-dilators in play do not come from the intracranial plexus, but from the cervical sympathetic. And this should, accordingly, be attacked." We thus see that there are indications for sympathectomy, "which indications," Dr. A. concludes, "attentive study of clinical details will allow us to the better appreciate." While it is true that sympathectomy modifies the circulatory conditions of an eye in the glaucomatous state, we see no reasons whatever, theoretical or clinical, as yet adduced to make us believe either that glaucoma is one to "active dilatation of the intra-ocular vessels," or that sympathectomy offers, in any sense, a cure for the disease.

In the July number of the *Annales d'Oculistique*, Terson* has a rather desultory, yet inter-

esting, article on the subject of acute glaucoma, which he compares to acute œdemas. Terson concerns himself here only with acute glaucoma where the tension is high. He calls attention to the fact that glaucoma is a syndrome, of which the increased tension is one of the elements; that the high tension is the great cause of the cloudy cornea, of the emptiness of the anterior and posterior chambers, and of the degeneration of the intra-ocular structures. He claims that in all this there is no inflammation in the true sense; only certain congestive phenomena; no fibrinous exudate, but a sero-albuminuous one analogous to that fluid which the physiologists produce by strongly exciting the glandular nerves. The anatomical peculiarities of the ocular make-up determine the destructive results. There occur all over the body—e. g., in the eyelid, in the conjunctiva—similar congestive attacks with their sero-albuminuous exudates, which may occur suddenly and with great disturbance, or recur with less force time after time in the same area. Compare the history of glaucomatous attacks.

Terson then describes the conditions existing in acute œdema of the lungs. He thus places glaucoma among the neuro-arthritis diseases, diseases resulting from the presence of a general intoxicant. Although not an infectious disease, it may have a general intoxicant as its immediate, exciting cause—for example, erysipelas, la grippe, many general infections, not to mention the diatheses, rheumatism, gout, etc. The role of the nervous system in the neuro-arthritis is well known, and at times peculiar causes bring on these acute local manifestations. He mentions an attack of acute glaucoma following upon a heated debate; another brought on by passing the catheter through the lachrymal duct. Terson insists that the ground must be prepared for the attack to be possible. One inherits a predisposition to glaucoma, because one inherits a neuro-arthritis diathesis and a hyperopic eye. The ultimate mechanism which determines the œdema and the serous exudation cannot, says Terson, as yet be accurately stated. "Is it," he asks, "an active vaso-dilatation?" "Is it a spasm of the arterioles and of the capillaries?" "What is the role of the sympathetic? of the trigeminal?" Masius says that a simple, active hyperemia is incapable of causing an œdema, and believes that certain lesions of the capillary walls, augmenting their permeability, are the active causes. Is it simultaneous paresis of vaso-constrictors and dilators? Terson adds that some

**Sue la Nature du Glaucome Aigu.* (Terson—*Annales d'Oculistique*, July, 1901.)

tion of the sympathetic has not been able to prevent the appearance *later* of acute glaucoma; that its only effect is to dilate a little the sclerosed capillary and arterial system of the sub-acute and hemorrhagic glaucomas. For Terson the iris is a powerful agent of strangulation, for the relief of which a scleral iridectomy is one of the surest resources. Such is a synopsis of Terson's paper, which, while it contains little that is new, affords a field for much discussion. There are many reasons for believing that a large proportion of all glaucomas are of the nature of gout. If this is so, then we see that we must seek our causes in the conditions of the blood and the changes which the gouty blood causes in the endothelium of the intra-ocular vascular system. Haig believes that excess of uric acid alone is responsible, and produces its effects by obstructing the capillaries, with a resulting high blood tension. It is not unlikely, however, that other substances, found in the blood—the phosphates, for example—play no unimportant part in the production of many gouty manifestations. If gouty, neuro-arthritis, conditions predispose to and actually bring about glaucoma—and they, under certain conditions, unquestionably do—then the ophthalmologist has to turn over his case to those who study the chemistry and physiology of the blood, and ask them to tell him what these blood changes in gout are; how it is that they bring about high blood tension; what is their effect upon the endothelium of the vascular system, especially of the capillaries and lymphatics; how it is that when the blood is in a certain chemical state that a certain class of injuries to certain parts of the body are liable to become the seat of what we call "gouty inflammations" (gout is manifested acutely, sub-acutely, and chronically). They must tell us what are the actual changes resulting in the gouty swelling. They must tell us why it is that sooner or later not only the endothelium, but the vessel walls become the seat of permanent changes (an explanation not difficult to deduce). They must tell us why the vessel walls withstand so many insults, repeated over and over again, through so many years before they yield demonstrably. They must tell us the weak points of the "inherited gouty inheritance." These questions answered, and ophthalmology will guarantee to explain all of the now unanswered questions of glaucoma. Many interesting facts, although they are viewed only from one standpoint, are made clear to us in

Haig's great book on uric acid, a work worthy of study-time from every ophthalmologist.

In the same number of the *Annales* in which appears Terson's article, *Querenghi** writes of *the operability of glaucoma without iridectomy*, and *Motais*** of *posterior sclerotomy, its technique, its results, and its indications*. The more interesting of these two articles is the latter. Motais advises that the point of selection for posterior sclerotomy be far enough back to be within the limits of the capsule of Tenon. "Upon the borders and in the intervals of the inferior, internal, and external recti, if we puncture 10 mm. from the corneal margin and incise 3 mm. forwards, we can feel assured that we shall be entirely within the serous cavity of the capsule." For the region of the superior rectus we must carry our point of puncture back to 12 mm. Motais' method of procedure is as follows: The eye being prepared, he separates the lids with two fingers of the left hand; the patient turns the eye strongly toward the side opposite to the point of puncture; the knife, a de Graefe cataract knife, is then forced 4 or 5 mm. into the vitreous the sclera is then cut slowly 3 mm. towards the cornea, when the knife is turned, and a slight transverse cut is made. The eye is then banded. For several days thereafter massage of the eye is resorted to. Posterior sclerotomy is resorted to in absolute glaucoma to save the ball. Done for this purpose Motais has had excellent results. This operation can be repeated at different places, if necessary.

In acute glaucoma, do first an iridectomy. In some cases of this trouble, however, iridectomy, even when assisted by an anterior sclerotomy, fails; Motais then advises posterior sclerotomy. Posterior sclerotomy is also indicated to prepare an eye, affected with acute glaucoma, for an iridectomy. All operators know how difficult at times an iridectomy is to properly perform in acute glaucoma; how, at times, it seems impossible to avoid injuring the lens. Motais praises posterior sclerotomy as a means of reducing here at once the tension. In prodromic glaucoma, where iridectomy is rarely, if ever, resorted to, Motais advises the use of posterior sclerotomy as a method by which, in some cases, at least, the annoying symptoms are kept

**Encore du Glaucome et de son Operabilite sans l'Iridectomie.* (Querenghi—*Annales d'Oculistique*, July, 1901.)

***De la Sclerotomie Posterieure, son Procidé Rationel, ses Resultat ses Indications.* (Motais—*Annales d'Oculistique*, July, 1901.)

away. In simple glaucoma Motais has no experience with this procedure. In secondary or consecutive glaucoma, while we should bear in mind the initial cause, adherent leucoma, posterior synechiae, dislocation of the lens, etc., we should also bear in mind that posterior sclerotomy has from time to time its indications, as it has also in certain cases in those transient glaucomatous conditions, which, at times, become permanent, and which we find not infrequently accompanying severe iritis or serous irido-choroiditis.

On this subject Motais makes the important statement: "Here my experience is extensive." In traumatic cataracts a posterior sclerotomy will cause to cease all of the glaucomatous symptoms, and allow us to choose our own moment for extraction, even though we may wish to delay for quite a while. In iritis and serous irido-choroiditis, permanent glaucoma can be prevented, and the transient attacks, if present, immediately relieved. We can then use atropia ad libitum. I shall further add that not only has posterior sclerotomy, done in these cases, been always free from complications, but it has always proven beneficial in hastening the cure of the primary disease."

Querenghi writes of the advantages of anterior sclerotomy, which he performs by entering a de Graefe knife into the posterior chamber, passing through the cornea 2 mm. from its border. He then forces the knife slowly along the chamber some 5 or 6 mm., the edge of the knife being turned toward the sclera. He next withdraws the knife, forcing its point firmly against the sclera while so doing. "By this operation one obtains a sufficiently large communication between the supra-choroidal space and the posterior chamber." "The scleral wound is too small to admit of prolapse of the iris." Querenghi reports in detail ten cases operated upon by him by this method during 1900. The cases are interesting, but do not bring others to his conviction, that "iridectomy is neither necessary nor useful in the treatment of glaucoma." Dr. Querenghi gives no special indications for the use of his operation.

314 East Franklin street.

"Carnival Week" in Richmond was remarkably free from accidents, none of a serious nature being reported.

TWO CASES: (1) TRANSVAGINAL BAND OBSTRUCTING LABOR; (2) PROLAPSED OVARY SIMULATING DIRECT INGUINAL HERNIA.

By E. T. BRADY, M. D., Abingdon, Va.,

Member Medical Examining Board of Virginia, Etc.

(1) Transvaginal Band Obstructing Labor.

Mrs. H., age 38; married two years. First labor, very fleshy, history good. Called to attend in labor, I found the fetal head presenting at the vulva, and decided bulging of the perineum. Pains were frequent and severe. Expecting immediate completion of labor, I waited half an hour, when—the pains ceasing and there being no advance—I applied short forceps, using quite powerful traction, without result. Lubricating my hand and introducing it beside the head, I found the child's feet on its breast, just above the chin. Following up the legs, I found that the child was doubled over a transverse band, reaching entirely across the vagina. The band was dense, fibrous, almost tendinous. The whole child had been expelled from the uterus. The head and trunk were on the posterior side of the band; feet and legs were on the anterior side. Sawing off one end of the obstructing band with my finger nail, the child was easily delivered. I then pulled down the band and severed the other end. The band was attached to each side of the vaginal wall one-half inch below the uterine attachment. It was semi-tendinous, contained a minute artery, and was evidently congenital. Band was four and one-half inches in length, one-fourth inch in diameter, almost round, and covered with a sheath of mucous membrane, which was firmly attached. Child normal, weighing seven and one-quarter pounds. Recovery of mother uneventful. I had not seen or heard of a similar case, but have since found several records in the Surgeon-General's office at Washington, D. C.

(2) Prolapsed Ovary Simulating Direct Inguinal Hernia.

Mrs. C., age 40; married fourteen years. Healthy till seven years ago, when, after a difficult labor (unable to state cause of difficulty), she suffered frequently from soreness in the left iliac region. Four years since, while menstruating, she felt a "lump" in her groin, and suffered excruciating pain in the "lump." She

was given opiates, which modified the pain somewhat, but she had no real relief until "something would flop back" and the lump would disappear. Treated by several (without examination), she grew worse. I saw her during one of her painful attacks, and, upon making an examination, I found what seemed to be a small direct inguinal hernia on left side. It was intensely painful, so much so that the least pressure on manipulation caused vomiting. Under chloroform, the ovary could be distinctly made out and easily reduced, when the pains ceased. There was decided prolapse of uterus. Replacing the uterus and maintaining it in position with cotton tampons, she has had no further trouble. During two subsequent menstrual periods she has worn a two-and-one-half-inch soft rubber ring pessary, and there has been no return of hernia, which had heretofore accompanied every menstruation. Should it recur, she has consented to have the ring stitched.

This case is not of sufficient rarity to justify publication, except to impress upon all, more especially the younger men, the propriety of and necessity for a thorough examination before arriving at a diagnosis or prescribing treatment.

CLINICAL EXAMINATION OF THE BLOOD.*

By L. H. WARNER, A. M., Ph. G., M. D., New York, N. Y.

It is only within recent years that more than ordinary attention has been directed to that branch of scientific medicine known as hæmatology. A brief review of the addresses in medicine and surgery before the leading Medical Associations reveals the fact that the orators gave more than ordinary attention to the clinical examination of blood. Dr. John M. Wyeth, of New York, stated that the blood is one of the most attractive subjects of laboratory research work, and that in the *proper* study of a patient, a knowledge of the blood is as essential as that of the urine. Dr. Frank Billings, of Chicago, who delivered the address in medicine before the Mississippi Valley Medical Association at Put-in-Bay, Ohio, laid special stress upon the value of blood examinations.

It is my intent to bring before the medical

profession the few *faulty methods now employed in practical blood work.*

Our text-books instruct us to wash the lobe of the ear or bear of finger—whichever might be preferred—with soap and water, antiseptic solutions, or plainly hot water, to rub the part well and dry, after which to make a puncture with a lancet or surgical needle. If either soap or antiseptic solutions are used to clean the part where the puncture is to be made, then the chemical substances contained in the former will be sufficiently fast resorbed in the near underlying tissues to cause histological changes of the red blood cells. If friction is used to dry the parts, then the sudden, if only momentary, production of thermogenesis will cause an equivalent increase of leucocytes, and in both instances the blood examination would cause errors.

Let your patient immerse his or her hand or ear in lukewarm water for a few minutes, and let the finger or ear dry at ordinary temperature. This is sufficient to remove all gross dirt; furthermore, the smearing of first drops of blood around the puncture will make the surrounding surface thoroughly antiseptic.

The exhibition of a lancet or surgical needle will ordinarily cause sufficient fright to your patient to create an immediate leucocytosis of shock. I use a blood lancet, a miniature scarificator, which can be set to make punctures of any desired depth, and which can be hidden in the palm of the hand without the patient knowing or seeing it.

We are taught to prepare our blood specimen by heating same over an alcohol flame, or by placing it in alcohol and ether for 24 hours. Heating the specimen over alcohol flame will cause the coagulation of the albumen of the blood plasma, and subsequent contraction of the blood cells; immersing the specimen in alcohol and ether produces severe histological changes. Alcohol and ether are the solvents of nuclein, which is the substance of the nucleus of the leucocytes, and hence numerical counts of leucocytes will lead to errors.

Blood specimens, as soon as taken, should be placed between two watch glasses, or petri dishes, until dried by normal temperature, which requires but a few moments. They should then be placed in the hot oven at a temperature of 98 degrees for twenty-four hours.

Study the difference in histological structure of the specimens obtained from the same patient,

* Presented before meeting of the Medical Society of the Missouri Valley, St. Joseph, Mo., September 19, 1901.

but prepared by the two different methods. Would the report as to measurements of corpuscles in the fresh and stained specimen, if differing, and thus presented before any court of law, be credited? With my method the measurements of the corpuscles in both specimen will exactly correspond. These are the important points upon which I desired to touch under the heading of practical work.

Relative to experimental work, I have selected the blood work now done in cases of malaria. First of all, we note in all cases of malaria a reduction of hæmoglobin and red cells, and an increase of white cells. Metchnikoff teaches us that the leucocytes attack any and all foreign material in the blood; other investigators attribute to the red corpuscles the function of oxygen carriers—both of which teachings have been repeatedly corroborated. Hence the physiological action of our therapeutic agent employed in malaria should be estimated by the action and histological structure of the red and white corpuscles. Activity and health of the red corpuscles is measured by the amount of hæmoglobin within them, and their oxygen carrying power by their full rounded form. The phagocytic properties of the leucocytes are measured by the mononuclear nucleus. As a rule, the physician will resort to quinine sulphate medication.

Regarding this subject, I call the attention of hæmatologists to my paper on "The Blood and Quinine in Malaria," published in the *Medical Herald* of December, 1899. The tests there reported have been repeated by me with corroborating results. But learning of the good results some physicians have with quinine in malaria, I have again started a new series of investigations, studying only the blood while employing the various alkaloids of cinchona, cortex cinchona rubra and flava, and preparations from the latter two.

An objection to most of the elixirs of cinchona appears to be the large amount of syrup, which creates acidity and flatulency, recognized in the blood by a mild digestive leucocytosis. Another objection to other cinchona elixirs is the use of sesquioxide salts of iron in their manufacture, when the combination of iron and cinchona is wanted. The cinchona iron combination is most desirable in the treatment of malaria, providing we can obtain a preparation containing the protoxide of iron. Protoxide of iron, as near as possible, approximates to the peculiar

protomagnetic oxide of iron (hæmoglobin) found in the red corpuscles.

I happened to search for information relative to iron and cinchona in the very earliest textbooks and medical journals, and learned of elixir cinchona eum ferrum protoxide, also known as Nichols' Bark and Iron, manufactured in 1856 by Billings Clapp Co., of Boston, Mass. I sent for some of this product, and found it very palatable. Chemical tests for cinchona and iron were positive. Fed to animals, this product caused rapid increase in hæmoglobin and red corpuscles, ferocious appetite, and increase in weight, and I subsequently kept chemical records of temperature and blood examinations of a number of cases of malaria, in which tablespoonful doses of bark and iron were given every four hours; oftener if attacks occurred. Illustration of blood of cases 11,273, 11,291, 11,293, 12,003 show upper margin blood at beginning of treatment, lower margin after two weeks' medication. In all four cases hæmoglobin estimation varied from 37 per cent. to 49 per cent. Red cells, 2,300,000 to 2,900,000; white cells, 8,500 to 10,700. At the beginning of treatment, the quartan malarial parasite was observed in each specimen, general appearance of red corpuscles, flat, thin, malformed—a good picture of chronic anemia plus malarial plasmodium. White corpuscles, mostly polymuclear and inactive. Within two weeks the hæmoglobin varied from 59 per cent. to 64 per cent.; the red cells from 2,800,000 to 3,700,000; white cells, 8,000. The red cells were well filled and round; the white cells had few polymuclears, some mononuclears, and a large number of young leucocytes. Temperature of patients steadily declined; none of the patients suffered from headache or nausea; the urine increased in volume, acidity, and specific gravity—in fact, all symptoms proved favorable after the first day's treatment. I attribute the rapid disappearance of the malarial parasite from the blood to the anti-malarial properties of cinchona, and the rapid reconstruction of the blood to the chalybeate tonic effect of the peculiar combination of the protoxide of iron with the cinchona bark.

In conclusion, I would beg a careful study of the micro photographs of the blood in these cases, noting especially the change of histological structure of both the red and white corpuscles.

217 west 106th street.

THE MOSQUITO.*

By ENNION G. WILLIAMS, M. D., Richmond, Va.

Professor of Histology, Pathology, and Bacteriology in Medical College of Virginia; Pathologist to Old Dominion Hospital, etc.

I am not an authority on the mosquito, and the information I am about to impart is derived chiefly from the United States Government reports and that valuable book, "The Mosquito," by Dr. L. O. Howard, our government entomologist. This book should be widely distributed in every community where there are mosquitoes and malaria.

Like so many advancements in medicine, the mosquito theory of the transmission of disease has been subjected to the purging fire of ridicule and skepticism. The theory is still in its infancy, and may be modified in the process of further investigation; but the fact is established that mosquitoes are concerned in the transmission of three diseases; or, in other words, that they are the intermediary hosts in the development of the micro-organisms of malaria, yellow fever, and filariasis. Even if this were not true, knowledge of the mosquito might still be within the sphere of the practitioner who is concerned in the promotion of health and comfort, as well as in healing the sick. Who can deny that the common culex, with its proclivities for sucking human blood, is not a disturber of the peace and a public enemy, as well as her sister—the murderous villain—the anopheles? A member of the Academy is absent to-night because an abraded mosquito bite furnished an open door to the entrance of pyrogenic bacteria.

It is interesting to know that the relation between mosquitoes and malaria was first suggested about twenty years ago by an American physician, Dr. A. F. A. King, and first demonstrated by an Englishman, Dr. Ross, and later on by the Italians, Bignami, Grassi, and Bastianelli, and the German Koch.

There are about two hundred and fifty known species of mosquitoes, of which only about thirty have as yet been found in the United States. They are very widely distributed. The gold-seekers of Alaska have as great stories to tell of their numbers and ferocity as the pleasure-seekers of the Jersey coast. A gentleman recently wrote from Alaska that they "existed in countless numbers, driving us to the verge of suicide and insanity." It is said that "in Lap-

land their numbers are so prodigious as to be compared to a flight of snow when the flakes fall thickest, or to the dust of the earth. The natives cannot take a mouthful of food, or lie down to sleep in their cabins unless they are fumigated almost to suffocation. In the air, you cannot draw your breath without having your mouth and nostrils filled with them." Indeed, some of the mosquito stories vie in point of credibility with the proverbial fish stories. Perhaps, the fact that three of the four stages of their life are spent in water, would justify one in speaking of mosquito stories as fishy.

The most classical and historical account of the effects of these insects is that given by Theodoretus, who said that when Sapor, King of Persia, was laying siege to the town of Nisibis, his army—men, elephants, and beasts of burden—were attacked by a plague of gnats, compelling him to raise the siege, and putting his army to route.

The life history of the mosquito is divided into four stages—the egg, the larvæ, and the pupa, and the adult mosquito. Each stage is distinct, and is brought about by a sudden transformation. The new form comes from the shell of the previous form. The eggs are laid upon the water, about two hundred to four hundred at a time. The larva and pupæ live in water. They are, however, true air-breathers, and have to come to the surface every minute or two to breathe. The length of a generation depends upon the temperature and other surroundings: Egg stage, eighteen hours to three days; larval, seven to sixteen days; and the pupal stage, two to five days. The average combined life of the three stages is twenty-four days. They pass the winter as adults. Hibernating mosquitoes may frequently be found during the winter months on the walls of barns, in cellars and garrets, beneath large leaves of trees, as the magnolia, and clustering in sheltered places beneath the eaves and in evergreen vines.

The mosquitoes are normally vegetarian in their diet, and do not at all require blood for their sustenance. Only a small proportion of them ever have an opportunity to satisfy this depraved taste, for countless numbers of them live and die in swamps which warm-blooded animals never penetrate; and, moreover, they are found in the uninhabited regions within the Arctic Circle.

The *genera* with which we most have to do are the *Culex* and *Anopheles*. The males of both

*Read before the Richmond Academy of Medicine and Surgery, September 24, 1901.

families are readily recognized by the antennæ, which are densely covered with long hairs, analogous to a bushy moustache; in the female, the hairs of the antennæ are short and very sparse. The mouth pieces of the male are not developed to the same degree of perfection for boring the human cuticle as are those of the female. They could not draw the blood if they would. They are, therefore, harmless, and the females are the members of the family who use their mouths most effectively—a not inhuman characteristic, though not a commendable one.

Comparative Description of Culex and Anopheles.

The eggs of the *Culex* are found in an irregular raft-shaped mass, which is usually something like a pointed ellipse—somewhat convex below and concave above—all the eggs standing on end and closely applied, side by side, in from six to thirteen longitudinal rows, with from four to forty eggs in a row. The mass is about a fourth of an inch in length, and gray-brown in color. The eggs of the *Anopheles* are scattered loosely upon the surface of the water, each egg lying upon its side. They are not attached, except that they naturally float close to each other. They are usually from forty to one hundred together.

Larvæ of the two forms differ in their structure, food, habits, and customary position in the water. That of the *Culex* has a much larger head than that of the *Anopheles*. It spends much of its time feeding at the bottom; and when it is at the surface, it holds its body at an angle of 45 degrees, thrusting up through the surface film its air tube, which projects from the body near the tail. The larvæ of the *Anopheles* habitually remain at the surface. They hold their bodies parallel with and immediately below the surface film. The long fringes of the mouth parts of both species work violently and continuously, and cause a constant current toward the mouth of particles floating on the surface of the water, which thus gradually converge to this miniature whirlpool and enter the alimentary canal. It has never been observed that male mosquitoes sing.

Pupa of both forms breathe by means of tubes resembling ears on the top of their head. The pupa of the *Culex* has not so large a head, and hangs more vertically than the pupa of the *Anopheles*.

The characteristic points of difference be-

tween the adult *Anopheles* and *Culex* are the presence of dark or brownish spots on the wings of the former, due to thicker growth of fine hairs in these regions. The palpi are as long as the proboscides. Thus observing the *Anopheles* with the unaided eye, or with a hand magnifying-glass, we see five projections from its head, the central one the proboscis, and on either side the palpi of equal length with the proboscis. External to these are the hairy antennæ. In the *Culex*, the palpi are only one-third as long as the proboscides. Another point of difference is that the song of the *Anopheles* is several notes lower than that of the *Culex*. Dr. Howard facetiously remarks that an interesting parallel to this is the fact that the villain in the play usually has a base voice.

It is said that in the resting position of the *Anopheles*, the body and the proboscis are in a straight line, and almost vertical to the surface; but that the body of the *Culex* rests parallel with the surface, and the proboscis is bent downward, giving the insect more of a humpbacked appearance.

Mosquitoes breed wherever there is standing water; as swamps, rain barrels, cisterns, holes in the ground, old tin cans, broken bottles, and, in fact, any place where water stands for two or three weeks should be looked upon as a breeding place. The larvæ of the *Anopheles* have a special fondness for pools near a river bank and among the rocks where there are water plants. I have not been able to find any larvæ of the *Anopheles* in rain barrels or small pools in the city, but I did find some among the rocks on Belle Isle. Mosquitoes do not thrive in salt sea water, only in fresh or brackish water.

Knowing now the life histories and characteristics, we can intelligently direct our efforts at their extermination. Among the natural enemies of the mosquito are dragon flies. Not only as adults do they capture and devour adult mosquitoes, but their water forms feed upon those of mosquitoes. Larva and pupa furnish juicy morsels to the other forms of animal life that dwell in the same pool. Little fish eat them. It was interesting to find, while recently looking among the rocks at Belle Isle, that in those holes where I found other forms of animal life there were very few or no larvæ, whereas, in other pools where there was not other animal life, they flourished abundantly. Leather-winged bats and other birds feed upon them. Perhaps the ladies would have less antipathy to the

bats that set up such a commotion by their presence in a parlor on a summer's evening if they knew that the bats' chief occupation in life was to make the insects "cease from troubling."

Many drugs have been used to keep away mosquitoes—camphor rubbed upon the face or hands, or a few drops put on the pillow at bedtime; oil of pennyroyal and the oil of lavender have this effect. Among the remedies for bites have been recommended glycerine, indigo, and household ammonia. An old-fashioned way to kill mosquitoes is by means of a tin cup containing kerosene nailed to the end of a stick long enough to reach the ceiling. The cup is placed under a mosquito, which drops into the oil and dies.

The proper way to fight mosquitoes is by measures preventing their development. This is accomplished by abolishing the breeding places and by destroying the larvæ. In nearly every locality these measures are feasible and practicable, and there is no necessity for mosquitoes. Their presence may usually be attributable to ignorance or negligence on the part of the community or individuals. The three main preventive measures, as Dr. Howard says, are the draining of breeding places, the introduction of small fish into fishless breeding places, and treatment of such pools with kerosene. Kerosene on the water prevents the larvæ and pupæ from projecting their air tubes through to the surface, and obstructing the tubes causes their death. These are three alternatives, any one of which may be used where there are reasons against the trial of others. The quantity of kerosene necessary is approximately one ounce to fifteen square feet of water surface; and ordinarily, the application need not be renewed for one month.

Life History of the Malarial Parasite in the Mosquito.

As you are all familiar with the development and the life cycle of the malarial plasmodium in the blood of animals, I will describe only the cycle of development of this parasite outside the human body, which so far has been found to occur only in the body of the mosquito of the *Anopheles* variety. Instead of the parasite multiplying by the formation of spores as in the blood, the parasites, which are taken into the stomach of the *Anopheles*, develop into two forms—one having projections or flagella, the other without them. The flagella break off from

the one and fuse with the other form. The union of the two constitutes the fertilization of the organism. The fertilized organism now attaches itself to the wall of the stomach and penetrates the inner coat, locating itself just under the outer muscular coat of the stomach. It now increases rapidly in size, until eventually it becomes five times as large as at first. It is now known as a *zygote*. Upon the surface of the *zygote* clear spaces, which are called centromeres, begin to appear. These centromeres are soon surrounded by minute, short, dark lines, which, under a very high power of the microscope, are seen to be spindle-shaped cells, known as blasts. The blasts increase in size until they fill the entire *zygote*, obscuring the centromeres. Then the *zygote* bursts and the blasts are liberated through the muscular wall of the stomach into the body cavity of the mosquito. The blasts are very active, and penetrate into the tissue of the salivary duct, and so into the proboscis of the mosquito. With the saliva or poison, they enter the blood of the next warm-blooded animal that the mosquito bites. The time required for the development of the blasts in the mosquito is about twelve days. It is supposed that the blasts enter the red blood corpuscles, and as the hyaline form of the malarial plasmodium, the development proceeds.

THE CONSERVATIVE SURGICAL TREATMENT OF APPENDICITIS.*

By W. E. FITCH, M. D., Savannah, Ga.

When asked by the efficient chairman of your programme committee to prepare and read a paper before this meeting, I was at a loss to decide upon a subject which would interest you, but felt that thought and experience justified the choice of a topic of such widespread interest as the one I have chosen, even though the literature of the past few years teems with contributions to the subject. It needs no apology that I should speak of that which has appalled the modern surgical world by its gravity and ravages, and taken from us some of our brightest lights, best leaders and co-workers—Agnew, Little, Griswold, Lincoln, and a host of others—

* Read before the Tri-State Medical Society of Georgia, Tennessee and Alabama, at Nashville meeting, October 8, 9, 10, 1901.

which has come to the doors of our homes and stricken so quickly when it did come. The subject has few rivals in the domain of surgery, and takes first rank to-day with typhoid pneumonia and rheumatism in medical thought.

There is yet a widespread division in practice as to the wisest care of any case. One class of practitioners will urge a non-operative course of treatment; others will urge an immediate operation.

I shall therefore speak on the *conservative surgical treatment of appendicitis*, and will not attempt to review its history, nor worry you with statistics, or make an exhaustive consideration of the subject, enumerate the numberless contributions to its literature, nor reiterate the oft-repeated methods of operation, but will try to impress upon your minds the advantages of, and necessity for, the early operation in all cases of appendicitis.

The term "conservative surgery" is misleading, and as interpreted frequently conveys the wrong impression. It usually implies refraining from an operation. Ideal surgery, in the broadest application of the term, is preventive surgery.

What is conservative surgery in appendicitis, and to which class of practitioners does the term apply? Those who operate promptly, delaying no longer than necessary to make careful preparation? or, those who wait for symptoms which render an operation imperative? or, again, those who, as a matter of routine, trust the *vis medicatrix nature*, plus diet, rest, opium, and purgative salts *ad nauseum*?

What does the practice of each of the above classes of practitioners conserve? What is gained by non-operative treatment? Possibly, an operation for the time being, but it is highly probable that cases so treated will recur (McRae), and ultimately have to seek surgical intervention; the appendix, a useless organ, is saved to be a constant menace to future life. Why retain it when its removal causes no disturbance of anatomical or normal relations, nor change in the functions of other organs, and is followed by no consequent disturbing sequences?

We hold that non-operative treatment is justifiable only when the consent of the patient, or those responsible for him, cannot be obtained; or, when he is placed under conditions such as may prohibit the employment of proper surgical aid.

Does operative intervention prolong life,

health, and usefulness? We answer in the affirmative. What, then, are the indications for chirological treatment?

I. In all cases when severe symptoms come on suddenly, either at the beginning or during the course of the disease.

II. When, in a mild case, the symptoms gradually increase in intensity to the end of the second day.

III. Patients in whom radical measures are undertaken sufficiently early in the attack (before the end of the first twenty-four hours) to give uniform assurance that the infection is confined to the appendix, and to those especially who, having been treated medicinally with recovery, are consequently the more liable to a recurrence.

IV. Cases which hold out a reasonable hope that the appendix can be removed with safety, although infection has passed beyond that organ. This condition arises about the end of the third or beginning of the fourth day.

V. Cases in which the question simply resolves itself into that of opening an abscess formed in a mass of adhesions, which condition usually occurs at the end of the fifth day.

VI. When, with abdominal distension, a pulse of 120 or over, diffusion of pain, and other evidences of general peritonitis come on at any time during the course of the disease.

We should operate as soon as the diagnosis is confirmed and the necessary preparations can be made, except in some cases in which, having been treated medicinally, the surgeon is not called until the third, fourth, or fifth day of the attack. The question then arises whether or not operative procedure is contraindicated on account of the impossibility of removing the appendix without breaking down the adhesive barriers which nature has thrown out to protect the peritoneal cavity.

We may be confronted by cases and conditions in which it is too late for an early and too early for a late safe operation. In deciding this question, much will depend upon the experience of the operator and the facilities at his command for meeting emergencies as they may arise.

With thoroughly competent, well-trained assistants to keep the field of operation well isolated from the rest of the peritoneal cavity, as well as the small intestines out of the way, the operation at this period of localized peritonitis, with or without sero-purulent collections, is both

safe and advisable. However, it will be next to impossible to avoid breaking down some of the adhesions, but with care on the part of the operator, and a perfectly trustworthy assistant, removal of the appendix may be accomplished without undue risk of infecting the general peritoneal cavity. The present consensus of opinion of the leading surgeons inclines to an early operation.

Dr. George R. Fowler, of Brooklyn, says: "As soon as the diagnosis of progressive appendicitis is assured, the abdomen should be opened and the appendix removed."

Dr. Charles P. Noble, of Philadelphia, adds: "Every case, promising or unpromising, should be treated by a surgical operation at the earliest possible moment."

Dr. Cartledge, of Louisville, states: "We should operate on every operable case as soon as the diagnosis is confirmed."

Mistakes are made by waiting and watching for symptoms to manifest themselves, and thereby rob the patient of one of the best means known to science at the present day of saving life in this dreadful disease."

Dr. McBurney avers "that an operation is indicated before the pathological process has reached a very advanced state. This cannot be measured by time. In some the rapidity of the process is very marked, in others very slow. Some patients call an attendant on the first day; others not until the second or third."

Dr. Hurd asseverates that, "The most successful operations are those performed within twenty-four hours after the onset of the attack."

Dr. Gage, of Boston, asserts that, "The earlier the operation, the less need of drainage, and the firmer the abdominal wall. Surgeons seldom regret an early operation."

Dr. Richardson, reporting one hundred and eighty-one cases, concludes as follows: "An operation is called for immediately in a sudden severe attack of appendicitis with pain, vomiting, more or less distension of the abdomen, with a high pulse."

Dr. Myer, of New York, avers that, "In acute appendicitis, if the pulse goes above 116 or 120, the indication is for an immediate operation."

My experience coincides with the views of a large number of representative surgeons that the early operation is the only treatment upon which reliance may be placed for a definite and curative result in the vast majority of cases.

In surgical treatment the course advocated

should be instituted, and, when feasible, the appendix removed, even though surrounded by pus. The medical treatment should consist in the administration of a purgative, and the local application of ice over McBurney's point, and kept up until the surgeon arrives.

Morphine and opiates should never be prescribed lest they mask the important symptoms which act as operative guides, pointing out the complex and critical process within and around the appendix; when administered they delude the practitioner into regarding as treatment what is nothing of the kind, and persuades him to fatal procrastination, and thereby robs the patient of the only chance of recovery.

Opium and its alkaloids paralyze the nervous tone of the bowels and lessen resistance to microbial proliferation. The drug, by holding the bowels quiet, allows pns to become encapsulated by adhesions, arrests secretory functions, and renders diagnosis exceedingly difficult. Statistics of early operations—*i. e.*, when performed during the first twenty-four hours—show a mortality of from 1 to 2 per cent.; operations in some severe cases and for suppuration gives a mortality of about 25 per cent.; between the extremes, 14 per cent.

Treves is generally considered a good authority, and the writer mentions him because he believes him eminently "conservative" in his statements at least, although not one whit better surgeon than a score of those in America.

Treves says of mild appendicitis, or perityphlitis, 99 in 100 recover (after operation). Of appendicitis, with localized suppuration, 27 cases recovered and 2 died. Of diffuse peritonitis from appendicitis, 3 recovered and 20 died; 3 without operation. Relapsing cases, 42 in number. 37 operated and recovered, 5 recovered without operation, 5 complicated with other conditions, 2 recovered, and 3 died.

The advocate of the "waiting and purging class" will argue that to operate too early is to operate unnecessarily, and while forced to admit the strength of their logic, it is nevertheless true that timely intervention is always preferable to voluntary procrastination.

Dr. Fowler, of Brooklyn, in discussing this point, says: "A case demanding operation inside of twenty-four hours from the commencement of the attack is exceptional; but a case which is not practically well at the end of that time should be made the subject of operative interference without delay."

The conservative surgeon should by no means limit himself to this rule. In cases with severe symptoms, such as high temperature, quick, rapid pulse, and a succession of rigors, conjoined with exquisite tenderness in the right iliac fossa, and an anxious facial expression, do not waste valuable time waiting for other manifestations, but resort to the knife immediately—unless, of course, you wish to have a funeral.

If called late, after diffuse septic peritonitis has developed, operative measures are still conservative, and should be instituted. Infection of effused serum following peritonitis, not necessarily suppurative, offers sufficiently encouraging results to impel the surgeon to give the patient the benefit of the skill at his command. The case is not essentially hopeless, even after general suppurative peritonitis has commenced, although the chances for recovery progressively diminish with the lapse of time following its incipency.

Recently in my practice a case presented itself after the development of the aforesaid condition. With the beginning of peritonitis symptomatology became characteristic. The abdomen had a board-like hardness; the temperature rose to 104 degrees F.; the pulse to 156. These symptoms were accompanied by chilly sensations, exquisite tenderness in the cecal region, and a pinched, anxious facial expression.

As soon as called, an immediate operation was advised and accepted. The little fellow made a slow but uninterrupted recovery, and is now able to play daily with his companions, and suffers no inconvenience. An early operation, of course, implies an early diagnosis.

Typical cases should be easily diagnosticated; but, as in other diseases, many atypical cases are seen, and the practitioner who awaits a chain of symptoms with no missing link will not infrequently delay too long. As Dr. Joseph Price, of Philadelphia, has rightly expressed it, "Procrastination is the fool's paradise." Of the many valuable truths impressed by Dr. Semm, few are more important than the assertion that, "A physician cannot be well rounded and complete as such unless he is a good surgeon; and the well-rounded surgeon should also be a good physician."

Professor Hare tersely remarks: "The wise physician is he who calls in the surgeon early, and the wise surgeon is he who is ready to operate at a moment's notice."

Dr. Hugh M. Taylor, of Richmond, voices

this sentiment: "If the delayed operation is good, few will deny but that the early operation is better."

Preventive surgery is, in the broadest sense, conservative. Opportune intervention seeks to prevent the disastrous consequences of appendicitis, and is ideal when compared with the desperate results sometimes obtained in operations in neglected cases which have been drenched too long with purgative salines and kept too long under the quieting influence of opium.

Often valuable time is lost and bright and useful lives sacrificed in attempts to send acute cases to the city for operation. This course cannot be pursued with safety in cases of gastric, duodenal, or typhoid perforation; neither in strangulated inguinal hernia, nor in acute appendicitis can it be commended.

Advocates of non-operative methods of treatment will claim that it is infinitely better for the doctor unskilled in operations to trust to opium blisters and salts than attempt an amelioration of his patient's condition through the instrumentality of a procedure with which he is unskilled. That with purgatives, poultices, and analgesics he can sooth his patient into a premature grave is *non-disputandum*.

McDowell, Long, Sims, and others have shown the world what cross-roads doctors can accomplish. Encourage the country physician to do an appendectomy while it is simple surgery. Far better an early operation, preventive in scope, by an amateur than one too long delayed, and consequently of hopeless prognosis, although done by an experienced master. Minor surgery is the incipency of attack; major and not infrequently forlorn surgery, when the bowels are distended and parietic, the appendix rotten and surrounded by a stinking and corroding pus, producing intense toxæmia.

Such cases demand the highest possible surgical skill, and entail a death rate of fearful magnitude.

It is claimed by the best surgeons that 75 per cent. of the cases treated medicinally recur and require constant medical supervision, or else demand prompt surgical intervention. It is a well-recognized fact that the number of attacks furnishes no index to the extent of adhesions. In one attack there may be extensive matting, while many may occur with but little local damage. All are agreed, however, that each onset predisposes to a recurrence. And conservative surgery does not necessarily mean

delayed intervention, for in skilled hands the knife is one of the greatest conservative agents known to surgeons.

three times daily. Improvement shown in following table:

Date.	Wght.	Hem.	No. of Red B. Cells.	White B. Cells.	Medication.
6-20	80	60 per ct.	2,800,000	12,000	Hem. 3 ss t. i. d.
7-20	85	65	3,000,000	10,000	" " i "
8-25	91½	70	3,200,000	9,500	" " i "

Analyses, Selections, Etc.

Severe Neurasthenia Dependent Upon Anæmia.

Dr. Isaac Maylugh, of Indianapolis, Ind., reports the case of Mrs. M. T. (*Denver Med. Times*), age 40, white, housewife. Her father, a soldier in the war between the States, was injured about the head, and suffered periods of insanity lasting a week or so. Died in insane asylum at seventy years of age. Before the war he was perfectly well. Her mother died of intestinal cancer at the age of sixty-five years, but her previous health was good, with exception of occasional digestive derangement. One brother and sister living, in good health; the other brother and sister dead. Patient had ordinary diseases of childhood and recovered; no other serious illness. Menstruation at sixteen, painless and regular. Married at thirty-three; three children; normal labors. No miscarriages. She complains of heart palpitation, dizziness, and anorexia, with periods of depression and worry over trivial household affairs. Three months after delivery, she was admitted to Union State Hospital, February 11, 1900. She was 5 feet 4 inches; weight 79 pounds; anæmic, wasted, pupils dilated, skin dry and cold; lungs normal. Pulse rapid, soft, compressible; systolic murmur in second interspace; hæmic murmur over right jugular vein; spleen enlarged, liver normal, tongue coated, pale, flabby; bowels constipated. Food had to be given by force. Insomnia, bodily enfeeblement, etc. Reflexes exaggerated; gait normal, eyes normal; urine clear, sp. gr. 1008, acid reaction; trace of albumen; no sugar; urea 8-10 per cent. Blood examination: Color index low; 60 per cent. hemoglobin; red cells, 2,500,000; white cells, 14,000. Diagnosis: Neurasthenia, due to anæmia. *Treatment:* Rest in bed, massage, electricity, liquid diet every three hours. Arsenious acid, elix. of iron, quin. and strychnia. No improvement. Hemaboloids commenced June 20th—half ounce in half glass of milk

Patient continued to gain in weight, strength, and general well-being; the nervous symptoms cleared up entirely, and on September 30th she was discharged, perfectly well.

The case is interesting for two reasons: *First*, because the unusually severe neurasthenic symptoms, amounting almost to a decided melancholia, seemed to be entirely due to the patient's anæmic condition; and *Second*, because of the prompt and progressive improvement, with increase in weight, which commenced almost immediately after the institution of systematic treatment with hemaboloids, although the various tonics and alteratives continuously administered during the first four months in hospital failed to be of any service.

Report of the Plague Commissioners.

The government is to be congratulated upon its wisdom in selecting three men of the standing of Professors Barker, Flexner, and Novy to investigate the recent outbreak of plague in San Francisco. Their report (*Amer. Jour. Med. Sciences*, October, 1901) presents a most admirable example of the proper method in which to discover the cause, and the best method of prevention of outbreaks of epidemic disease. These gentlemen performed their work with admirable thoroughness, enabling the Health Board of San Francisco promptly to efface the disease from that city. The immense value of such a rapid checking of the pestilence cannot be estimated.

Barker points out that the Chinese in San Francisco are, from a sanitary standpoint, much better off than their countrymen in cities of China, such as Hong Kong and Canton. They are, on the whole, well fed and clothed, and he particularly emphasizes the fact that the Chinese in that city wear shoes, stockings and trousers, since it is believed by many that the bare legs and feet of the Chinese in Hong Kong and Canton had much to do with the frequency of infection with plague in those cities.

His statement that the diagnoses can be established beyond the shadow of a doubt is of importance. When dealing with a first case the

most experienced clinician hesitates to pronounce the existence of such a disorder in the community, but if after a careful examination of the physical symptoms the juices from the buboes are extracted by hypodermic syringe and examined for bacteria, they will be found to exist. Likewise the pathological appearances are absolutely characteristic in the great majority of cases. The German Government, recognizing the possibility of a quick and accurate diagnosis, has arranged for definite plague courses at certain of the bacteriological institutes, where men may be prepared for the especial study of the disease. When a suspected case is reported from any source plague experts with special plague bacteriological outfits are sent at once to the place and their report is accepted as final and acted upon immediately.

According to Flexner, two main forms of the plague may be distinguished—the bubonic and the pneumonic. Only the bubonic type was present in the recent outbreak of the disease in Chinatown, San Francisco.

He considers it proved that no considerable, if any, spread of the bubonic plague in Chinatown, San Francisco, took place by means of rats. No sick nor dead rats were found in the locality in which the cases occurred, with the exception of one, the corpse of which showed it had died of traumatism, and it seems proper to ascribe the limited and localized character of the San Francisco outbreak to this immunity of the rat population of Chinatown. If for any reason the rats had become infected, there is no doubt that the virulence of the epidemic would have been greatly increased.

The plague bacillus can be detected during life if an infected gland is pierced with a hypodermic needle and some of its contents used to make cover-glass preparations in cultures. Novy failed in one attempt of this kind because his needle did not actually pierce the small gland in which the plague bacilli were active.

An interesting case of laboratory infection with bubonic plague was that which developed in a young man working in the laboratory of the University of Michigan. Dr. Novy, in reporting the case, details the extreme violence and rapidity of the onset of his symptoms, and relates the immediately good effect produced by large injections of Yersin's antipest serum. All told, the patient received within twenty-four hours 120 c.c. of serum, 1 dram injected intravenously. The case was plague of the pneu-

monic type. The patient has recovered entirely, although extreme cardiac weakness existed for some time (more than two months) after the disease.

The Acquirement of Nervous Health.

Dr. F. Savary Pearce, 1407 Locust street, Philadelphia, professor of nervous and mental diseases in the Medico-Chirurgical College of Philadelphia, Pa., read a systematic paper on this subject before the Mississippi Valley Medical Association during its session September 13, 1901, in which he especially dwelt upon the *pathogenesis of functional nervous diseases*. This pathogenesis, with the cardinal signs and symptoms of "nervous breakdown" in the earliest period of development is used as a basis for the only rational basis for prophylaxis. Many nervous and mental diseases have perverted function as a basis for development. The mental aspect must be fully recognized. Thus worry and overwork are both potent pathologic factors.

Signs of nervous breakdown are a general irritability of the motor and sensory neurons, coupled with lassitude, forgetfulness, and easy tire after the ordinary mental and physical activities of life.

Insistence is made for the urgent necessity of more serious recognition of these points by the profession if the wear and tear of modern exacting American life is to be forestalled in its baneful influence upon the acquired nervous temperament of many, and of business men in particular in the temperate zone of the United States.

Treatment consists in working "under" the usual pressure, of short vacations of an ocean voyage, canoeing, horseback riding, overfeeding, change of scene, music, bowling, golfing, etc. Careful mental and somatic study of all cases must be made to exclude organic disease. Training of the will-power by carefully devised plans laid down by the physician (as chess-playing) is essential for ultimate success. Acquired nervous health can thus only be gained.

Cases are cited and good results are given.

Dilatation of the Cervix Uteri in Obstetric Practice.

Garrigues, of New York city, in the *Medical News*, gives in brief the methods of securing dilatation of the uterine cervix: The forceps

should never be applied before the os is completely dilated. In cases where there is ample time, he believes in securing dilatation by means of the natural uterine contractions. Use for this purpose a vaginal douche of hot and cold water, with vaginal temperature. Or better, perhaps, insert a properly sterilized English bougie, No. 10, in the cavity of the uterus along its side. When uterine contractions have brought about sufficient dilatation, then use Barnes' dilators. Finally rupture the membranes to bring on labor pains. The injection of glycerine is condemned.

The dilatation of the cervix during labor is accomplished as follows: *First*, certain drugs assist: An injection of atropine into the cervix; painting the cervix and its canal with cocaine; chloral hydrate, antipyrine, strychnine, quinine, or ipecacuanha internally. *Secondly*, mechanical means: Tampon of the vagina, cervix, or uterus, dilatation of the cervix by the hands or instruments, Harris' method being an excellent one. Finally, multiple small incisions or two to four deep incisions into the cervical tissues.—*Lehigh Val. Med. Magaz.*, September, 1901.

Diagnosis, Etiology, Prophylaxis and Treatment of Cystitis, Pyelitis and Pyelonephritis in Women.

T. R. Brown (*N. Y. Medical Journal*, Vol. 74, No. 9) thus summarizes an excellent article:

1. The great majority of cases of pyelitis, pyelonephritis and cystitis are due to infection with various micro-organisms (of which the colon bacillus is the commonest), which may reach the kidney or bladder either exogenously or endogenously.

2. That in the majority of cases the condition either can be prevented or can be cured if the conditions underlying its development are recognized and understood, and the correct measures inaugurated.

3. There are various conditions, such as urinary hyperacidity, which may simulate almost exactly true vesical infections, and yet in which misinterpretation and improper treatment may lead to the development of a true cystitis and its deplorable consequences.

4. In no condition is prophylaxis more essential than in that of the infections of the urinary tract, while, to be able to prevent such conditions we must have constantly before us the

danger of the development of infection in all cases associated with conditions which tend to lower the general resistance of the patient, and also those which render the bladder susceptible to infection, especially by the trauma of an operation or catheterism.

5. While an absolute diagnosis of renal infection can be made only by ureteral catheterism, in the majority of cases a very probable diagnosis may be arrived at by a consideration of the relation between the grade of albuminuria and pyuria and by careful cystoscopic examination of the bladder, especially that portion about the ureteral orifices, and the character of the urine flowing therefrom.

6. Contrary to the opinion expressed in the majority of text-books, a great majority of the infections both of the bladder and of the kidney are associated with acidity of the urine—that is, are due to micro-organisms which do not split up the urea.

7. Probably in the majority, if not in all, the cases of renal infection due to a urea-decomposing micro-organism, after the condition has lasted for a certain length of time, a stone is formed by the decomposition of the precipitated salts about the bacteria as a nucleus.

8. And, finally, to be able to thoroughly understand the cases of cystitis, pyelitis and pyelonephritis brought to our notice, to make the proper diagnosis, to inaugurate and carry out a rational line of treatment, to be conversant with the proper means of prophylaxis, and to give a correct prognosis, a careful chemie, microscopic and bacteriologic study of the urine is absolutely essential.—*Memphis Med. Monthly*, October, 1901.

Effect of Typhoid Blood Serum on Typhoid Bacillus.

Dr. M. W. Richardson reports (*Jour. Med. Research*, July, 1901) the results of a series of experiments upon the effects of blood serum, particularly the blood serum of typhoid fever patients, upon the typhoid bacillus. Lack of space prevents a description of the details of these experiments being given here, and we only give what appears to us to be the important results contained in this most interesting and suggestive paper.

He finds that the serum of normal individuals and of typhoid patients convalescing, or in the later stages of the disease, has a marked

destructive action upon the typhoid bacillus, while the serum of typhoid patients in the early or middle stages of the disease has not this power. If, however, the serum of a normal individual and the serum of a typhoid patient in the middle or early stages of the disease are allowed to act together upon the typhoid bacilli, the typhoid bacilli are destroyed.

Following the hypotheses of Pfeiffer, of Bordet, and of Ehrlich concerning the nature of immunity, Richardson explains these phenomena on the assumption that in the later stages of, or convalescence from typhoid fever, the blood serum contains two elements, the combined action of which produces the destruction of the bacilli and the recovery of the patient. In the earlier stages of the disease one of these elements, which is present in the blood serum of a normal individual, is lacking.

Upon this hypothesis, and in the light of these observations, the rational treatment of typhoid fever would seem to be to supply to the blood of the patient serum containing the element lacking for the destruction of the typhoid bacilli; that is, normal serum—*Boston Med. and Surg. Journal*, October 3, 1901.

Book Notices.

Manual of Chemistry. *A Guide to Lectures and Laboratory Work, for Beginners in Chemistry.* Specially Adapted for Students of Medicine, Pharmacy, and Dentistry. By W. SIMON, Ph. D., M. D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, in the Maryland College of Pharmacy, and in the Baltimore College of Dental Surgery. *Seventh Edition. Thoroughly Revised and Much Enlarged.* In one octavo volume of 613 pages, with 66 Engravings, 1 Colored Spectra Plate, and 8 Colored Plates, Representing 64 of the Most Important Chemical Reactions. Cloth, \$3.00, net. Lea Brothers & Co., Publishers. Philadelphia and New York. 1901.

We cannot do better, in presenting the characteristics of this edition of a work so thoroughly established as the favorite of teachers and doctors, than by making extracts from the

preface: The object of this *Manual* is "to furnish to the student (of medicine, pharmacy, or dentistry) in concise form a clear presentation of the science, an intelligent discussion of those substances which are of interest to him, and a reliable guide to his work in the laboratory." The author "has complied with the request of many teachers to present more fully * * * the parts on chemical physics and on physiological chemistry." The part on chemical physics "has been largely rewritten, and much new matter added." Electrolysis and ionic theory are briefly considered from a modern standpoint. "The last section, giving the principal facts of physiological chemistry, was prepared for the benefit of the medical student in particular. Much new matter has been added to these chapters, and special care has been taken to mention the most modern methods for chemical examination in clinical diagnosis." It would be hard to make a better text-book on practical chemistry for the medical, or pharmaceutical, or dental student, or a chemical manual of greater use to the general practitioner. "As an aid to laboratory work, a number of experiments have been added which may readily be performed by students with a comparatively small outfit of chemical apparatus."

Manual of Bacteriology. By HERBERT U. WILLIAMS, M. D., Professor of Pathology and Bacteriology in the Medical Department of the University of Buffalo. *With Ninety Illustrations. Second Edition, Revised and Enlarged.* Published by P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia. 1901. Price, \$1.50, net.

The first edition of this *Manual* was published late in 1898. The purpose of the book is to give a concise summary of the facts in bacteriology most important to the physician. "Whether wisely or not, it is a fact that many medical schools require their students to absorb an amount of knowledge that taxes the brain to the utmost." This *Manual* presents what is taught in the accessory branches. It is a mastery of such principles which is the objects of a course in bacteriology, for they are essential to a correct understanding of most of the other branches. The author does not deem it either possible or desirable that every medical graduate should be a trained bacteriologist; and in this opinion the profession generally concurs. Dr. Williams has hit the happy medium as a teacher, presenting what the medical student ought to know. To

facilitate ready reference, a copious index is added.

Editorial.

Nicholas Senn Prize Medal.

The committee on the Senn Medal beg leave to call attention to the following conditions governing the competition for this medal for 1902:

1. A gold medal of suitable design is to be conferred upon the member of the American Medical Association who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award will be made under the following conditions: *a.* The name of the author of each competing essay shall be enclosed in a sealed envelop bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. *b.* All successful essays become the property of the Association. *c.* The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the Association. *d.* The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. *e.* The competition for the medal will be closed three months before the next annual meeting of the American Medical Association, and no essays will be received after March 1, 1902.

Communications may be addressed to any member of the committee, consisting of the following: Dr. Herbert L. Burrell, 22 Newbury street, Boston, Mass.; Dr. Edward Martin, 415 south Fifteenth street, Philadelphia, Pa.; Dr. Charles H. Mayo, Rochester, Minn.

The Rio Chemical Company,

Formerly of St. Louis, have moved their office and entire plant to 56 Thomas street, New York, N. Y., and will have no office at St. Louis, nor any other place in the United States except New York city—to which place, of course, all com-

munications should be addressed. One of the influencing reasons for moving to New York was to be more in touch with their foreign offices, as their foreign business has grown to such proportions that there is scarcely a country in the world where there are educated physicians that do not use their goods. "Celerina," "Aletris Cordial," and S. H. Kennedy's Ext. Pinus Canadensis (white and dark) are their staples.

The Therapeutic Monthly

Is a journal devoted to collection and dissemination of therapeutic knowledge, edited by Dr. James Tyson, with Drs. Thomas Luther Coley and T. Mellor Tyson, all of Philadelphia, as associate editors. Price, \$2 a year. It is published monthly by the Medical Journal Union (Limited), 1716 Chestnut street, Philadelphia. Whoever becomes an annual subscriber and pays the annual price will feel himself well repaid. It is an excellent practical journal for the busy doctor.

The Atlanta Journal Record of Medicine

Is the title of the consolidated *Atlanta Medical and Surgical Journal* and the *Southern Medical Record*. Dr. Bernard Wolff is the able, wide-awake editor of this medical monthly, the price of which is \$1 a year.

The Medical Society of Virginia Programme

Is out, and makes a fine showing. Besides the number of papers whose titles are given, the session in Lynchburg, Va., will have the attendance of several distinguished authors from outside the State. Drs. Joseph Price, of Philadelphia; T. D. Crothers, of Hartford, Conn.; J. Wesley Bovee, of Washington, D. C., are among the names of those from outside the State whose presence at a session always gives pleasure, as their papers and discussions add materially to the profit of those who attend the meeting. Dr. S. C. Busey, Lynchburg, Va., as chairman of the Committee of Arrangements, has arranged for the comfort of visitors. The meeting day is 8 P. M. Tuesday, November 5, 1901. While that is election day in Virginia, there are but few doctors in the State who cannot cast their votes at their respective precincts that morning and then reach their depots in time to be in Lynchburg in time for the beginning of the meeting. A fuller announcement will appear in our next issue.

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Original Communications.

AN OPERATION FOR TUBAL PREGNANCY, COMPLICATED WITH APPENDICITIS AND FIBROID TUMORS OF UTERUS.*

By PUGH ULPIAN BROWN, M. D., Troy, Ala.

This anomalous form of gestation has been recognized by the medical profession for the past three or four centuries, but only regarded as a post-mortem curio—with no suggestion as to its etiology, pathology or treatment. During the past twenty years, however, the subject of extra-uterine pregnancy has excited much discussion, and many valuable articles have been written concerning its etiology, pathology and surgical treatment. In spite of all the able discussions on the subject, there seems to be no consensus of opinion among the profession, and the cause is still a subject of speculation. On the other hand, the surgical treatment has made rapid strides, and the operation has about reached perfection. So that at this time, with due regard to asepsis and antiseptis, it is not fraught with the danger that it formerly was, and many lives are saved by it.

The case under discussion is that of a mulatto, 30 years of age, who began to menstruate at the age of fourteen. She gave a history of two miscarriages, the last one about eight years ago; but she had never borne a child to term. She had a profuse metro-staxis since February 1st, and was wasting some at this time, June 17th. Patient was markedly anemic. She was suffering at this time with nausea and vomiting, a muco-sanguinous diarrhoea, rectal tenesmus, together with colicky pains in the abdomen. She also complained of dysuria and frequent micturition. Temperature was 102 degrees; pulse

110; conjunctivæ icteric. Inspection of abdomen in recumbent position showed an enlargement, which was symmetrical. On palpation, a firm tumor was felt assuming the longitudinal position of uterus, with its bulk lying to the right of the median line. Bi-manual examination revealed a tumor anterior and right lateral to uterus, os was pushed downward, and a distinct sulcus existed between tumor and uterus. The os was only slightly enlarged, and there was no marked softening of the same.

Combining the history of the case and the examination, there was nothing typical of an ectopic gestation. Patient was given a mixture of epsom salts and paregoric for the mucous diarrhoea, and also a regular diet; no positive diagnosis was made.

Assisted by Dr. J. S. Beard, I operated on her two days later. Having observed all the details of aseptic and antiseptic technique, the patient's body having been given a green soap bath, in its entirety, for two successive days, abdomen scrubbed, pubes shaved, and vagina irrigated and scrubbed—a free incision was made in the median line, between the umbilicus and pubes. When the abdomen was opened, a large dark mass the size of an adult head came out into view. The uterus was crowded backward. The mass sprang from the left tube, and broad ligament was reflected over the fundus of the uterus and lay anterior and right lateral to it, and was adherent to the uterus. It also crowded the bladder under the symphysis pubes, and was adherent to same. There were numerous other adhesions to anterior abdominal wall, pelvic wall and intestines. While freeing the sack of its adhesion to neighboring structures, the cœcum and appendix were found adherent to the sac, and the appendix enlarged and diseased; it was left alone until the sac was disposed of. The sac was brought up to the abdominal wound, incised and emptied of its contents—the products of an ectopic gestation, blood clots and a placenta par-

* Read before the Tri-State Medical Association of Alabama, Mississippi and Tennessee during its recent session.

tially attached to the superior border of the tube. A fœtus, five inches in length, lay between the folds of the broad ligament. During the removal of the sac contents, hemorrhage was free; this was controlled by claspings the broad ligament with pedicular forceps—both of the uterine and pelvic side. The ovary and tube were then removed, and the broad ligament stump ligated at successive intervals.

The pregnancy was primarily a tubal one; secondarily a tubo-ligamentous one—rupture between folds of broad ligament having occurred in the early weeks of pregnancy, fœtus surviving the rupture continued to grow. The abdominal cavity was irrigated with hot normal solution of salt, the space between broad ligament cleansed of all shreddy tissue, and the superior and inferior folds of the broad ligament brought together by continuous suture of catgut. The abdominal wound was then held open by means of retractors. The appendix was walled off from the rest of the peritoneal cavity with sterile gauze pads, freed from all adhesions, its mesentery tied at short intervals and cut away from it. A circular incision was made through the peritoneal covering, and reflected in the form of a cuff; the denuded portion of the organ was then tied with silk ligature and cut away, and the cuff of peritoneum stitched over the stump with catgut.

An examination was made then of the uterus and right ovary and tube. Two intra-mural fibroids were found situated in the anterior surface of the body of the uterus. As they were of a medium size, myomectomy was performed. Cervix was thoroughly dilated with Wylte's dilator to insure drainage; uterine cavity curetted, and an iodoform gauze drain carried well up to the fundus and left in situ. The uterus was lifted to the abdominal opening, an incision made in uterine substance directly over tumors large enough to allow of their enucleation. The tumor cavities were then closed with deep continuous sutures of catgut, and the peritoneal covering was brought together at the margin of the wounds with a continuous Lembert suture of catgut. The ovary and tube were examined, a few adhesions broken up; as there was no evidence of disease, the ovary was left unmolested. The abdominal cavity was irrigated again, sponged out, and wound closed by continuous suture of catgut, bringing together the peritoneum, muscular layers brought together by con-

tinuous catgut suture, avoiding subperitoneal fat, and a third layer of interrupted silk sutures approximating skin and cellular tissue.

Patient suffered some shock after operation; she was given a high enema of normal salt solution, strychnine and whiskey hypodermatically, and heat was applied to the extremities. She suffered some from nausea; pain was allayed by morphine hypodermatically the first day, and then discontinued.

Second day, she was given calomel; one-half grain was given every hour until five grains were given. This was followed by saline cathartic and high enemata; bowels moved on second day; in the evening temperature dropped from 103 degrees to 101 degrees. (I will state that temperature was 102 degrees on morning before operation.) Bowels were kept open by saline cathartic and enemata after the initial movement whenever it was deemed necessary to make them move. Food was withheld for two days. Packing was removed from uterus on third day. A sanguinous discharge continued for ten days with no odor. Patient was given a vaginal douche each day of a lysol solution. Abdominal sutures were removed on twelfth day; wound had united primarily. Temperature fell to normal after the fourth day. There was no tympanites—in fact, nothing indicative of sepsis during her convalescence. She was given solid food at the end of the fifth week; she was fitted with an abdominal supporter, and allowed to get up at the end of sixth week. It has been three months since operation; patient seems perfectly well, has gained in flesh, menstruated in August and September; the discharge was normal, and she suffered no pain. She has been engaged in farm work since September the 1st.

THREE CASES OF CATARACT EXTRACTION WHERE ABSOLUTE GLAUCOMA EXISTED IN THE OPPOSITE EYE.

By JOHN DUNN, M. A., M. D., Richmond, Va.,

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On the 24th of April, 1894, I was consulted by Mr. A., aged 62, of Petersburg, Va. He wished me to remove a mature cataract from his left eye, as the sight in his right eye had also

within a short time become very bad. Examination showed O. D. a transparent lens with vision reduced to perception of light as the result of a severe albuminuric neuro-retinitis. The papilla was immensely swollen, and there were numerous hemorrhages and white spots in the retina. The urine was filled with albumen and casts. I declined to remove the cataract from the left eye, and wrote a note to Mr. A.'s physician stating the cause of the loss of sight in the right eye.

On May 4, 1895, Mr. A. returned to the Eye Infirmary, and again requested that I remove the cataract from his left eye. The right eye was the seat of absolute glaucoma, and totally blind. The lens had dislocated into the anterior chamber. I advised the removal of this eye. To this Mr. A. refused to consent. The left eye was as I had seen it one year previously. The patient insisted, and the usual tests proved that his light perception and field of vision were good. The tension of the ball was normal. The appearance of the eye was healthy, there being no dilated vessels in the conjunctiva or over the sclera. The cataract was accordingly removed by simple extraction. The wound healed kindly, and Mr. A. received excellent vision for both distance and reading. Nor was I able to make out for a certainty that there were any changes in the fundus, which might have been due to an attack of albuminuric retinitis.

Case II. John H., mulatto, aged 58, seen May 16, 1901. Here the right eye was the seat of absolute glaucoma, the lens lying against the posterior surface of the cornea; the eye had been months totally blind. The left eye had a suspicious appearance, one highly suggestive of the *status glaucomatosus*, the episcleral veins being dilated; the tension was doubtful. The patient gave a history of having been operated upon four times within the fifteen months previous "for the cataract." Each operation had been followed by severe pain in the eye, and one which lasted several days. When walking, this man carried his head turned slightly to one side, with his chin on his chest, and his upper lids drawn upward as far as possible. Examination of the left eye showed the cause of this unnatural carriage of the head and lids. The cornea was the seat of several small scars at different places, making it evident that "the operations for the cataract" had been attempts to needle the lens, and thus cause absorption. The result of these operations had been to dislocate the lens upward,

so that the lower border of the lens was just visible above the lower border of the pupil, which proved to scarcely, if at all, respond to instillations of atropia. There were marked evidences of iritis in the lower part of the iris. The lens was seen to be slightly movable. The position of the lens, and the fact that it was movable, accounted for the position of the patient's head. "I can get a little sight that way, doctor."

The patient had good light perception, and could tell when objects passed between him and the source of light. The case was not a promising one. *As it turned out, the patient had good control of the movements of his eyes, or the operation which was done would have been impossible.*

A corneal section, one-third the circumference of the cornea, was made. Instantly the vitreous began to escape from the wound. Several attempts were made with hooks to extract the lens, but they were all failures. Through the small pupil, in the presence of escaping vitreous, the lens could not be seen sufficiently well to grasp it and guide its movements. Accordingly a large iridectomy was made. The eye had before this, however, lost so much vitreous that I could not seize the iris with the iris forceps, and, after several attempts, had to give up their use and have recourse to a blunt hook, by means of which the pupillary edge of the iris was caught, and the iris pulled out and cut off—the vitreous pouring over it as I did so. After several attempts with single and double hooks and mouse-tooth forceps, the lens was finally extracted. It came out entire, in its capsule, and proved to be dense and hard. The usual dressings were then applied. After twenty-four hours, the eye was examined, and apparently the corneal wound had closed, for there was present a deep anterior chamber, while the smile in the patient's face, when the lid was lifted, told more clearly than words could have done that sight had been restored. For three days the eye did nicely.

On May 20th it was noticed that vitreous was protruding from the exterior corner of the wound, and that the tension was, in spite of this, high. An attack of glaucoma had come on. For ten days the usual remedies for glaucoma were tried, but apparently without avail, as there was constantly present a bead of vitreous in the outer angle of the wound, the tension remaining high.

I advised the removal of the right eye, which was done May 30th. This eye was a source of constant discomfort. The removal was follow-

ed by an attack of vomiting, which caused a quantity of blood to exude into the loose tissues of the orbit. At the time of the enucleation the bead of vitreous projecting from the wound in the left eye was cut off. Twenty-four hours later this wound had definitely healed. And several days afterwards the patient returned to his home, saying that he could see well. How well I am unable to say, as the man could not read. He was, however, able to go about without assistance, and expressed himself as more than satisfied with the result of the operation, saying that he now would be able to attend to his work on the farm.

Case III. R. C., full-blooded negro, aged 75, was seen in June, 1901. The right eye was the seat of absolute glaucoma of old standing. The left eye showed no external evidences of disease, no suspicious overfilling of the anterior scleral vessels; tension was normal, anterior chamber normal. The eye had, however, a mature cataract, very dark in appearance. The old man claimed that he could tell day from night. Little more was to be expected in the presence of so dark and dense a lens.

On June 3d the cataract was extracted, an iridectomy being done. At the time of the operation nothing out of the usual was noticed, except that immediately following the extraction of the lens there was no change in the old negro's facial expression. Noticing this, I remarked to my assistant, "This old man is hopelessly blind." As he was very deaf, I asked him no questions, but dressed the eye as usual. Nothing occurred until the third day, when, in removing the dressings, I found a huge bead of vitreous forcing wide open the corneal wound. An attack of glaucoma had set in. This mass of vitreous was cut off. More vitreous protruded from the wound, and finally a considerable intra-ocular hemorrhage occurred. Bleeding to a greater or less degree continued for several days. The eye finally healed, leaving a huge staphyloma—not a pleasant picture to look at, nor a result to be desired!

Remarks.—The above cases are not without interest. In Case I we have absolute glaucoma following upon, if not the direct result of, albuminuric retinitis. Similar cases have been reported. Whether there existed albuminuric retinitis of the left eye at the time it appeared in the right is an open question. More than one case of monocular retinitis—to all appearances albuminuric—have been reported. Nor is it im-

possible to conceive that such a condition of affairs may exist. For example, the condition of the blood vessels of the right eye may have previously been so diseased as to make possible the existence of an albuminuric retinitis, when it would not have occurred in a relatively more healthy eye—which the left eye here may have been.

In case No. II we had to deal with a cataract which had some months before become dislocated through wrong operative methods, and into the vitreous of an eye the seat of chronic irritable glaucoma. Here the blind eye should have been enucleated before any operation was attempted on the left eye. The patient, however, was unwilling to have this done. And, besides, the attempt to remove the cataract from the other eye might easily have resulted in conditions which made its removal likewise necessary. And no oculist would desire to send a patient home eyeless, as the result of his efforts to restore vision! The more experience one has with the operative procedures resorted to for chronic irritable glaucoma the more possibilities he sees of unpleasant results as their consequences; and yet the fact that, as in this case, one has from time to time results which may be termed, under the conditions, excellent, even though they are probably temporary, should make us willing to give our patient every possible chance for vision.

The difficulties of extracting the lens in Case II but serve to illustrate one of the uses of the blunt hook as an occasional aid in the performance of an iridectomy. I know of no instrument which will take its place when we meet with subinvolution of the iris.

In Case III we had a result which was not altogether unexpected. We know the tendency to bilaterality of glaucoma. The patient was old, and so deaf as to be unable to hear the human voice, except when it was shouted into his ear. It has been justly remarked that when deafness and glaucoma come on together in old age, hand in hand, as it were, the prognosis for the latter is, as a rule, less good than when glaucoma appears alone. Nor are these reasons for the accuracy of this observation far to seek. Where the glaucoma is absolute, the uselessness of extraction of the lens is well known.

In Case II the value of enucleation of the blind eye, which evidently had become the seat of an acute attack after the extraction of the cataract from the left eye, is to be commented on. The pain and general discomfort caused by its

presence had not a little to do with preventing the healing of the opposite eye.

314 East Franklin St.

RESUME OF THE SUBJECT OF ACTINOMYCOSIS, WITH REPORT OF A CASE OF ACTINOMYCOSIS ABDOMINALIS.*

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I desire to express my appreciation of Dr. Elting's contribution in the careful study of this subject, and in the reference he has made to various authors, French and German in especial.

The polymorphous fungus belonging to the genus of oospores was first recognized by von Langenbeck in 1845. In 1857 Lebert described a case of thoracic actinomycosis, observed by Louis in 1848, and published cuts of the actinomycetes in his *Atlas*, believing, however, that these fungi were the debris of cysticerci.

From 1868 to 1875 Rivolti and Perroncito demonstrated the so-called sarcomata of the jaws of cattle to be due to actinomycetes, Bollinger, at the same time, recognizing the characteristic fungus in "lump jaw" in cattle, and referred it to the botanist Harz, who classified and gave to it the name of actinomycosis.

Actinomycosis in human pathology dates from the works of Israel, in 1878, this author and Ponfiek recognizing the identity of bovine and human actinomycetes, even before the transmissibility of the disease had been proven by inoculation experiments—the latter, however, not being successful until 1880, when Johne produced the disease in a cow inoculated with some of the actinomycotic granules obtained from an animal of the same species. In 1883 Israel successfully inoculated the human actinomycetes into a rabbit.

During the decade from 1880 to 1890 there were published two important articles—i. e., the classical monograph of Israel, in 1885, with a report of 37 cases of human actinomycosis, comparatively little having been added since; the second article was published by Bostrom, in

which he paid special attention to human actinomycosis, and the transmissibility of the disease through vegetable life.

During the past decade much interest has been roused in France; and among the best of the numerous publications is the exhaustive monograph of Poncet and Berard.

To-day the literature upon the subject in America is quite extensive, the disease no longer being regarded as of infrequent occurrence.

A great variety of names have been proposed for the fungus, the true distinction, however, between Madura foot and the group of pseudo-actinomycosis being clearly established by Blanchard in 1895.

In the infected tissue, contents of abscess cavities, or discharge from fistulous passages, the actinomycetes are usually present, in the form of small, yellowish, more or less opaque granules, in size from .15 to .75 mm., although larger granules often occur, are usually grayish-white transparent, easily broken up, and of a consistency of soft jelly. Becoming older, the granule grows more opaque and yellow, finally becoming impregnated with calcium salts, which gives rise to a structureless concretion.

The actinomycetes stain readily with ordinary basic aniline dyes, not being decolorized by Gram's method, are a facultative anaerobe, and grow upon most of the common bacteriological media. The best temperature is from 33 degrees to 37 degrees C., and even under these conditions culture development is slow, requiring from 5 to 15 days. Very often actinomycetes are mixed with other micro-organisms, the latter having a more vigorous growth, and tending to obscure the former. The most common of these micro-organisms are the staphylococci, the streptococci, colon bacillus, and leptothrix buccalis.

Actinomycetes possess a surprising ability to develop upon cereals and vegetable media in general. At 45 degrees C. the growth of the fungus is arrested, and rapidly destroyed at 60 degrees C.

The spores are more resistant to injurious agencies than the mycelium, although less so than the spores of bacteria. Greater resistance to noxious agencies is possessed by the spores grown upon cereals, experiments by Berard and Nicolas showing that some spores have lived as long as four years upon certain cereals and under unfavorable conditions.

There are a few cases on record where it seemed probable man had contracted the disease from

*Original abstract of a paper read at the semi-annual meeting of the Medical Society of the State of New York held in New York city October 16, 1901.

animals; but it would appear that prolonged, intimate and close contact is necessary, which seems to indicate that the virulence and infectiousness of the actinomyces are diminished in animal organisms.

The consensus of opinion is that the great carriers of actinomycotic contagion are the different forms of cereals, especially barley—through their agency both man and domestic animals becoming infected. Pieces of cereal grains have been found in the focus of infection, the history of the case pointing almost definitely to their being the source of the disease.

Vegetables, especially those grown above ground, may also convey the contagion to man and animals.

Men are much more frequently infected than women, probably as a result of their being more exposed to infection.

Of 357 cases of human actinomycosis, collected by Hutvra, one-third occurred in the third decade of recognition of the disease.

Five chief avenues of infection have been distinguished:

1. Through the mouth and pharynx.
2. Through the respiratory tract.
3. Through the gastro-intestinal tract.
4. Through the skin wounds, etc., and
5. A group of cases in which no definite portal of entry is discoverable.

Microscopically, a focus of actinomycotic infection is characterized by a central zone, containing the fungus either free or attached to the foreign body, by means of which it gained access to the part, this zone containing more or less cellular detritus and products of degeneration.

The blood vessels in the immediate vicinity of the foci are but rarely obliterated.

All the actinomycotic lesions can be divided into two great classes:

1. The neoplastic type, which is usually found in horses and cattle.
2. The inflammatory type, usually found in man and hogs.

The neoplastic type is the form in which spontaneous recovery not infrequently occurs.

In the inflammatory type the process of destruction exceeds in rapidity and intensity that of defense, tends to the production of sinuses, but not of large abscess cavities, the latter usually being the result of a secondary infection.

The muscles and bones afford a very unfavorable medium for development or extension of

actinomycotic foci.

The tendency to the formation of fistulous passages is quite characteristic, the discharge presenting marked differences. In some instances it is serous, in others sero-purulent, and in others distinctly purulent. Secondary infection practically always exists in fistulous cases.

Another characteristic feature of actinomycotic lesions is the tendency to extend by continuity rather than by metastasis.

Poncet and Bernard propose a division of actinomycotic infections into the following groups:

1. Cervico-facial.
 2. Thoracic.
 3. Abdominal.
 4. Cutaneous.
- Foci in bone, the spinal column, the genito-urinary organs, the brain, special organs of sense, etc., being regarded as complications.

Statistics prove that about 55 per cent. of the cases were of the cervico-facial type; 20 per cent. thoracic and pulmonary; about 20 per cent. the abdominal type, and about 5 per cent. of a variety of types.

There has never been a definitely authenticated case of primary abdominal actinomycosis reported which did not originate from the gastro-intestinal tract, adhesions and abscesses being the characteristic features, and abscesses always resulting from a secondary infection.

The actinomyces gain access to the stomach along with either animal or vegetable food, most commonly the latter. Neither the gastric juice nor the bile appear to have any very decidedly harmful effect upon the fungus.

The different portions of the alimentary tract seem to be affected in direct proportion to the length of time which the intestinal contents remain in the different parts.

Intestinal actinomycosis appears first as a small nodule in the submucosa, which undergoes degeneration at its centre, and presently gives rise to a small ulcer with undermined edges, which may extend either by progression or by confluence of several small ulcers, which, in certain instances, heal and leave irregular pigmented scars.

As the process extends there is a decided tendency for the involved portion of the intestine to become adherent to other portions of the intestine, the abdominal viscera or the abdominal wall, preventing, in most instances, a perforation into the general peritoneal cavity. When the process originates from the colon—i. e., a portion of intestine not provided with a mesen-

tery—retro-peritoneal abscess is not an uncommon complication.

In some instances the intestine adherent to the abdominal wall has perforated externally, forming a fecal fistula.

Perforation into the bladder is of rare occurrence, although cases have been reported by Bostrom, Hesse, Billroth, and others.

The prostate has, in a few instances, been involved by extension of the disease from the rectum.

In women, the pelvic viscera have sometimes been extensively involved by extension of the process from the primary intestinal focus.

In all the literature Grill was unable to find a single authentic case where abdominal actinomycosis had extended through the lymph channels.

Metastasis, in the great majority of cases, takes place through the veins rather than the arteries.

Among the secondary lesions of abdominal actinomycosis those of the liver are the most frequent, involvement occurring either by continuity, contiguity or metastasis. In 20 of the 30 cases of hepatic actinomycosis collected by Aribaud the primary focus was intestinal.

In from 50 to 60 per cent. of abdominal actinomycosis, the primary focus is the cæcum, appendix, or contiguous portions of the ilium and colon—i. e., in the right iliac fossa; from 10 to 15 per cent. of the cases in the rectum. In comparatively few cases has the primary focus occurred in the small intestine. There thus remain a certain number of cases in which the primary focus is undetermined, even though careful post-mortem examinations have been made.

Grill has distinguished three typical periods in the course of abdominal actinomycosis:

1. The initial period.
2. The period of tumor formation.
3. The period of fistula.

To these three periods Hinglais has added a fourth—a period of repair.

Although in certain cases this or that period may predominate or be entirely absent, nevertheless the periods mentioned are usually characteristic of the disease, when localized in the abdomen.

Pain, while usually present, is rarely severe, being rather a sensation of tension and discomfort.

In rectal actinomycosis, the fistula usually open about the anus, and occasionally in the loin

or above the pubis. Spontaneous recovery is possible, even though there be extensive infiltration of the abdominal wall with numerous fistulae.

The duration of the disease is quite variable—from a few weeks to several years.

The prognosis in abdominal actinomycosis, even though the process be extensive, is not necessarily hopeless, for there are on record a considerable number of cases that have recovered.

In general, one can say that those cases offer the best prognosis which are most amenable to surgical treatment—i. e., the abdominal form rather than the thoracic. The oldest cases are most unfavorable because of the possibilities offered for extension or metastasis.

In 77 cases of abdominal actinomycosis treated surgically Grill found 22 recoveries, 10 improvements, and 45 deaths.

It is practically impossible to recognize abdominal actinomycosis in its earliest stage, although examination of fecal matter has, in a few instances, led to a comparatively early diagnosis. In the later stages, when tumefaction is extensive, with foci of suppuration and numerous fistulae, and the discharge contains characteristic granules, diagnosis is comparatively easy.

Sarcoma, carcinoma, and tuberculosis of the cæcal region must also be considered in differential diagnosis.

Greater care in the selection and preparation of cereals and vegetables would certainly diminish the number of infections by this avenue. Since thorough cooking destroys the spores of actinomyces in flesh, prevention of the infection from this source would appear to be comparatively easy.

Therapeutically a so-called specific for actinomycosis has never been discovered, although iodide of potassium possesses certain qualities which produce a favorable result. In general, iodide of potassium appears to act more satisfactorily and effectually the earlier in the course of the disease it is administered, and in large and gradually increasing doses. Experiments have shown that it has little or no effect upon the growth of the actinomyces on artificial media.

Billroth, Kahler, and others have tried the effect of tuberculin, improvement seeming to have followed its employment in a few instances. An interesting fact, brought out by Kahler, Pillich, and Wolff, and confirmed by Arloing, is that men and animals infected with actinomyco-

sis react to Koch's tuberculin the same as in cases of tuberculosis.

Ziegler has reported a favorable result following the injection of protein obtained from cultures of the staphylococcus pyogenes aureus.

Gautier has seen favorable results follow the use of electrolysis, and Braum recommends the use of Fowler's solution.

In general, however, combined medical and surgical treatment would appear to have produced the best results, especially in the forms of actinomycosis more superficially placed.

It is frequently difficult to determine the extent of the process, and consequently the extent of surgical intervention required.

Careful exploration of the fistulae and foci should be practiced, so far as possible, with the removal of as much diseased tissue as consistent. If apparent recovery recurs the case should, nevertheless, be watched for several years, because of the great possibility of recurrence.

Mr. A. S., Castleton, N. Y., age 45, native of United States; carpenter by occupation; married.

Admitted to Albany Hospital February 22, 1901. Provisional diagnosis carcinoma of cecum or mesentery; corrected diagnosis actinomycosis abdominalis. Treatment, operation and medical.

Family history good.

Previous history: Patient had usual diseases of childhood; typhoid fever at the age of 15; was quite ill, but made a good recovery. Denies venereal diseases of any kind. Patient has partaken sparingly of stimulants; smokes and chews tobacco rather excessively; has associated much with animals; never worked in grain. General health always good; no serious injuries.

Present illness began November 27, 1900. While at work had pain in stomach; however, finished day's work, and then tried various remedies without relief. Had sharp cramps in lower portion of abdomen; very severe for three or five minutes, recurring at first every half hour or so. Did not obtain relief for a week, although under the care of a physician. Pain gradually diminished, but did not disappear for eight weeks from onset. No chills, fever, or vomiting, but slightly nauseated. Pain not localized or radiating, but seemed, to patient, to be in abdomen. No jaundice; no distension of abdomen that patient ever noticed. Bowels and kidneys normal in functions.

January 1, 1901, patient was able to be up, around, and improved quite rapidly. Middle of January superintended an ice gang.

February 1st, as well as usual, and had regained normal weight.

February 20th, still feeling as well as ever, but noticed a small tumor in region of umbilicus, for which he came to the Albany Hospital February 22d, under my care.

Physical diagnosis: Distinct tumor, size of a fist, in right iliac region; smaller tumor, inflammatory in character, evidently containing pus, at umbilicus; smaller masses to be felt through and in abdominal wall, giving an impression of sarcoma of the mesentery.

Heart, lungs, spleen and stomach normal. Liver dullness extended about one finger's breadth below costal margin. Skin over tumor red, with yellow spot in centre.

Urine amber, sp. gr. 1030, acid, no albumin or sugar, sediment slight, and a very large number of calcium oxalate crystals present.

Blood examination revealed leucocytes 18,500, reds 4,710,000.

Operation February 28, 1901. Abdominal incision 6 cm. long in median line. Peritoneum found adherent to coils of small intestines in various places, with a flattened tumor, size of half a hand, springing from right iliac crest. While supposed to be a case of multiple sarcoma of the mesentery, yet it differed from any similar case I had ever seen. There was a distinct hardening of this portion of the peritoneum extending to umbilicus, along the course of the urachus and round ligament of liver, with an abscess presenting just under the skin. The latter was not opened for fear of infecting the peritoneum. Incision in peritoneum closed with fine silk, continuous sutures; wound closed with interrupted silkworm gut sutures, and iodoform gauze introduced in lower end of incision, then standard dressing. Gauze removed on 4th day, and drainage encouraged thereafter, the abscess of umbilicus having opened and discharged a creamy, flaky-like substance. Specimens of discharge and tumor were saved, but lost later, and did not reach the Bender Laboratory for examination.

Patient put upon syrup of hydriodic acid, strychnia and elixir of calisaya, with as good nourishment as possible.

Not feeling at all certain of my diagnosis, and the possibility of actinomycosis, about April 1st I asked Dr. Elting to look the case over

carefully, and make a thorough examination of the discharge. This was done, and the case found to be one of typical actinomycosis. Cover slips stained by Gram's method showed the characteristic fungi. Cultures from several of the abscesses showed so vigorous a growth of the bacillus coli communis that the growth of the actinomyces was obscured. Patient was now administered iodide of potassium in increasing doses—i. e., a saturated solution, commencing with 3 drops in a wineglassful of water before each meal, increasing 3 drops each day until 60 drops were reached, and this dose continued.

May 1, 1901, condition improved somewhat, although necessary on two occasions to open abscesses in the abdominal wall. Less numerous actinomycotic granules in discharge than before the administration of iodide of potassium was begun. Large tumor still in right lower quadrant of abdomen, extensive induration and infiltration of abdominal wall, and four fistulous openings.

June 15th, patient's general condition not quite as satisfactory as at previous note. Three discharging sinuses in abdominal wall, the discharge acro-purulent, and containing a moderate amount of actinomycotic granules. Appetite good—no gastro-intestinal symptoms. At patient's request, he was discharged from the hospital, and advised to continue the large doses of iodide of potassium.

June 29th, patient re-admitted to hospital for further observation. General condition somewhat improved, but there are more discharging sinuses than at last note.

August 20th, patient returns feeling much better than when seen about three weeks ago. Condition of abdomen distinctly improved. Some of sinuses closed, and discharge from remaining ones decidedly less.

Patient says two weeks ago a small pimple or blackhead developed on right side of the nose, near inner angle of eye. This was squeezed by his wife, who had attended to the abdominal wounds. Forty-eight hours later patient noticed some pain and swelling about nose, which gradually increased, and a tumor, the size of a hen's egg, developed, which almost entirely closed right eye. Hot applications employed, and about a week from onset tumor broke and discharged considerable pus. There still remains a tumor the size of a large pigeon's egg, the skin near and around presenting a livid appearance. Discharge sero-purulent, and con-

tains a few typical actinomycotic granules. Potassium still continued.

September 20th, patient returns feeling much improved. Abscess of nose entirely healed. abdominal condition much improved. There are still a few actinomycotic granules in discharge from sinuses in abdominal wall.

October 12th, patient shows still further improvement. Has been doing light work for several weeks past. Color good and general appearance excellent. Four or five discharging sinuses in abdominal wall, containing a small amount of discharge, with an occasional actinomycotic granule, mostly in an early stage of development.

If this case is studied carefully it is very striking to observe the characteristic conditions that have been described by many authors—i. e., the tumors to be felt in the peritoneal cavity, and in the abdominal walls, the peculiar reddish-blue appearance of the surface of the abdomen, the multiple abscesses containing yellowish-like pus and granules. All of these conditions are indicative of actinomycosis, also the patient's improvement for a time after operative intervention, and still further improvement when getting under the full effect of the iodide of potassium; the infection of the nose, and rapid recovery, all aid in confirming the previous diagnosis.

28 Eagle Street.

APPENDICEAL FISTULA.*

By JOHN B. DEEVER, M. D., Philadelphia, Pa.

There are two reasons why this subject is worthy of our attention; indeed, it is a subject of the utmost importance, for, in practically all instances, it is a preventable sequel to operations for acute appendicitis, and is only seen in the neglected cases, if procrastination on the part of the physician or patient can be so called. If all cases of appendicitis were operated in the early hours of the attack, this complication would be practically unknown. Secondly, the difficulties and dangers of the operation for the relief of appendiceal fistula are often greater than was the original operation, and much more dangerous

*Original abstract of a paper read before the New York State Medical Association during its eighteenth annual meeting, held in the city of New York October 21-24, 1901.

than is the operation for the removal of the appendix in the early hours of an attack.

When we consider that there are members of the profession, happily each day becoming less numerous, who still advocate the dangerous policy of delay in the medical treatment of appendicitis, it is not strange that we still meet the sequel with distressing frequency.

The mortality of operation for appendiceal fistula is, fortunately, not high. Although many brilliant results are reported, nevertheless, failure to obtain a cure may result. I fear we are all more tempted to report our fortunate results than those which have an unfavorable termination. This fact, although serving the useful object of stimulating us with greater courage in facing serious surgical problems, also has the disadvantage of tending to make us less thoughtful of their dangers. The man who is continually calling to our notice the dangers and gloomy side of any operative procedure exposes himself to the stigma of retarding the science of surgery. This, however, does not apply in this instance, because it not only points out the condition, the cause, and means of prevention, which are obvious, and after all "prevention is the best cure." In the early operation for appendicitis we have the almost certain means of avoiding complication.

Appendiceal fistula occurs as one of two varieties—the external and the internal. In the internal variety, the channel of the communication, or the fistula, is in direct communication with some hollow abdominal viscus, or in the case of evacuation of an appendiceal abscess by way of the bronchus with the chest activity.

In the internal variety any of the hollow abdominal viscera may be involved—any portion of the intestinal tract, the bladder, the dilated portion of the ureter, etc.—in fact, any of the viscera in close proximity to the appendix.

These internal fistulae, although numbers of cases have been reported, are quite rare in comparison to the external variety. Fortunately, too, they rarely need surgical interference, as they usually either heal spontaneously, or may remain innocuous, as, for instance, a communication between the ileum and the cecum. We cannot be sure, however, that these internal bowel communications will remain innocuous. In too many instances not only do they occasion local discomfort and attacks of aggravated intestinal indigestion, but offer a fertile cause for mechanical intestinal obstruction. Further, I believe

that these local foci of irritation are in a certain percentage of cases forerunners of subsequent malignant growth.

The least dangerous of these internal fistulae are those in which an abscess ruptures into the cecum, the colon or the rectum, as in this variety the danger of intestinal obstruction is minimized and the discharge of pus by this route the safest. The internal variety of fistula rarely requires operative interference, and for this reason is considered by some to be a fortunate termination of appendiceal abscess; this, however, is an opinion to which I cannot subscribe, for I have seen too many unfortunate and distressing consequences follow the adoption of this type of procrastination, and a fatal result in more than one instance compels me to lay stress on these facts. Those cases which terminated fatally resulted from, in one instance, a communication with the bladder; a second, a communication with the respiratory system; in a third, the communication was with the dilated portion of the ureter. Again, the inflammatory bands around such an internal fistula have caused death by internal obstruction of the bowel from a coil of intestine becoming imprisoned beneath such adhesions.

The external fistulae are much more common, but occur practically always in cases where abscess has been present, or where a gangrenous appendix has rested upon the bowel, and by contiguity, caused a perforative gangrene of the bowel. This was the case with a famous surgeon of my own city. At the time of operation a gangrenous appendix was found with its tip resting against the bowel. At this point there was a small oval patch of gangrene, which several days after operation broke down and formed a very obstinate fecal fistula.

Probably the most satisfactory classification of these embarrassing operative sequelae is that which depends upon the character of the discharge. The discharge from an appendiceal fistula can be divided into the fecal and non-fecal. The non-fecal discharges are urine, mucus, flatus, pus and bile. Urinary fistulae are rare, and are practically always due to injuries to the bladder, as the ureters from their anatomical position are rarely involved. Yet the ureter as it crosses the psoas muscle may be injured. I have seen the ureter exposed when it did not look unlike the appendix stripped of its serous coat. The injuries to the bladder consist either in tears made in freeing adhesions at the time of operation, or are due to ulceration into the bladder,

either from the pressure of an abscess in the pelvis or from an appendix adherent to the bladder. Very occasionally, an appendiceal abscess works its way upward and ulcerates into the gall bladder, and when this abscess is opened a true biliary fistula is established. This is for anatomical reasons extremely unusual. Another way in which I have seen a biliary fistula is from an infection of the gall bladder secondary to a non-suppurating appendicitis, or rather, an appendicitis without peri-appendicular suppuration. After operation the gall bladder has perforated and discharged through the appendiceal wound, the general peritoneal cavity being shut off by adhesions.

The other non-fecal fistulae are always due to the presence of a foreign body. This foreign body may consist of one of several things:—

An appendix left in situ. In many cases of appendicitis in which the operator contents himself by merely opening and draining the abscess, the appendix itself is left as a foreign body, and keeps open a fistula, which will not disappear until the appendix has entirely sloughed away or has been removed, usually the latter. In these cases the discharge may be almost pure mucus, and in any case in which mucus is discharged from an appendiceal fistula we can be sure that all, or part, of the appendix is in communication with the tract. In operating upon such cases I have never failed to find a portion of the appendix, and, indeed, in cases in which an abscess has been drained, and the appendix left undisturbed, at a subsequent operation, I have always found the appendix to be present. The disappearance by sloughing of such an appendix would be a fortunate occurrence, and may occur in rare instances, but personally I have never met with it. Again, a mass of lymph, a part of the wall of the appendiceal abscess, may serve as a foreign body.

An infected suture or a few threads of gauze torn from the drainage is often at the bottom of one of these cases of fistula: in others the only way in which they can be explained is a microscopic communication with the bowel, through which only enough fecal matter or gas can pass to keep the sinus open, and not enough to give a decided fecal character to the discharge.

The fecal fistulae may be divided according to the part of the bowel in which they occur—in the small bowel, high up or low down, or in the large bowel. Another way in which they can be divided depends upon whether all or only part

of the feces are discharged through the fistula. When all of the feces escape through the fistulous orifice of communication with the large bowel, we have formed, for all practical purposes, an artificial anus. Fecal fistula involving the upper part of the small bowel can be differentiated from those situate low down in the small bowel by the pronounced biliary character of the discharge, and the discharge of liquids from the fistula immediately after their ingestion. In the former, the biliary discharge excoriates the skin, and forms one of the most embarrassing variety of fistula with which to deal. This is so pronounced in some cases and the pain so great as of itself to indicate operation for the repair of the fistula.

More solid feces show that the discharge comes from the large bowel. Fecal fistulae of the large bowel are more likely to heal spontaneously than those of the small bowel.

The causes of fecal fistula may be specifically divided into the following:

First. Slipping or sloughing of a ligature used to ligate the stump of the appendix. One or the other of these accidents may occur no matter what method is used to close the wound in the cecum caused by the removal of the appendix, for even if the cecum be repaired by several rows of Lembert sutures, infection of these sutures may cause enough sloughing to open a large fistula in the cecum. This variety of fistula may appear immediately after operation, or even ten days or two weeks later.

Second. Sloughing of an appendix left in situ may cause an especially bad fistula, as here there is not only the opening into the bowel, but also the appendix remaining as a foreign body.

Third. Ulceration into the bowel at the point of adhesion of an inflamed appendix. This is an effort of nature to relieve trouble by drainage of the appendix into the bowel; removal of the appendix leaves the opening in the bowel, which may be overlooked.

Fourth. Pressure necrosis of the bowel from an abscess or from the pressure of a drainage tube or gauze left in at the time of operation.

Fifth. Necrosis of the bowel from interference with its nutritive blood supply either from pressure on the mesentery or from septic emboli in the mesenteric veins. Fistula due to this cause are most common in the cecum or ascending colon. This accounts also for many deaths from absorption of septic material.

Sixth. Tearing the softened bowel in freeing adhesions at the time of operation.

Seventh. Stripping the serous coat from the bowel in freeing adhesions. This is a very common cause of fistula, and one about which we must always be upon our guard against. Most of the nutrition of the bowel is derived from the serous coat, and stripping this off usually causes a necrosis of the underlying bowel.

The symptoms of fecal fistula are from the nature of the trouble perfectly obvious; there is, however, for the first three or four days before and after a fistula appears usually a very high temperature. Fecal fistula may appear in the first few days after operation, but more commonly seven to ten days later, and their appearance at a still later date is not unusual.

The constitutional effects of a fecal fistula are marked by a progressive loss of flesh and strength and impairment of nutrition, owing to the escape of the contents of the bowel containing the elements required for nutrition, in fistula involving the bowel high up in the small intestine, or from absorption of septic material along the tract.

The proper treatment of an appendiceal fistula depends upon whether the fistula is fecal or non-fecal. If it is non-fecal, a careful search should be made for the offending foreign body, as its removal will promptly cause the tract to close; great care should be used in this search not to make a non-fecal fistula a fecal one by traumatism to the bowel.

A great many appendiceal fistulae heal spontaneously, and an opportunity should always be given nature to achieve this result, and operation only undertaken after this has failed. The only exception to this rule is a case in which the fistula is so far up in the small bowel that the nutrition of the patient is seriously interfered with.

As soon as a fecal fistula appears, all drainage should be removed, the tract should not be washed out or packed, and only the external surface be cleaned; nutrition should be given in concentrated form, and every effort made to make the feces as solid as possible, which favors the healing of the fistula. Purgatives should not be given, but bowels opened by enemata, which should not be large enough to regurgitate through the wound.

In non-fecal fistula all that is required in the way of operation is a removal of the offending

foreign body, which should be done very thoroughly, and the tract packed and allowed to heal by granulation from the bottom. When the fistula or sinus communicates with an unhealed abscess cavity the mouth of the fistula should be enlarged sufficiently to permit of a thorough cleansing and packing. When possible, without opening the general peritoneal cavity, the mouth of the cavity should be enlarged sufficiently to make it equal the transverse diameter of the abscess cavity at its widest part. The urinary fistula, of course, must be freely exposed, and the wall of the bladder repaired, best, perhaps, by Lembert sutures.

Operation for fecal fistula is a much more serious matter, as the danger of peritonitis from an infection of the general peritoneal cavity is very great. This is best avoided by cutting wide of the fistula and working towards it, carefully isolating the infected bowel by sterile gauze.

Fistula of the small bowel usually requires resection; as a simple repair, if the wound was extensive, would probably reduce the calibre of the bowel to a dangerous extent, and the bowel involved is often in so unhealthy a condition that sloughing would be likely to follow. My preference in this work is for an end to end anastomosis without mechanical appliances.

Fistula of the large bowel may either be resected or repaired, according to the judgment of the operator in each particular case. In some instances in which the cecum has been very much injured it may be wise to do a lateral anastomosis between the colon and the ileum. This anastomosis may be done either with the Murphy button or needle and thread alone, according to the fancy of the operator. Should a resection of the large bowel be necessary, my preference is for an end to end union with needle and thread alone.

If all the feces have been passed by the fistula the terminal portion of the bowel should be carefully examined to see that it is free from obstruction. Another point that we must be particularly on our guard against is the existence of more than one opening into the bowel, for the overlooking of a second fistula has often rendered unavailing an otherwise brilliant operation.

In regard to drainage after these operations, I will say that it is usually required, although sometimes they can be closed without it, which I prefer when possible. The necessity for drainage depends both upon the amount of inflamma-

tory exudate around the fistulous tract, and upon the state of the bowel.

In concluding my remarks upon this distressing sequel to operations for appendicitis, I should like to again lay special emphasis on one single fact—the importance and necessity for an early recognition of acute appendicitis, and its natural corollary, the prompt institution of surgical interference. If the appendix is removed before any peri-appendiceal involvement or impairment of the structures contiguous to the diseased appendix has occurred, then it is well-nigh impossible for abscess to occur, except as a result of contamination through a defect in the asepsis of the operative technique. If this is true, then we can avoid the formation of the products of the inflammatory process, prevent invasion of the intestinal walls, make it unnecessary to have such extensive manipulation as is required in the advanced cases, lessen the number of adhesions to be broken up, and leave the field of operation in practically as good a condition as it was prior to the attack of appendicitis.

1634 Walnut Street.

PELVIC INFLAMMATION IN THE FEMALE; ITS DIAGNOSIS AND MANAGEMENT BY THE GENERAL PRACTITIONER.*

By ABRAM BROTHERS, B. S., M. D., New York, N. Y.,

Visiting Gynecologist to the Beth Israel Hospital; Adjunct Professor Gynecology, N. Y. Post-Graduate School and Hospital.

To the specialist the term "pelvic inflammation" means nothing in particular. The uterus, tubes, ovaries, pelvic peritoneum, ovarian tissue, or lymphatics of the broad ligaments may be one or all involved in the process of "pelvic inflammation." And still to the general practitioner the clinical picture is as much an entity as the cellulitis, abscesses and peritonitis complicating an attack of appendicitis. Pelvic inflammation, then, is best regarded as an infection arising in the uterine interior, and resulting in a number of simultaneously existing pathological states.

Pus is a common termination of pelvic inflammation. In 86 cases met on the operating table by the writer, more than twelve showed purulent involvement of the adnexa. In the writer's experience gonorrhœal and puerperal cases are

nearly equal in frequency. In about one-half of chronic cases pus in the pelvis spontaneously becomes sterile.

The principal symptoms of pelvic inflammation are pain, irregular menstruation, and sterility. Death seldom occurs, excepting in acute puerperal infection, or from spontaneous rupture of abscesses.

For purposes of diagnosis by the general practitioner, individualization of the various local processes is not essential. The history, subjective symptoms, and local tenderness, associated or not with exudates, will be sufficient.

The presence or absence of pus constitutes the sharp line of demarcation between the medical and surgical treatment of pelvic inflammation. The aspirator renders invaluable assistance at times in reaching a conclusion.

The treatment is preventive, palliative, or radical. The first two methods belong to the domain of the general practitioner; the last exclusively to that of the gynecologist.

Preventive treatment applies to the aseptic management of abortion and labor. Men afflicted with gonorrhœa must not infect their bed-fellow. There can be no two rules in this connection.

The treatment includes rest, ice locally to the pelvis, hot douches and opiates in acute cases only. Chronic cases are treated palliatively with tampons saturated with various medicaments. They give relief, however, according to the author, because they support the inflamed pelvic tissues. Counter-irritation by iodine per vaginam, and blisters over the pelvis, are beneficial in many cases. Massage is of no value, and electricity of slight value. In fact, both of these measures are distinctly contra-indicated in certain cases. Severe disturbances of the digestive and nervous systems will be better handled by the conscientious and intelligent general practitioner than by the specialist.

New Orleans Polyclinic.

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For further information, address Dr. Isadore Dyer, Secretary, New Orleans Polyclinic, Post-office box 797, New Orleans, La.

*Author's abstract of a paper read before the New York State Medical Association October 23, 1901.

Analyses, Selections, Etc.

Congenital Valvular Obstipation.

Dr. Thos. Chas. Martin, 729 Case Avenue, Cleveland, Ohio, President of the American Proctologic Society, etc., in his paper on this subject, read before the recent session of the Mississippi Valley Medical Association, said, that congenital valvular obstipation is by no means uncommon. In an hundred and seventy-two cases of obstipation he has encountered but twenty typical cases in adults. However, the majority of his cases not so recorded have in their history and appearance that which signifies the previous existence of this condition, and it is this element which predisposed to an acquired hypertrophy of the valves. For instance, let us recognize that the condition is an overlapping of two rectal valves. These valves are attached on opposite sides, and are in a vertical direction, but one-eighth of an inch apart at their bases. Their free edges being movable, are thrown in contact, and thus form a barrier to the descent of the feces. This illustration, be it understood, is the case of a child four years old, whose rectum is 4 inches in length and 2 inches in transverse diameter. When adolescence is attained the rectum has been about doubled in length and breadth, and at this period in such a case the valves' bases may be separated by one-half inch in the vertical direction, and their free edges separated by an inch or two. Thus may a subject outgrow congenital valvular obstipation; yet, by reason of their propinquity, he may more readily acquire an obstructive degree of valve hypertrophy than another. This fact has been so frequently observed that one experienced in proctoscopy can, without any hint whatever, tell a patient after an examination of his rectum whether or not he, as a child, suffered from difficult defecation.

What Percentage of Rheumatic and Gouty Patients Develop Phthisis Pulmonalis?

Dr. Thomas F. Reilly, 314 west 141st Street, New York city, read before the New York State Medical Society during its recent session, held October, 1901, an abstract of which is here presented:

Many of the older writers believed that an antagonism existed between gout and rheumatism, on the one hand, and phthisis pulmonalis on the

other. To ascertain how much truth there might be in this statement, the writer studied 100 cases of phthisis in St. Joseph's Hospital. In this number there were but 6 who had had during some period of their lives an attack of acute articular rheumatism. In only one case did the rheumatism occur after the onset of the tuberculosis. In the case of the others there was an interval varying from 2 to 10 years between the disappearance of the arthritic phenomena and the development of the tuberculosis. Three of these cases had fibroid phthisis of 3 or 4 years' duration, with little tendency to the formation of cavities. They were in fair general condition, and have continued so. Two of the others had suffered from the disease for about a year. One of these has since died. The other left the hospital much improved in general condition. The sixth case died within 9 months of the inception of the tuberculosis. This gives a mortality of 2 per cent. Four other cases had a family history of rheumatism. In 3 of these the disease appeared to be stationary; the fourth died within 6 months of the inception of the disease. None of the 100 cases ever had gout, nor any of the diseases usually classed as being of gouty or rheumatic origin. With the possible exception of 3 cases of chronic endocarditis, there was not a single family history of gout. Prolonged loss of sleep or alcoholic excesses and exposure preceded the tuberculosis in 82 per cent. of the cases. In his analysis, Croftan had similar results. The natural result of such a deduction—i. e., that an antagonism, more or less marked, exists between the two diseased conditions—would be that we should cultivate the *so-called* uric-acidæmia in those who, by heredity or environment, are likely to succumb to phthisis. Most of the permanently arrested cases of phthisis are affected with the arthritic taint.

Minute Foreign Bodies Superficially Injuring or Wounding the Eye.

Dr. A. C. Corr, East St. Louis, Ill., Ex-President of the Illinois State Medical Society, etc., presented a paper on this subject, by request, to the meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee, held at Nashville, Tenn., October 10-11, 1901. The fact that he has seen a very seriously wounded eye saved by the less perturbing influence of conservatism, and a very insignificantly wounded eye

lost from want of radical treatment, leads him to write on this subject.

The wounds referred to in the title embrace all superficial wounds of, and small foreign bodies lodged in, the conjunctiva—both palpebral and ocular—and more especially of the cornea. Substances causing such wounds are usually small bits of steel, iron, or other metal, emery, cinders, rock, wood and rust, sand, lime, etc., which may penetrate the surface of the conjunctiva or cornea. Often the offending substance is only thrown into the conjunctival cul-de-sac, and wounds by being more or less forcibly rubbed between the palpebral and ocular surfaces. The little "pepper bug" that flies at night is often so caught in the eye, causing burning much like pepper, and causes inflammation.

Such foreign bodies as lodge in the conjunctival cul-de-sac are usually found just under the upper lid, and are easily removed after proper precautions.

Superficial wounds of the cornea are by far the most important, and differ singularly from most wounds in that the foreign body remains imbedded in the corneal tissue. Often the wounding particle is so small as to be difficult to locate, and quite as difficult to remove. These facts make it necessary that very diligent search should be made in and on the cornea for even the smallest particle. Bifocal illumination and magnification must be resorted to. Even the ophthalmoscope alone will sometimes reveal the offending substance. Sometimes the patient must be placed so that an image of the window or source of daylight will be reflected from the cornea, while an assistant holds an object a foot or two from the eye, and directs the patient to look at it; then move the object so that the reflection will in succession cover every section of the surface of the cornea; as it passes over the locality of the foreign body, it will cause a ripple in the reflection of the window or source of light. Thus, revealing the locality, a closer view may be taken with other devices, such as bifocal illumination, or very strong magnification.

The difficulty in seeing the particle is much increased by having to search for it imbedded in a transparent medium with a colored screen—the iris or a black pupil for a background—the particle itself being black. The examiner's eye will, almost unavoidably, focus for an object in the iris instead of one suspended, as it were, a line or more in front. Many times, the finding is facilitated by viewing the surfaces of the cor-

nea from above or below or from the side, thus keeping the line of vision on the plain of the surface of the iris. If, however, the particle has been imbedded in the cornea for several hours or days, there will have formed an infected area of a whitish color around that will readily reveal its location. Generally, where the foreign body is in or on the cornea, the patient will insist that it is under the upper lid—to the inner or outer side.

The superficial epithelial layer of the cornea is a very softish jelly-like substance, and appears as if such a substance was evenly spread over the sub-epithelial tissue, which is dense and tough. Foreign bodies are usually more or less imbedded in this softish epithelium, and project into the more dense tissue below or project above the epithelium, so as to scratch the lids as it rubs over them during the winking of the eye or rolling of the globe; hence the characteristic pain.

Simple conjunctival wounds are seldom serious at first; but those of the cornea may be primarily or may become the gravest possible because of the singularity inherent in corneal tissues that makes them susceptible to infections that destroy them or their transparency.

To remove these foreign bodies, the surgeon should stand at the back of the patient, who is seated in a low-back chair. He should have a tumbler full of an antiseptic collyrium—boric acid, gr. xv to the ounce of distilled water, or tepid normal salt solution—and a dental bulb syringe that will hold at least half an ounce or more, with an olive-shaped tip, a large sponge moistened so it will readily absorb water, one or two napkins, four or five of a variety of tooth-picks, with a bit of absorbent cotton rapped on one end, dipped in collyria, and squeezed with clean hands or towel, so that they will take up tears or excess of water from the cul-de-sac more readily, a variable amount of a two per cent. solution of cocain, with pipette or dropper in it, a fine pointed oculist's scalpel, or the ordinary spud and needle—a double instrument that is known in the shops by that name—two lenses for bifocal illumination, and one larger, "reading lens," to throw extra light on the eye, or to magnify the object sought. Many times an assistant should use the large lens, hand instruments, and wipe out tears or excess of water, if desirable or necessary. Wash out the cul-de-sac with the collyrium used copiously before beginning the search. Instil the cocain solution, a drop or

two at a time, every minute or two till the cornea is so anesthetized as not to feel the contact of the tip of the pupil, or the cotton of the wipes—tooth-pick and cotton—when touching it lightly. As soon as cocaineizing is begun, begin search for the foreign body. Wash or wipe the skin around the orbit with the wet corner of a towel or bit of absorbent cotton. Turn the patient's head back at a proper angle to face the surgeon and source of light, and rest against his chest. The light should come from one source, to avoid shadows, and as a means of artificial light near to the other, so that either or both could be used without moving the patient.

The cul-de-sac above and below should be well turned out and closely inspected; and any particle not washed away by the primary irrigation, should be brushed out with the little "wipe" prepared for that purpose; any conjunctival wounds should be properly cleansed and stitched, if large enough. Generally in this class of wounds the offending particle will be found sticking in the cornea, when the spud or needle or other sharp-pointed instrument will have to be used. If the particle is a piece of steel, a clean magnet may lift it out of its bed. If the particle has been long imbedded in the cornea, and if there is the least whitish infiltration around it, the bed should be well curetted with a spud, and a small bit of yellow oxide ointment—a grain to the drachm—should be carefully rubbed into it, or a mild cauterization with "modified carbolic acid"* made. Select a probe about the size of the bed of the particle after removal, and dip it into the drop of acid through the water above, and directly out through it, and put the point of the probe so coated in the pit or point to be cauterized. This is a mild cautery or germicide, and, if applied carefully, will suffice without seeming undue severity. If stronger infection seems present, the full strength of acid or actual cautery is better—taking precaution (as in corneal ulcer) to prevent spreading.

Often, the removal of these little particles is very difficult. Imbedded in dense tissues below the epithelium, the needle cannot be made to go under; so the opening around must be enlarged. The eye will fill with water, when the assistant can do good service by sponging with the little "wipes" mentioned.

The collyria may have to be turned on the point while working at it, to remove the mucus and broken down epithelium; this, in turn, must be sponged away with the little "wipe"; the surplus collyria should be caught with the moist sponge against the face. This procedure must be persevered in till removal is accomplished.

The particle may tend to work through the cornea into the anterior chambers, when a keratotomy may have to be made to enter the chamber at another place, so as to press on the projecting particle from behind. In an emergency of this kind, an assistant and additional instruments will be indispensable.

Minute corneal wounds open the way for any variety of corneal infection; and as vision is often impaired or lost, it is of great importance that such foreign bodies be removed and their wounds treated aseptically as soon as possible. If irritation follows, notwithstanding precautions, the case should be treated according to the general principles which should govern in such cases.

The many filthy devices used to remove foreign bodies from the eyes explain the importance of this subject. The author has seen flaxseed first moistened in the mouth used in the eye; or the plume of a chicken feather stripped back from near the tip, so as to leave a fan-shaped part, moistened with saliva, and the cul-de-sacs swabbed out with lids closed on it; or a piece of slippery-elm, chewed so as to moisten and flatten it, applied in the same way; or the everted lids and the globe wiped out with a dirty handkerchief from a tobacco pocket, moistened with spittle from a mouth with decayed teeth; or the eye licked out with the tongue of another person not known to have a clean mouth, etc.

The fact that these minor injuries and wounds of the eyes occur very frequently among employees of the railroads and those who are travelling in the trains, exposed as they are to the showers of flying cinders, make it of importance that the crews of the trains, together with conductors and porters and brakemen of passenger trains, should be instructed by the road surgeon how to administer "first aid" in such cases.

Each train should have a little box of necessary appliances for the removal of the wounding particle from the conjunctival cul-de-sac in at least a cleanly way, and conductors should be instructed as to how to dress them safely against subsequent infection till greater skill and preparation can be had. Such a supply of ap-

* Modified carbolic acid is the little drop of the acid that gathers at the bottom when a drop or so of it is put in a little water.

pliances should be kept at division stations accessible when crews and passenger trains start out.

Indeed, manufacturing shops should be equipped and supplied in much the same way, for such wounds and injuries occur next most frequently in these shops. The more severe ones that destroy the eye, or nearly so, more frequently occur here.

The *First-Aid apparatus-box* should be about 4 by 5 inches square and 8 inches long, and should contain two or more ounce vials of the disinfecting collyria, a dropper, and a dozen or more of the little "*wipes*," some tooth-picks, absorbent cotton, and a towel, and some small bits of soft, fine cotton about the size of a match. These can be cut into any shape with which a foreign body can be removed from the cornea, and from cul-de-sac with the little *wipes* of cotton and tooth-pick.

The parties in whose hands these are entrusted for use should be instructed to proceed with as perfect cleanliness as possible, not always to remove the offending particle, but to cleanse the eye, cocain and bandage it, so that the least damage may occur to it till a surgeon competent can be reached, so as to preclude, if possible, the application of any of the uncleanly processes mentioned.

Ages at Which Different Diseases Kill.

The *Insurance Press*, October 16, 1901, gives very interesting details with reference to this subject. From them it would appear that the chances are six to four that consumptives will die before the age of forty-five; fifty-six chances to forty-four that sufferers from "heart diseases" will reach sixty, etc.

No records of "the natural shocks that flesh is heir to" are kept more scientifically than the data which the life insurance companies accumulate from their own experience. The cause of every death among policyholders is investigated with the utmost care by the medical directors of the company interested. Thousands of physicians, selected for their skill, are attached to the medical departments of the great American life insurance offices. In every community of consequence the companies have physicians on guard to examine into the physical condition of applicants for insurance and to investigate causes of death when called upon to do so.

The Mutual Life Insurance Company of New York, the oldest and largest of the American

companies—in fact, the largest life insurance company in the world, has prepared some interesting statistics showing the causes of the deaths among its policyholders from the commencement of its business, in 1843, to the end of the year 1898, a period of fifty-six years. The first year only three policyholders died; in 1898, the deaths numbered 3,421. In the 56 years, 46,525 deaths passed under review, from a total of more than 1,000,000 individuals on whom insurance had been written.

As might be expected, the mortality experience of the Mutual Life is a vast storehouse of scientific as well as curious facts. The scientific things may be left for the scientists to study. Popular interest will center in the things that everybody can understand.

For example, at what ages do certain diseases carry off their victims? That is something that the good citizen who has "symptoms" would like to know.

The Mutual Life's figures can tell nothing of individual cases, of course, but of average or typical cases they tell everything, and here are some of the revelations as interpreted by the *Insurance Press*:

Ages at Which Different Diseases Stop the Human Machinery.

If a person is to die of consumption, the Mutual Life's records show the chances are about 6 to 4 that he will die under the age of forty-five. Deaths from consumption are divided as follows, by ages: Under forty-five, 59 per cent; forty-five to sixty, 29 per cent.; above sixty, 12 per cent.

If a person is to die of other general diseases, small-pox, measles, diphtheria, erysipelas, cancer, diabetes, etc. (which cause in the aggregate nearly one-eighth of all the deaths), the chances that he will die under age of forty-five, between forty-five and sixty, or above sixty, do not differ widely. Thirty per cent. of the deaths from these diseases occur under age forty-five, 36 per cent. between forty-five and sixty, and 34 per cent. above sixty.

If a person is to die of apoplexy, softening of the brain, paralysis, etc., the chances are 55 to 45 that he will live to be sixty or more. Only 12 per cent. of the deaths from these diseases occur under forty-five years; 33 per cent. occur between ages forty-five and sixty; 55 per cent. occur above age sixty.

If a person is to die from some other nervous disease besides apoplexy, paralysis, etc., he will

probably pass away before he is sixty. Thirty-five per cent. of the deaths from these causes take place under age forty-five; 38 per cent. between ages forty-five and sixty; 27 per cent. above age sixty.

If a person is to die of heart disease the chances are 56 to 44 that his heart will perform its allotted task until he is sixty. Thus, according to the Mutual Life Insurance Company, he may expect to live to become gray-headed or bald-headed. Not more than 11 per cent. of the deaths from heart disease occur under age forty-five; 33 per cent. between forty-five and sixty; 56 per cent. above sixty.

If a person is to die of pneumonia the chances are 64 to 36 that he will not reach sixty. Twenty-nine per cent. of the deaths from pneumonia occur under forty-five; 35 per cent. between forty-five and sixty, and 36 per cent. above sixty. Other respiratory diseases, such as bronchitis, pleurisy, etc., grant a little longer lease of life. For such causes the deaths under forty-five are 24 per cent.; between forty-five and sixty, 30 per cent.; above sixty, 46 per cent.

If a person is to die of some derangement of the digestive system the chances are more than 2 to 1 that he will not live to be sixty. Thirty per cent. of the deaths from diseases of this class occur under age forty-five; 38 per cent. between ages forty-five and sixty, and 32 per cent. above age sixty.

If a person is to die of Bright's disease he has a fair chance of reaching sixty. Only 16 in 100 of the victims of Bright's disease die under forty-five; 37 in 100 die between forty-five and sixty; the remaining 47 per cent. die after completing three score years. Other complaints, classified as genito-urinary, are old-age diseases, 77 per cent. of the deaths from such causes occurring at ages above sixty.

If a person is to die from accidental or violent causes the chances are 86 to 14 that he will not see sixty. Fifty per cent. of the deaths from violent causes occur under forty-five.

If a person is to die from some obscure, ill-defined or unclassified disease he has 62 chances in 100 of reaching sixty. Human bodies that have been subjected to the wear and tear of three score years or more are most subject to the kind of break-downs that puzzle the doctors.

If a person is to die of typhoid fever his summons will probably come before he reaches forty-five. Fully 68 per cent. of the typhoid fever deaths occur under forty-five; another 23

per cent. between ages forty-five and sixty, the remaining 9 per cent. at higher ages.

Percentages of Deaths, by Ages, from Familiar Diseases, as Shown by Fifty-Six Years' Experience of the Mutual Life Insurance Company of New York.

	Per cent. Under 45	Per cent. 45 to 60	Per cent. Above 60
Consumption	59	29	12
Other general diseases	30	36	34
Apoplexy, paralysis, softening of brain, etc.	12	33	55
Other nervous diseases	35	38	27
Heart disease	11	33	56
Pneumonia	29	35	36
Other respiratory diseases	24	30	46
Digestive diseases	30	38	32
Bright's disease	16	37	47
Other genito-urinary diseases ..	..	..	77
Unclassified and ill-defined	14	23½	62½
Typhoid fever	68	23	9

The data given above relate to all lives, without regard to sex. The essential differences between the sexes in the mortality tables result from the accidents and diseases due to the function of maternity.

Among causes of mortality common to both sexes the widest differences are found in the number of deaths from cancer and from violent causes. The latter causes are far more fatal among males than females. On the other hand, the cancer death-rate among females is much greater than among males.

Landou's Sign of Slight Ascites.

According to *Medical Press and Circular*, October 16, 1901, slight ascites is frequently a very early symptom occurring in connection with malignant growth. By the usual diagnostic methods it is, however, extremely difficult to appreciate and recognize small quantities of free fluid in the peritoneal cavity. A characteristic sign, known as Landou's sign, affords in some cases a valuable help in the recognition of the presence of a small quantity of fluid in the abdomen. Landou claims to have been greatly assisted in arriving at a diagnosis by observing whether it was possible or not to grasp the uterus bimanually—that is to say, to make the fingers meet at the sides of the pelvis. With the patient lying flat on the back the uterus is slightly depressed and is described as giving the impression of resting on a cushion of air or a small collection of fluid. Continuing the examination, the patient is placed in the raised pelvic position and the thighs are flexed when the uterus can be

examined bimanually without difficulty, and the fingers are found to meet at the sides of the pelvis, thus indicating that the fluid has gravitated in the direction of the diaphragm. It will be easily seen that for the success of this manoeuvre the bladder must be empty. There is no malady in which it is more desirable to improve the chances of correctly diagnosing the condition as early as possible as in malignant disease, and Landou's suggestion is sure to excite a considerable interest on this account.

Cocaine Surgery.

According to Dr. Halsted, of Johns Hopkins University, about 20 per cent. of all operations in general surgery are performed under the use of cocaine. Cocaine being a local anesthetic, does not deprive the patient of consciousness during the operation. This anesthetic is also supposed to be free from many of the dangers that attend the use of chloroform and ether. There is a natural dread of taking an anesthetic that produces complete unconsciousness, and the people are very glad to use cocaine instead wherever the operation is such as to make it feasible.

The operations for which cocaine is more frequently used are hernia, varicocele, and hydrocele, and even operations for appendicitis are made by the use of cocaine. The removal of superficial tumors is frequently made in this manner. There have been a few amputations done. It is especially desirable to use cocaine wherever the patient is not in a condition of health to make the use of chloroform advisable.

The strength of the solution generally used is one part of cocaine hydrochlorate to 1000 parts of distilled water.—*Med. Talk*, October, 1901.

ERICK C. SHATTUCK, A. M., M. D., Jackson Professor of Clinical Medicine, Harvard University, etc. *With 185 Illustrations in the Text, and 1 Plate.* New York: D. Appleton & Co. 1901. Royal 8vo. Pp., 1,242. Cloth, \$6.00; leather, \$7.00.

The former American edition, published in 1893, contained 1,043 pages; so that the book now under notice has about 200 more pages of text. Large portions of the text have been almost completely rewritten—in particular, the whole doctrine of gastric diseases, and several chapters in other sections, including gall-stones, intestinal parasites, etc. Additions and improvements are manifest throughout, which cause it to retain all the merits of the earlier production, with the advantage of being fully in line with the most recent medical investigations. The doses in metric system have been changed to the approximate equivalents in apothecaries' weight, the original doses being retained in parenthesis. The translators have also added a chapter on the plague, and various notes, which may prove of assistance. We confess to a very great liking for "Strumpell's Text-Book, of Medicine," especially this edition, which is so well translated and brought up to dates by the author and the editorial notes, interspersed everywhere, by the translators and Dr. Shattuck.

Physician's Pocket Account Book. By J. J. TAYLOR, M. D. Published by *The Medical Council*, Philadelphia, Pa.

Dr. Taylor is the editor of the popular medical journal, *The Medical Council*, and has studied the wants of practitioners. While the design of this book is all right, it has two objections. It is too large for a pocket book, and is too small for a satisfactory ledger. It has a flap and two pockets, but no place for a pencil or pen. It does, however, possess a number of advantages which may override the objections above mentioned. Thus, no posting into a ledger is required, as each account is originally made in ledger form. Spaces are nicely ruled for the name, etc., of the party responsible for the account, the person to whom each service is rendered, and to describe the exact service rendered, with columns for charges and credits—thus enabling the book to stand every legal test. It thus enables the doctor to collect from a decedent's estate, or the doctor's executors to collect from debtors. It also enables the doctor to prove his account in court. The sign systems of

Book Notices.

Text-Book of Medicine. For Students and Practitioners. By ADOLPH STRUMPELL, Professor and Director of the Medical Clinique at the University of Erlangen. *Third American Edition.* Translated by Permission from the Thirteenth German Edition, by HERMAN F. VICKERY, A. B., M. D., Instructor in Clinical Medicine, Harvard University, etc., and PHILIP COOMBS KNAPP, A. M., M. D., Ex-President of American Neurological Association; Clinical Instructor in Diseases of the Nervous System, Harvard University. *With Editorial Notes by FRED-*

visiting lists are valueless in some States for all these purposes. They serve simply as memoranda for the physician, but cannot be introduced in court as evidence. The system adopted in this "Physician's Pocket Account Book" requires only one book at a time, and can be begun at any time and closed at any time.

Editorial.

Assistant Surgeon Freedman's Hospital.

The United States Civil Service Commission invites attention to the fact that the examination announced for October 29-30, 1901, to be held in any city in the United States where postal free delivery has been established, for the position of assistant surgeon at the Freedmen's Hospital, is postponed to November 12-13, 1901. The examination will consist of the subjects mentioned below, which will be weighted as follows:

Subjects.	Weights.
1. Letter writing	5
2. Anatomy and physiology	10
3. Surgery and surgical pathology	20
4. Chemistry, materia medica, and therapeutics	5
5. Bacteriology and hygiene	5
6. Theory and practice of medicine and general pathology	25
7. Obstetrics and gynecology	15
8. Experience (practice)	15

Total

Applicants will be given credit for practical experience according to length and character. Maximum credit will be given only to those who have had three or more years' experience in private practice, or two years' in hospital work or dispensary service.

The examination will be divided as follows: First day, first four subjects; second day, remaining subjects.

Age limit, twenty years or over.

From the eligibles resulting from this examination it is expected that certification will be made to the positions of assistant surgeon at the Freedman's Hospital, Washington, D. C., at a salary of \$1,000 to \$1,500 per annum, and to other similar vacancies as they may occur.

This examination is open to all citizens of the

United States who comply with the requirements and desire to enter the service. All such persons are invited to apply, and applicants will be examined, graded, and certified with entire impartiality and wholly without regard to any consideration save their ability as shown by the grade attained in the examination, except that preference may be given to residents of States and Territories which have not received an excess of their share of appointments under the apportionment.

Persons who desire to compete should at once apply to the United States Civil Service Commission, Washington, D. C., for application forms 304 and 375, which should be properly executed and promptly forwarded to the Commission.

Medical Society of Virginia.

The announcement of the thirty-second annual session of the Medical Society of Virginia, issued too late for incorporation in our last issue, is very attractive. The session is to be held in the Masonic Home building, Lynchburg, Va., November 5, 6, and 7, 1901, beginning at 8 P. M. Tuesday, November 5th. Dr. Samuel C. Busey, Lynchburg, is chairman of the Committee of Arrangements. He states that ample hotel accommodations in easy reach of the hall of meeting have been provided—the Carroll Hotel at \$2.50 per day, and the Arlington Hotel at \$2 per day. Those who prefer private boarding houses can be provided for by writing in advance or such. Ample arrangements have also been provided for exhibitors. Those desiring space and rates should at once write to the chairman of the Committee of Arrangements.

The railroads generally have agreed to a rate of *four cents per mile, round trip*, in the sale of tickets to Lynchburg for this session. tickets to be sold on *November 4, 5, and 6, 1901*, with a final limit of *November 9th* for return from Lynchburg—continuous passage in each direction. The following *total rates* on this basis *will apply from junctional points—viz.:*

FROM.	VIA.	RATE.
Alexandria	So. R'y	\$6 65
Burkeville	N. & W.	2 85
Charlottesville	So. R'y	2 40
Clarksville	So. R'y	3 95
Danville	So. R'y	2 65
Denniston June	N. & W.	2 90
Emporia	A. C. L., So. R'y	6 75

Front Royal . . . So. R'y, N. & W.	7 65
Orange So. R'y	3 50
Petersburg N. & W.	4 90
Riverton S. R'y, N. & W.	7 70
Richmond C. & O., So. R., A. C. L.	5 00
South Boston So. R'y	3 65
Strasburg So. R'y	8 05
Suffolk N. & W.	7 25
Washington, D. C. So. R'y	6 90

The Chesapeake and Ohio railway will use rate of one and one-third fares on the certificate plan. (This plan is, purchase a ticket from your home station to Lynchburg, paying full fare for it; also, get the agent to give you a receipt stating that you have paid full fare; then on arrival at Lynchburg get the secretary, Dr. Landon B. Edwards, to endorse your receipt, which receipt, when presented to the agent in Lynchburg, will entitle you to purchase a return ticket for one-third fare.) The fare on this road from Richmond to Lynchburg will be five dollars for the round trip.

Proposals for fellowship should be submitted in due form to the Committee on Application for Fellowship, which committee will practically be in session during each meeting of the Society. An unusually large number of applications has already been received.

Registration.—Each Fellow, fraternal delegate, invited guest, etc., on entering the hall, should register his name, post-office address, etc., in a book provided for the purpose on one of the secretary's desks.

Officers of the Society for current year:

President—Dr. J. R. Gildersleeve, Tazewell Va.

Vice-Presidents—Drs. J. H. Neff, Harrisonburg, Va.; J. E. Copeland, Round Hill, Va.; and Charles W. Pritchett, Danville, Va.

Recording Secretary—Dr. Landon B. Edwards, Richmond, Va.

Corresponding Secretary—Dr. Jno. F. Winn, Richmond, Va.

Treasurer—Dr. R. T. Styll, Newport News, Va.

Executive Committee—Dr. John N. Upshur, Richmond, Va., chairman.

Committee on Nomination of Applicants for Fellowship—Dr. William D. Turner, Fergusson's Wharf, Va., chairman.

Committee on Publications—Dr. Hugh M. Taylor, Richmond, Va., chairman.

Necrological Committee—Dr. Livius Lankford, Norfolk Va., chairman.

Judiciary Committee—Dr. William P. McGuire, Winchester, Va., chairman.

Business Committee—Dr. Joseph A. White, Richmond, Va., chairman.

Committee on Invitations—Dr. M. D. Hoge, Richmond, Va., chairman.

Committee on Delinquents—Dr. William D. Turner, Fergusson's Wharf, Va., chairman.

Committee on Legislation—Dr. R. S. Martin, Stuart, Va., chairman.

Important Resolutions Adopted 1897:

The Business Committee and Recording Secretary shall arrange programme in such manner as will give not more than one hour at the morning and afternoon sessions to miscellaneous business, committee reports, etc. Any business, however important, not transacted in the hour allotted, must be laid over until the next business hour, so as not to interfere with the scientific work.

A Business Committee of five was established, to which all business shall be submitted by the Secretary and Treasurer, and which shall transact all business that does not require reference to the general body, and to put such business in shape to be acted on promptly by the Society. All business transacted by this committee shall be reported to the general meeting.

Papers for publication, however full or lengthy, shall be limited to twenty minutes in their reading; in their discussion, not more than five minutes shall be allowed each debater; and no speaker shall be allowed to speak more than once on the same subject.

The following programme has been adopted:

Tuesday Night, November 5th, 8 P. M.—Call to order; prayer; welcoming address; address to public and profession—*Some Delusions of Medicine*, by Dr. S. W. Dickinson, of Marion, Va.; *Address of the President*, Dr. J. R. Gildersleeve, Tazewell, Va.

Executive Session—Reports of committees, including that of Committee on Applications for Fellowship (Dr. W. D. Turner, Fergusson's Wharf, Va., chairman) and officers.

Miscellaneous Business—Report of the committee to confer with the committee of the Virginia Pharmacal Association to consider the subject of pure drugs, and to require that all drugs dispensed, etc., shall be plainly labelled, showing the contents and quantity of each. (See *Transactions*, 1900, page 362.) Dr. Jacob Michaux, Richmond, Va., chairman.

Announcements.

Wednesday Morning, November 6th.—9:30 A. M., call to order; reading of last night's minutes. After the report of the Committee on Applications until 11 A. M., the time will be taken up with *Reports of Clinical Cases*, no individual report to occupy more than five minutes. At 11 A. M., the *subject for general discussion* will be called for: *The Uric Acid Diathesis and Its Treatment*, Dr. William S. Gordon, Richmond, leader. Dr. L. G. Pedigo, Leatherwood, Va., will follow with a paper on *Clinical Odds and Ends of Uric Acid*. The subject, *Uric Acid Diathesis and Its Treatment*, will then be open for *general discussion*, no Fellow having the right to over *five minutes* for his remarks. Dr. Gordon will have the privilege of closing the discussion.

Other papers will then follow in the following order:

Gastro-Intestinal Therapy. By Dr. John N. Upshur, Richmond, Va.

Pneumonia—Its Symptoms, Etiology and Treatment. By Dr. Frederick Horner, Marshall, Va.

Treatment of Delirium Tremens. By Invited Guest, Dr. T. D. Crothers, Hartford, Conn.

Physiology and Pathology of Metabolism. By Dr. G. W. Drake, Hollins, Va.

Negative Medicine—Wisdom in Withholding. By Dr. P. Winston, Farmville, Va.

The Afternoon Session will be called to order at 4 P. M. After reports of committees and miscellaneous business, reading of papers and discussion of same will begin at 4:30 P. M., in the following order:

Trichinosis, with Report of a Case. By Dr. R. M. Slaughter, Theological Seminary, Va.

Purpura. By Honorary Fellow, Dr. John Herbert Claiborne, Petersburg, Va.

The Germ of Yellow Fever. By Dr. Frank H. Hancock, Port Norfolk, Va.

Serum Therapy. By Dr. Charles R. Grandy, Norfolk, Va.

Triple Cases, Illustrative of Courage Necessary to Success. By Dr. A. P. Bowles, Scottsville, Va.

Why Doctors Disagree—A Plea for a Modern Code of Ethics. By Dr. Bittle C. Keister, Roanoke, Va.

During the Night Session, after call to order at 8 P. M., the reading and discussion of papers will occur in the following order:

Report of the Special License Tax Committee, and Co-Operation, and Cash. By Dr. J. Beverly Desbazo, Ridgeway, Va.

Proper and Improper Uses of Emmenagogues. By Honorary Fellow, Dr. J. Wesley Bovee, Washington, D. C.

Management of Occipito-Posterior Positions. By Dr. John F. Wier, Richmond, Va.

Treatment of Puerperal Sepsis. By Dr. Edward McGuire, Richmond, Va.

Guarding the Heart Before Laparotomies and Other Capital Operations. By Honorary Fellow, Dr. Jacob Michaux, Richmond, Va.

Treatment of Fracture of the Humerus. By Dr. C. F. Rinker, Upperville, Va.

Thursday Morning, November 7th—10 A. M. After call to order, etc., the following papers will be read and discussed:

Treatment of Stricture of the Urethra. By Dr. Lewis Wheat, Richmond, Va.

Report on a New Supra Vaginal Hysterec-tomy Forceps. By Dr. John W. Dillard, Lynchburg, Va.

Sarcoma of the Testicle. By Dr. Lewis C. Boshier, Richmond, Va.

Progress We Have Made in Surgery About the Region of the Appendix. By Honorary Fellow, Dr. Joseph Price, Philadelphia, Pa.

Frequency, Diagnosis, Prognosis and Treatment of Typhoid Perforations. By Dr. Hugh M. Taylor, Richmond, Va.

Past, Present and Future of Cancer. By Dr. Stuart McGuire, Richmond, Va.

During the Afternoon Session, beginning at 4 P. M., immediately after call to order, the Society will proceed to the election of officers, standing committees, etc., selection of place, etc., for the thirty-third annual session.

Immediately afterwards papers will be called for.

Spina Bifida. By Dr. J. W. Henson, Richmond, Va.

Strangulated Hernia. By Dr. Southgate Leigh, Norfolk Va.

Papers the titles of which were received too late for assignment:

A Case of a Stab-Wound of the Heart, With a Table of, and Remarks on, the Cases Previously Reported. By Dr. George Tully Vaughan, Washington, D. C.

Examination of the Blood. By invited guest, Dr. John B. Deaver, Philadelphia, Pa.

Tropical Diseases. By Dr. Thomas Rollins Marshall, Bedford City, Va.

On Some Eye Troubles. By Dr. Joseph A. White, Richmond, Va.

The Southern Surgical and Gynecological Association

Will hold its fourteenth annual session in the city of Richmond, Va., November 12, 13, and 14, 1901. All railroads will give one and one-third rate fare, on the certificate plan. Membership blanks may be had upon application. Titles of papers should be sent at once to Dr. W. D. Haggard, Jr., M. D., Secretary, Nashville, Tenn. Dr. Geo. Ben Johnston, Richmond, Va., is chairman of the Committee on Arrangements. The officers of the Association are: *President*, Dr. Manning Simons, Charleston, S. C.; *Vice-Presidents*, Drs. Geo. H. Noble, Atlanta, Ga., and L. C. Boshier, Richmond, Va.; *Secretary*, Dr. W. D. Haggard, Jr., Nashville, Tenn.; *Treasurer*, Dr. Floyd W. McRae, Atlanta, Ga.; *Council*, Dr. Geo. J. Engelman, Boston, Mass.; Ernest S. Lewis, New Orleans, La.; Geo. Ben Johnston, Richmond, Va.; L. McLane Tiffany, Baltimore, Md., and Lewis S. McMurry, Louisville, Ky. Murphy's Hotel, corner of Broad and Eighth streets, will be the headquarters for this session. Members of the regular medical profession will be invited to attend the general sessions.

The preliminary programme is unusually full, as follows:

The President's address, Dr. Manning Simons, Charleston, S. C.

Laceration of the Cervix, and its Consequences, Dr. E. S. Lewis, New Orleans, La.

Repair of a Complete Laceration of the Perineum in a Girl of Nine Years, Produced by the Finger of the Obstetrician at the Patient's Birth, Dr. H. A. Royster, Raleigh, N. C.

Vaginal Puncture or Incision: An Unsurgeical Procedure, Dr. Joseph Price, Philadelphia, Pa.

Pelvic Hematocele and Hematoma, W. P. Manton, Detroit, Mich.

Retrodisplacement of the Pregnant Uterus: Its Surgical Treatment, Dr. Wm. A. Quinn, Henderson, Ky.

Treatment of Pelvic and Abdominal Tumors Complicating Pregnancy: With Report of Cases, Dr. Rufus B. Hall, Cincinnati, Ohio.

Puerperal Septicemia, Dr. Wm. R. Pryor, New York, N. Y.

A Unique Case of Extra-Uterine Pregnancy,

with Presentation of Specimen, Dr. H. Tu-holske, St. Louis, Mo.

Surgical Treatment of the Dysmenorrhea in Unmarried Women and Girls, Dr. J. T. Wilson, Sherman, Texas.

The Surgical Treatment of Dysmenorrhea, Dr. Henry D. Fry, Washington, D. C.

Tuberculosis of the Female Generative Organs, Dr. J. B. Murphy, Chicago, Ill.

Cancer of the Female Urethra, with Report of Cases, Dr. C. Jeff. Miller, New Orleans, La.

The Angiotribe: Its Use and Abuse, Dr. Jas. N. Ellis, Atlanta, Ga.

Some Points in the Treatment of Appendicitis, Dr. A. M. Cartledge, Louisville, Ky.

Some of the Avoidable Causes for Disaster in Appendicitis Work, Dr. Robert T. Morris, New York, N. Y.

Gunshot Wounds of the Abdomen, Dr. John C. Wysor, Clifton Forge, Va.

Gunshot Wounds of the Abdomen, Dr. Wallace Neff, Washington, D. C.

Penetrating Wounds of the Abdomen, with Histories of Six Successful Laparotomies and Statistical Tables of 152 Abdominal Sections Done at Charity Hospital, in New Orleans, La., Dr. E. D. Fenner, New Orleans, La.

Closure of the Abdominal Incision, Dr. I. S. Stone, Washington, D. C.

(a) The Results Obtained in Sixty Operations for Prostatic Hypertrophy; Demonstrations of a New Combined Cautey Incisor; (b) Catheterization of the Ureters in the Male, with Report of Cases, Dr. Hugh H. Young, Baltimore, Md.

Perineal Prostatectomy, Dr. Alex. Hugh Ferguson, Chicago, Ill.

Report of a Case of Gangrene of the Gall-Bladder, Dr. Geo. Ben Johnson, Richmond, Va.

Report of Cases of Gall-Stones, Dr. J. A. Goggans, Alexander City, Ala.

Gastrostomy in the Treatment of Impermeable Stricture of the Oesophagus, Dr. Hugh M. Taylor, Richmond, Va.

Oesophagotomy, with Report of Nine Successful Operations on an Infant Forty-six Days Old, with Illustrations, Dr. John W. Long, Salisbury, N. C.

Two Cases of Nephro-Ureterectomy, with Remarks, Dr. J. Wesley Bovee, Washington, D. C.

The Treatment of Procidencia Uteri, Dr. Chas. P. Noble, Philadelphia, Pa.

Clinical Report of Two Cases of Osteo-Sarcoma of the Maxilla, Treated by Excision, with Statement of Condition of Patient After One

Year, Dr. Hermann B. Gessner, New Orleans, La.

(a) Spiral Section of Fibroid Tumors in Lower Portion of Uterus to Facilitate Their Removal; (b) Puncture Scissors and Counter-Pressure Instrument for Vaginal Puncture in Vaginal Drainage; (c) The Use of Adhesive Plaster for Prevention of Laceration of the Perineum in Forcep Delivery, Dr. Geo. H. Noble, Atlanta, Ga.

Operations on the Liver, Dr. W. E. B. Davis, Birmingham, Ala.

Hepatic Drainage, Dr. John B. Deaver, Philadelphia, Pa.

Report of Two Interesting Cases, Dr. Jos. Taber Johnson, Washington, D. C.

Tubercular Peritonitis, Dr. Samuel Lloyd, New York, N. Y.

Hodgen's Splint for the Treatment of Fracture of the Thigh, Dr. Geo. S. Brown, Birmingham, Ala.

A Peculiar Succession of Septic Wounds, Occurring in and Around Alexander City, Ala., with Report of Cases, Dr. A. J. Coley, Alexander City, Ala.

Potts' Disease, and Some of its Complications, Dr. A. R. Shands, Washington, D. C.

Surgery of the Pancreas, Dr. W. D. Haggard, Jr., Nashville, Tenn.

In addition to the above, papers the titles of which are not given are promised by Drs. Floyd W. McRae, Atlanta, Ga.; Wm. L. Robinson, Danville, Va.; Felix A. Larne, New Orleans, La., and M. C. McGannon, Nashville, Tenn.

Obituary Record.

Dr. Richard Berrien Burroughs.

A prominent physician of Jacksonville, Fla., died in Norfolk, Va., on September 11, 1901, while on a visit to his son. Dr. Burroughs had achieved a distinction in his profession that came to few men, and he died honored and beloved by all who knew him. He was born in Savannah, Ga., in 1833, and, after having received his academic education at the University of Georgia, he graduated in medicine at the Savannah Medical College, and subsequently took a degree from the Jefferson Medical College of Philadelphia. He began his professional career

in Savannah, where he practiced until the outbreak of the civil war. When the clash came, his services were promptly offered to his country, and he entered the Confederate army as assistant surgeon of the Sixty-third Georgia regiment, and later was transferred to the Fourth Georgia cavalry as major and surgeon. He was often mentioned for gallant conduct under fire, and it is told that it was not uncommon for him to dismount while in action and place a wounded soldier on his horse and carry him to the field hospital for treatment.

After the war Dr. Burroughs located in Tallahassee, Fla., and later located in Jacksonville. His brilliant attainments in his profession made him known throughout the length and breadth of his adopted State. His services in the yellow fever epidemic in Jacksonville in 1888, and in Savannah in 1854, were valuable, and he was regarded by the profession and the laity as an expert in this disease. His contributions to medical literature on this subject have been numerous, and indicated deep thought, hard study, and large experience; those which attracted the most attention were his articles on the "Identity of Dengua Fever and Yellow Fever" and the "Relation of Bilious and Yellow Fevers."

Dr. Burroughs had been President of the Jacksonville Medical Society, Vice-President and President of the Florida Medical Association. He was chief surgeon of the Florida Central and Peninsular Railroad Company, and chief surgeon of the United Confederate Veterans of Florida. He was largely instrumental in establishing and placing on a firm basis the Jacksonville City Hospital. He was also known in public life, having been for several years a trustee of the Soldiers' Home, and a member of the City Council. Coming from a long line of distinguished ancestry, Dr. Burroughs was a gentleman in all that the word implies. He was of genial nature, social disposition and kind heart, which endeared him to all who were brought in contact with him. He was pre-eminently a man of action, endowed with a highly developed executive faculty, and possessed of a remarkable power of discriminative judgment. He pursued the practice of his profession until the last with great activity and industry, and was held in high esteem by his professional brethren. Widely loved, he is widely mourned.

J. F. L.

THE Virginia Medical Semi-Monthly.

(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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Original Communications.

Higher Medical Education—Medical Schools of Virginia—Dr. Hunter McGuire—Medical Examining Board of Virginia—State Board of Health—Specific License Tax on Practitioners—Relations of Doctors to Corporations, Etc.—Delegates to National Medical Legislative Meetings, Etc.*

By J. R. GILDERSLEEVE, M. D., Tazewell, Va.

It seems fit and proper that I express in words my thanks for your kindness in having selected me to fill this, the highest position in your gift, and I hope to merit the confidence reposed in me by using my best efforts to prove by my works my love and devotion for our Medical Society of Virginia, an organization second to none in the reputation of its members in their advanced scientific attainments and the well recognized "noblesse oblige" of Virginia gentlemen.

I congratulate the Society on meeting for the third time in this historic City of Hills. Again are we welcomed within her bounds, and are receiving her justly renowned hospitality. We are glad to be here—pleased with this corner of the earth—glad that we came, as we shall be sorry to depart.

The birth of our Society is justly accredited to the Lynchburg Medical Association. At a meeting June 7, 1870, Drs. Benjamin Blackford, Landon B. Edwards, Henry Latham, R. S. Payne, and W. O. Owen were appointed a committee to address circular letters to the Medical Societies of Richmond and Abingdon and to all regularly qualified physicians in this State.

On the 2d day of November, 1870, in response to these letters, ninety-two physicians assembled in the city of Richmond and organized the Medical Society of Virginia, and from this city we elected our first president, Dr. R. S.

Payne—the accomplished gentleman, wise counselor and skilful physician; courteous, dignified and beloved.

In 1879 we again made a draft on Lynchburg for another president, and selected Dr. Henry Latham, a grand man physically and intellectually, and twelve years later our society and this city were alike honored in the election of Dr. H. Gray Latham, the distinguished son of a noble old sire.

Those of us who have passed the meridian of life, and reached a point where the shadows begin to lengthen, may, for a while, turn our faces from the setting sun, and look back over the long course of strenuous, professional effort—effort, whose highest and best reward is the consciousness that we have ever striven to be honest and faithful in the discharge of duty to our fellow-man.

The advent of a new century, and the dawn of a new era, naturally cause us to look backward and forward—*backward* to the remotest past, when chaos reigned supreme, the earth without form and void, and darkness rested thereon, through succeeding eras to the nineteenth century—so immeasurably beyond any historic record—in great events, magic discoveries and wonderful inventions.

Beyond question free scientific investigations have accomplished more in the nineteenth century than in all the "tide of time."

It has been asserted that the travelling to and fro of the human race in the past century exceeds in distances traversed the journeyings of all preceding ages, from the beginning of the world's history, and that the inventions, discoveries, and practical application of scientific theories credited to the nineteenth century have widened our conception of the universe.

The old century is dead!

"Awake; for the Sun, the Shepherd of the sky,
Has penned the stars within their folds on high.
And shaking darkness from his mighty limbs,
Scatters the daylight from his burning eye."

*Being the President's Address, delivered at 9 P. M., November 5, 1901, before the 32d Annual Session of the Medical Society of Virginia, held at Lynchburg, Va.

The new century has dawned! What are its possibilities? What will the harvest be? are questions beyond human conception. Apparently the past has embraced all that human thought or ingenuity could devise or suggest, and there remains for this century only the honor of finishing and beautifying, artistically and aesthetically, the grand works of the past.

Can it be supposed that the present century will ever approximate the past in its contribution to the progress of the race? To the younger members of our profession—heirs to the inheritance of our thought and labor—we commit the task of extending the lines of this noble study, and achieving for it a still more splendid development.

Here enter a plea for the *higher education of our medical students*. Unimportant as it may appear to many, a well trained mind in ancient and modern languages, natural and moral philosophy, mathematics, history and literature is a reserve force in the armamentarium of all well-equipped physicians—such a training as is now demanded, which ennobles the calling and removes the opprobrium brought on the profession by uneducated members, who are ignorant of everything—except what lies in a narrow specialty. Make an academic degree from some reputable college or university a pre-requisite for a *Medical Doctor*; then will our profession occupy the position to which it is justly entitled—the most learned of all callings, as it is the noblest.

The warm, earnest contest—waged for many years in efforts for higher education and longer periods devoted to the study of medicine—has at length been settled, and a four-year course adopted by a great majority of our most prominent and noted colleges and universities. Only these institutions can be represented in the American Medical Association which have adopted the long term.

The success attending the measure is self-evident, and the well-equipped graduate at once steps forward, ready and competent to battle with the issues of life, well informed and self-reliant, with experience, knowledge and clinical advantages of a high order. Already we see the beneficent result, and the near future will prove the wisdom of the measure.

Within this fair domain of ours, with its unchallenged prestige and renown, our interest and pride must centre in our seats of learning. These should be our first consideration—to fos-

ter, cherish, support and aid in upbuilding and increasing their usefulness.

First, *the University of Virginia*, ranking among the most advanced institutions in this country, her degrees everywhere recognized, and justly honored, sends her children to the world with such credentials as only learning broad and deep can confer.

Then, my alma mater (*the Medical College of Virginia*), with her long roll of distinguished teachers and alumni. The high and honorable positions accorded her sons justly entitles her to her established reputation.

The last and youngest of the trio in alignment with the other centres of learning, *the University College of Medicine*, embodies in its course of study all the best traditions of its illustrious founder—Dr. Hunter McGuire, a man among men, a physician among physicians.

To abler pen than mine must be left the inscribing of his purity, greatness, and breadth of character. "Ben Adhem's name led all the best." Whilst monument of bronze and marble may be erected to perpetuate his name, yet the highest tribute to his memory will be the gratitude of thousands, who will keep it green, and the many alumni who will reverence the founder and are proud of their association with him.

"But perhaps it is better
That his busy life is done.
He has seen old friends and patients
Disappearing one by one;
He has found that death is Master
Both of science and of Art;
He has done his duty nobly
And has acted out his part;
And the wise, old skillful Doctor,
And the grand old Christian Doctor,
Is entitled to a furlough
For his brain and for his heart"

In 1884 an act was passed by the Legislature creating the *Medical Examining Board of Virginia*, the comely child of this society. Through many difficulties and stout opposition, still continuing, it has honestly and faithfully pursued the tenor of its way, elevating the standard of medicine, a bulwark against professional ignorance, quackery and isms, and being a death-dealing sword for irregulars and the unqualified.

It is deserving of all encouragement and support from its mother, and we should strive to assist it in maintaining its impartial and high standard. Yet, despite all efforts to protect the profession and public, the apathy of those in legal authority—apathy approaching criminal condonance—render all efforts heretofore made

inoperative to totally suppress irregulars and others practicing without license from the board.

The *State Board of Health*, representing the Department of Preventive or State Medicine, is next in importance as deserving of wise consideration in the higher education of profession and laity—the protection of citizens against the insidious encroachment of infectious and contagious diseases, the prevention of their propagation and extension by isolation, quarantine and treatment; the education of those in authority in hygienic laws, and the masses in observance of better modes of living, cleanliness, wholesome food, pure water, and directing attention to disposal of waste, overcrowding in dwelling, and moral laws. With inadequate means, our State Board has courageously struggled on, establishing municipal and county boards, and making many personal sacrifices for the preservation of public health, and saving to the State thousands of dollars and many lives; yet legislation has failed to recognize the value of the department and its efforts to maintain its usefulness even by meagre appropriations. The State Board of Health is deserving of highest praise. May success crown its efforts to have sanitary measures adopted all through the length and breadth of our State.

The *petition to remove the specific State tax or license tax on physicians* is eminently just and proper, as no other profession or calling in life, not excepting the clergy, gives more in charities. Why we are taxed is incomprehensible. As well tax ministers. The utility of the general practitioner to the State is enough in itself to warrant giving him special consideration instead of adding to his burdens and driving him into other States more just and liberal. If the physicians used the influence they possess, the law would be repealed. If there is any difficulty, it will have to be credited to that invincible quality against which even the "gods strive in vain."

A more determined effort should be made to stop the *illegal practice of medicine* and suppress the Christian Scientist and osteopath "*et id genus omne*." This matter should have prompt attention and concert of action, and the strong arm of the law should be evoked to free our State from this nuisance and blot.

The use of patent medicine, proprietary medicines, without formula, and other nostrums by members of our profession is only necessary to be mentioned to be condemned, with the sug-

gestion that those who persist in their use will only reap from the hopes which around them they sow a harvest of barren regrets.

The unfortunate framing or interpretation of our laws, in connection with *expert testimony in courts*, is an outrageous imposition and a menace to personal liberty, involving a great loss of time, neglect of practice, outlay of means, and personal discomfort, without adequate compensation. It is too unjust and partial to be borne submissively and servilely without an earnest protest to our law-makers, and we should use all legitimate means to secure recognition of our services as medical experts.

Those of us who expect to see the dawn of the millennium may witness the miracle—i. e., the observance of a code of ethics. One of the tendencies of the present age is indirect advertisement, newspaper notices, and professional discourtesies, affording frequently adverse criticisms from laity on our learning and actions to each other. It is to be sorely regretted.

The educated physician in good standing in any National, State, or Local Society, with the true instincts of a gentleman and refined association, will, without any printed guide-post, observe the requirements of the most exacting code, even if he has never been *conned*.

Apropos of ethics, *our relations with corporations, companies, railroads, etc.*, afford a field for careful consideration. We should give honest, skilful, conscientious work. There should be no reduction of regular fees, no excessive zeal or partisanship, and we should so act that we may add dignity to our profession, and command the respect of all.

I here submit for your consideration a letter received from the medical director of the New York Life Insurance Company. This is one of the few standard companies abroad arbitrarily enforcing reduced fees for medical examination. It needs no explanation:

NEW YORK LIFE INSURANCE COMPANY,

346 & 348 Broadway, New York.

JOHN A. McCALL, *President*.

Medical Department,

S. OAKLEY VANDERPOEL, M. D.,

Medical Director.

New York, January 10, 1901.

DR. J. R. GILDERSLEEVE, Tazewell, Va.:

Dear Doctor,—Your recent communication to our esteemed Comptroller has been referred to this department for attention.

We regret very much that the graded fee

schedule is not satisfactory to you, especially as we find on reference to our file that at the time it was promulgated, in September, 1895, you acknowledged receipt of the copy, and indicated your acceptance of its conditions without any comment whatsoever.

You can readily appreciate that had the company any doubt at all as to the feasibility of continuing the schedule, it would naturally have been entirely dissipated by the practical unanimity with which our medical examiners indicated their acceptance of its conditions, among them yourself. In other words, we feel that had our medical examiners any objections to its provisions, it would have been better and more consistent to have stated such objections at the time of its being sent out.

It is not generally known outside of life insurance circles that companies cannot in reality afford to pay as much for the small examinations as for the larger ones. This is explained by the fact that small policies exceed by far the number of large ones issued by this company; small policies do not renew as well as the larger ones; also the proportion of cost per thousand for putting the policies out is greater among the small ones, while it is also true that the lapses among them exceed in proportion those in the larger ones. Another important factor in considering this matter is the certainty of payment for the work performed as compared with the uncertainty of remuneration, which physicians experience so frequently in their private practice.

As above indicated, the schedule is very generally acceptable, and the company's experience has been so satisfactory with it that there is no present probability of any change being made.

Very naturally your communication leaves us no option but to regretfully consider it as a resignation of your appointment, of which fact our agents will be advised.

Very truly yours,

S. OAKLEY VANDERPOEL,
Medical Director.

Among other reasons assigned for reduction of examiner's fees, I notice briefly the plea of poverty. I understand, though cannot vouch for the statement, that in curtailment of expenses, the "poor president's" salary had to be reduced to \$50,000.00 per annum, and the "rich" medical examiners unanimously agreed to a half reduction for services.

In this connection, I call the attention of fellows to a resolution passed at our Rockbridge

meeting in 1896 (though unaccountably left out of the published transactions of the society), which is as follows: That the members of this society will not examine an applicant for life insurance for a fee less than \$5.00—fraternal and beneficial organizations excepted.

It is incomprehensible why so few of our profession are members of the boards of directors or visitors for asylums, universities and scientific institutions of learning. Can we claim for the medical profession a just and equitable recognition, and have we enough influence to demand and obtain places of honor on the several boards? I would suggest co-operative measures to secure at least proportionate representation.

National and State legislation is a very grave matter, affecting vital interests of the medical profession. If detrimental laws are passed, and if injurious to us, we are alone to blame, as we manifest so little interest in matters of so much importance. It behooves us, then, through our respective societies, to keep informed on all prospective legislative enactments, and we should follow example of other State societies in appointing delegates to attend regular meetings of the Committees on National Legislation of the American Medical Association and affiliating State societies.

I sincerely hope it is your pleasure to have our society represented at the next meeting of Committee on National Legislation.

The bond existing between our State societies and the American Medical Association should be strengthened. I can suggest no better method than membership in that grand national representative medical organization. The State of Virginia has only one society represented in our National Association. Illinois has 94; the small State, South Carolina, 9, and our daughter, West Virginia, 6. Comment is unnecessary.

The need of a *colony for epileptics* is as great as ever, and although our endeavor to impress our Legislatures with the importance of such an establishment met with defeat, yet we should not weary, but zealously persist until our efforts are crowned with success.

Entrusted to our safe keeping are the many unfortunate insane. We need larger appropriations to give to the inmates of our asylums more of the comforts of life; at best a poor return for loss of reason, home, family and freedom. Let us do away with the absurd sentimentality of pulpit and press in behalf of the

voluntary criminals in our penitentiaries and jails, and bestow a thought in charity and human kindness and consideration on our unfortunate, involuntary, confined insane.

Passing strange it is that the medical profession is not recognized by our liberal general government. Are we entitled to a place in the "seats of the mighty?" Let us make it "the battle of the strong," and demand a cabinet office in this great government, nor rest until it is an accomplished fact.

With rapidly increasing membership, with an enrollment of over 1,000, over one-third of the whole number of physicians in the State, let us put forth our best efforts and secure every reputable physician as a member; let us encourage the foundation of societies in cities and towns, and let us strive to make all local societies tributary to our State society.

Then we shall have an aggregation of physicians in close touch with each other, who will be benefited by association and interchange of theories and experiences, by generous rivalry and by formation of friendship and social and intellectual intercourse. Thus united, we shall wield an influence potent in accomplishing the greatest amount of good and insuring the health, happiness and prosperity of our race.

The reciprocity between States relative to the practice of medicine should, as far as practicable, be effected for the benefit of all who have complied with the rules governing each State Examining Board.

To increase the attendance of fellows and enhance interest in our annual meetings, I would suggest the plan adopted by the American Medical Association, though modified, for a greater conservation of time and better results, by devoting the morning hours of each day to general business, one subject and its discussion; first night to existing programme, succeeding nights to social functions, afternoon to section work, the division into sections to be arranged by our Executive Committee, as our increased membership warrants, and I am sure that more interest will be taken in special work, and a larger attendance secured, better papers, abler discussions, and no empty seats.

A distinctive badge or button would not be amiss, enabling us to recognize fellows, dispensing with formal introductions, and at once putting at ease the "stranger within our gates."

Fellows of the Medical Society of Virginia, I have finished. I have not sought to secure

your attention by the expression of novel and ingenious views, or by the clever elaboration of a theory. I have been satisfied to bring to your notice in a general way what I believed to be the practical features of our great profession. Time will not permit, nor is this the field for presentation of brilliant and original thought. I have endeavored to make some suggestions which I hoped might be worthy of your consideration.

If they be approved, I shall regard it as an acknowledgment of service to this association, the memory of which I shall jealously cherish as the most gratifying of my professional life.

DELUSIONS IN MEDICINE.*

By S. W. DICKINSON, M. D., Marion, Va.

Mr. President, Fellows of the Medical Society of Virginia, Ladies and Gentlemen:

It is a matter of no small embarrassment, for a man whose days have been spent in rounding pills rather than sentences, to attempt to follow those worthy members of this society who, each year since its organization, have, before an audience of the public and the profession, discussed some medical subject of popular interest.

In selecting Delusions of Medicine as the subject for this occasion, I do not purpose to admit that medicine alone of the professions has had its delusions. I know that in this presence I need not stop to speak of the delusions of the law, or to show how—

"The dust of foolish fables
Half blinds the prophet's eyes."

In fact, all walks of life, the ignorant and the learned, have had their delusions, and much of our literature cannot be understood without some knowledge of the delusions of past ages; so, when we study this question closely, we have to say with Charles Lamb, "Every man has his blind side, his superstitions"; when we learn of their antiquity, we agree with Lowell that delusions "seem the only things that have any chance of an earthly immortality."

Around all knowledge there is a border-land of ignorance, and to grow in knowledge seems only to enlarge the horizon of the unknown. Age by age the modicum of truth has grown, and we

*Being the Annual Address to the Public and Profession, delivered at 8:30 P. M. November 5, 1901, before the Medical Society of Virginia during its thirty-second annual session, held in Lynchburg November, 5-7, 1901.

to-day, standing on higher ground in part by reason of truth inherited from other ages, pride ourselves on our superiority, wilfully forgetful of the great unknown about us. In this spirit we look on delusions as belonging to another and more ignorant age, forgetting that what we can treat as a jest was seriously believed by our not very distant ancestors—that the wisdom of one age may become the delusions of another. Of these delusions some have an antiquity unknown to the votary, and origin perhaps unknown to all; still it will be well to trace them as throwing sidelights on medical history, and showing through what obstacles true medical science has struggled to the front, and how, in all ages, “the illegitimates of medical science become the pretenders of quackery, waging war with the legitimate prince for the inheritance of power.”

Medicine preserves in its terms and names much that carries us back beyond its written history to the days of mythology, and we still see foot-prints in our phraseology enabling us to trace the growth of our calling through fetishism, miracle cure, and astrology, to a more rational system. We, for instance, find the names of the Olympic gods preserved and variously applied through medicine. Saturniæ poisoning reminds us of Saturn, and ammonia recalls Jupiter Ammon. We almost daily handle vulcanized rubber instruments, while Mercury, the messenger of the gods, now serves us. The word Hygiene is a monument more enduring than brass to Hygieia, the daughter of Esculapius, the god of medicine. The tendo-achilles recalls the hero of Homer's Iliad, and also the delusion of ancient surgeons, that wounds here were fatal. Lunaey comes to commemorate the fact that our ancestors believed the lunatic's brain had been acted on, and that his mind was controlled by the moon. The word artery antedates Harvey, and tells of a time when these vessels were supposed to carry air, and not blood, while the ever-present calomel, derived from Greek words meaning a good or beautiful black, tells of a time when calomel was æthiops mineral, or hydrargyrus cum sulphure, and not the white chloride of to-day. So names live after the reason for them is forgotten.

In such terms as obstinate, persistent, malignant, or when we say a disease attacks, invades or manifests itself, we use terms which once carried the idea that disease was an entity, endowed with certain passions and vindictive pur-

poses, and that the doctor's province was to take the patient's side in the deadly strife.

We trace in the names of these gods of the ancients, and in the historic fact that on tablets in pagan temples were first written the symptoms of disease with the cures used, the connection of the priesthood with medicine; and to them we trace supernatural ideas of disease and its cure. That disease was due to the anger of the gods was taught by Celsus, and long before and after his day. Credence of these ideas led to all kinds of magic, divinations, exorcisms, incantations, sacrifices, and finally to mercenary practices on the part of these priestly physicians. As showing the exploits and vast influence of one of these Aesculapian priests, I refer to Froud's historical sketch, “A Cagliostro of the Second Century,” based on the writings of Lucian, an eye-witness. So firmly were these ideas incorporated into religious and popular thought that we find them continuing under the new religion of Christ, and taken advantage of by the priesthood to increase their hold on a pagan populace. In fact, to such an extent was this carried, that the Council of Laodocæa, in A. D. 365, forbade the study and practice of enchantment to priest, and about this time priests were forbidden to make and sell amulets, the wearing of which, however, was not forbidden until A. D. 721. The temptation to gain money by terrifying the sick and dying was so great that the Lateran Council, 1123, had to forbid all medical attendance by the clergy; and that of 1139 threatened the disobedient with excommunication; but medicine was never entirely separated from theology until physicians were allowed to marry. (Draper.)

In an early and ignorant age, when the laws of nature were but little understood, the medicinal action of any agent was ascribed to all manner of imaginary, and very naturally, to supernatural causes. These supernatural ideas by degrees seem to have been put together to form what we call a theory or system of practice, of which, perhaps, astrology is as old as any of which we have accurate knowledge.

It appears that astrology had its origin among the Egyptians and Arabs, and from them passed to all the nations of the East. The Bible refers to the astrologers and star-gazers of Babylon, and in the Mosaic account of creation, where we read that the heavenly bodies were “for signs and for seasons,” it is not impossible we have a reference to astrology, as astrology is older than

Moses. Nor was astrology without a delusive basis. We may readily believe that the ancients saw some connection between the sun and moon, and the "age of the moon" and the tides; between the relation of the daily death rate and the rotation of the earth on its axis; and, above all, noticed the influence of the sun on life, both animal and vegetable, an influence which made both the Egyptians and the Aztec Indians call themselves "children of the sun"—a name justified by modern science.

Astrology, which still holds sway among the Mohammedans, reached Rome and the West before the Christian era; and, "as the ideas of feticism died out among the more intelligent classes in Europe, the gods and demons who had inhabited surrounding objects were exiled to more distant spheres, to become controllers of planetary motions." Lilly, in his book on astrology, published in 1647, says: "There is nothing appertaining to the life of man in this world which in one way or another hath not relation to the twelve houses of heaven; and, as the twelve signs are appropriate to the particular members of man's body, so also do the twelve houses represent not only the several parts of man, but his actions, quality of life and living; and the curiosity and judgment of our forefathers in astrology was such as they allotted to every house a particular signification, and so distinguished human accident through the whole twelve houses, as he that understands the questions appertaining to each of them shall not want sufficient ground whereon to judge, or give a rational answer upon any contingent accident or success thereof." From this general basis of belief or opinion, with much art, they cast their horoscopes, diagnosed and treated their cases, and persuaded men to believe that the stars in their courses watched over them to typify by their movements and aspects the joys and sorrows that awaited them.

In our almanacs we see preserved the twelve signs of the zodiac, which refer to the twelve houses already alluded to. Especially prominent "is the disemboweled man standing on the two fishes, which figure is stated by Champollion to be derived by direct descent from the Egyptian ritual for the dead, and is often found in their papyri." The claim is made by high authority that the sign ♃ with which we begin our prescriptions is the slightly altered astrological sign for Jupiter, and was placed at the top of the formula to propitiate the king of the gods that the compound might act favorably.

We see astrological believers in our day who, knowing nothing of these signs beyond a vague tradition, yet consult them in regard to all events of importance. They plant corn only in the "light of the moon," and potatoes in the "dark of the moon," and the "sign must be right" before they will kill their pork, build a fence or shingle a house. Surgical operations must not be done during "dog days," and I have been repeatedly asked when was the right time of the moon to give worm medicine; and you know the moon is believed to be especially in charge of certain physiological functions of the female economy. We have already seen that the word lunacy had its origin at a time when the following lines from Hudibras found believers:

"The queen of night, whose vast command
Rules all the sea and half the land,
And over moist and crazy brains
In high springtide at midnight reigns."

Witchcraft is another form of magic in which medical men should be interested. With the advent of Christianity the magic arts took on new theories to meet the changed views concerning the powers to be conciliated or controlled. With the belief in one God came also the idea of an evil spirit, the enemy of God and man, and to him were ascribed all the supernatural powers not supposed to proceed directly from God, or to be consistent with His attributes. This evil spirit exercised his powers on earth through his agents, the witches, who made use of substantially the same powers, rites and incantations that had been in use among the ancient Romans, or had been used by the wise women of the Teutonic pagans. Those who were supposed to practice these arts were believed to have sold themselves to the devil and to be in league with him, and so sorcery became associated with heresy, and in the punishment of this heresy the Church, both Catholic and Protestant, became responsible for some of the most deplorable persecutions and darkest pages in human history.

By no means the least item of interest to the medical profession in the history of witchcraft is the admitted fact that John Weier, a German physician, in 1563, was the first to take an open stand against the persecutions of these people, who, he claimed, were "patients and victims"—i. e., insane, or victims of the spite and malice of others.

It was during this period, when all apparently supernatural events were so closely eyed, that fairies, sylphs, salamanders, etc., had their

origin. Then a spring agitated by escaping carbonic acid gas had its angel, the lunatic was under the influence of devils, an epileptic in a spasm was struggling with demons. Old women were supposed to ride broom sticks through the air, and give cattle the murrain, to blast crops and bring pain and affliction on their enemies. Nor were "old hags" alone accused of these things and burned. Elenor, daughter of the Duke of Cobham, and wife of Humphrey, brother of Henry V, of England, was burned as a witch on the charge of having made a wax figure and held it before the fire to slowly melt, while she repeated some cabalistic words, thus causing the King's death.

Being surrounded by so many evil genii, people naturally sought alliances with powerful spirits and exorcism by holy men; and this desire for protection resulted in the wearing of talismans, amulets and charms as evidence of being under the protection of some beneficent influence able to keep off evil spirits.

The talisman, which had an astronomical origin, consisted of precious stones or other natural objects carried about the person, and having engraved on them some sign of the zodiac. To the precious stones was attributed certain special virtues, as: "A topaze healeth the lunaticke person of his lunacie," while the bloodstone "stancheth blood, driveth away poisons, preserveth health, suffering not him that beareth it to be abused." Somehow the various colors came to have talismanic virtues, and flannel dyed nine times in blue was good for scrofula.

Because Avicenna had said that red corpuscles moved the blood, red colors were used in diseases of that fluid, and even so late as 1765 the Emperor Francis I was wrapped in scarlet cloth to cure small-pox, and so died. Possibly the use of red flannel for rheumatism, so devoutly believed in our day, had its origin here. The therapeutic value of colors has been an ever-recurring study. But recently French scientists are telling us the effects of certain colors on the nervous system.

Amulets were also objects suspended from the person, often made of stone or metal, and having carved on them some word or figure. "There is little doubt that necklaces and bracelets (Gen. 35: 2-3-4) were originally not articles of ornamentation, but were amulets; those on Egyptian mummies are covered with characters referring to the future of the body."

From the heathen the use of amulets extended to the Christian Church, and at an early day coins bearing the head of the mother of Constantine, or those stamped with a cross, were considered efficacious against epilepsy. Pope Adrian is said to have worn an amulet consisting of dried toad, arsenic, coral, etc., suspended around his neck, and never removed. Arsenic amulets were worn during the London plague on the principle that one poison could keep out another. Ashmead's cure for ague was to take early in the morning a good dose of elixir and hang three spiders around the neck, "which drove it away, God be praised."

Galen is said to have believed quite as much in amulets as in drugs, and to have been the author of the anodyne necklace so long famous in Europe.

Paracelsus recommended coral necklaces for infants, to which were added small silver bells, to keep off sorcerers and witches, on the same principle that larger bells scared comets and evil spirits away. Doubtless many before me remember having worn in childhood a coral necklace, whose mothers only knew by tradition that there was said to be some good in the toy. We see people in our day tie bags of assafetida, camphor, etc., around their children's necks to keep off contagious diseases, and when older they carry buckeyes in their pockets to keep off rheumatism. Nor is this custom confined to the ignorant. Some years ago a talented Virginia Congressman, while talking with three distinguished fellow Congressmen, unconsciously took from his pocket a rabbit's foot, and was toying with it, when the others began to laugh at him. He challenged them to empty their pockets, when it was shown that three of the four Congressmen carried a rabbit's foot and a buckeye. Oliver Wendell Holmes has told of a learned Bostonian "of superior ability and strong common sense," who carried two well-worn and shiny horse-chestnuts in his pocket, and Emerson had a friend who carried one, and of him he said: "He has never had the rheumatism since he began to carry it, and, indeed, it seems to have had a retrospective operation, for he never had it before."

The mystery which in the popular mind attaches to the subject of electricity has developed in our day a number of new amulets, and we see the body decked with electric belts and corsets, the head brushed with electric brushes, electric soles to go in our boots by day, and the electro-

poise to hang to our heels by night, all serving to tickle the imagination, if not the skin. Charms, from the Latin *Carmen*, refers to written words or spells, often meaningless, as the famous *abracadabra*.

Cato, the censor, gives us some meaningless Latin words, which he says will cure a dislocation if, while these words are slowly repeated, reeds four or five feet long are cut in half and tied to the injured limb. You can find in almost any community people who claim to stop the flow of blood, or cure thrush by repeating certain words from the Bible and blowing their breath in the patient's mouth.

Along with charms comes the faith in odd numbers. "There is luck in odd numbers, says Rory O'Moore." Pythagoras declared that numbers were the essence of things, and chemistry, in adopting the atomic theory and symbolic notation, seems to lend itself to this conclusion. In practical life it is worth something to a doctor to be able to say he is a seventh son; and most of these people who "work charms" claim to be seventh sons or daughters.

Of the delusions so far noticed none has a greater claim to respectability than alchemy. Through devious and uncertain paths out of alchemy arose the great science of chemistry, an announcement, which, I fear, will end the interest of most doctors in this subject, for, somehow, they look on chemistry as mostly "gibberish," a word which Dr. Johnson said had its origin in the name of the man who wrote the first book on this subject. There is no need that I here more than allude to the supposed pantheistic origin of alchemy, or to the vain efforts to turn the baser metals into gold. As physicians, we are interested in this subject because all treatment of disease by drugs was originally based on alchemical ideas, and to the alchemist we owe the introduction and discovery of many important drugs still used by us. These early scientists believed that the world had a soul, and hence every object had a soul of its own, and their object was by some process to get this soul disengaged. They believed they could evoke from wine a spirit stronger than the wine, and from chalk a ghost able to tear in pieces the strongest vessel. Gold they regarded as the noblest, or king of metals, and thought if its spirit could be obtained they could indefinitely prolong life; so, when it was discovered that nitro-hydrochloric acid would dissolve gold, they announced the discovery of the elixir of life.

So sincere was this belief that we are told that Roger Bacon (1214 to 1284) seriously recommended it to Pope Nicholas IV, and told him of an old man in Sicily who one day plowed up a golden phial containing a few drops of this yellow liquid, which he drank, and at once he was transformed into a robust, hale and highly accomplished youth—doubtless the first graduate of the Keeley cure.

Some of these men claimed they could make a man of metal and make him walk. Others claimed to have compounds which would add 100 years to man's life; claims reminding us of the life prolonging juice of Brown-Sequard, and of the claims often made for samples left on our office tables by agents of the manufacturing chemist.

Of delusions, none is perhaps more curious than that of curing wounds by weapon salves and the powder of sympathy—a practice which, at the time, was looked upon as owing its virtue to magic or supernatural means, so great an improvement was it over the treatment of wounds then in vogue.

Paracelsus, who was born in Switzerland in 1493, just thirty-three years after Edward IV, had incorporated "the free men of the mystery of barbers of the city of London using the mystery or faculty of surgery" into the Royal College of Surgeons of England (1460), recommended the following weapon salve: "Take of moss growing on the head of a thief, who had been hanged and left in the air, of real mummy, of human blood still warm, each one ounce; of human suct two ounces; of linseed oil, turpentine and Armenian bole, each two ounces. Mix all well in a mortar, and keep the salve in an oblong, narrow urn." "The sword was to be dipped in blood from the wound and anointed with the salve and put in a cool place." The wound was to be kept clean, covered with linen and dressed every day. We take it that this treatment came into general use in England, since more than two hundred years later we find in Dryden's "Tempest" a dialogue between Hippolyte and Miranda, in which Hippolyte complains of his wound until Miranda unwraps, wipes and anoints the sword, when Hippolyte says: "Upon the sudden all the pain is leaving me. Sweet heaven! how I am eased!"

During Dryden's lifetime Sir Kenelm Digby published his book on the cure of wounds by the "Powder of Sympathy." He claimed to have received a knowledge of this wonderful powder

from a priest just returned from the Orient. With this, which he called "vitriol," he claimed to cure wounds without either touching or seeing the patient; by dissolving some of the "Powder of Sympathy" in a vessel containing water, and putting in this water any article having on it blood from the wound to be treated. In the meantime the patient was advised "to cast away all your plasters, only keep the wound clean and in moderate temper 'twixt heat and cold." However absurd this may seem, Draper tells us it was the beginning of the doctrine of adhesion, or the cure of wounds by immediate union, a practice little appreciated until the days of John Hunter; while Dr. W. A. Hammond claims that it embodied all there is of real value in our modern antiseptic treatment of wounds, and occasioned a greater revolution in the treatment of wounds than has been accomplished in later times by Lister and his followers.

Of all forms of delusive cures, none better illustrates the credulousness of men than the royal touch for kings-evil or scrofula. Of its origin we know nothing, but it has been less than two hundred years since the University of Oxford ceased to print the Office of Healing, together with the Liturgy. That all might be benefited certain days were fixed by the Privy Council and announced in all the parish churches. The royal surgeon selected the cases, that imposters might be excluded, and as they came into the appointed room divines in full canonicals stood around the canopy of state, and as the words, "They shall lay hands on the sick, and they shall recover," were read the king touched the sore or swelling and hung around the patient's neck a white ribbon, to which a gold coin was fastened. If the coin was lost or spent the swelling came back.

Macaulay tells us (History, Vol. III, page 429 to 431), that Charles II, during his reign, touched nearly 100,000 persons, and the annual cost was about 10,000 pounds. William of Orange could be induced to exercise this kingly function only once, and then as he touched the patient he said: "God give you better health and more sense." Dr. Johnson, when four years old, was touched by Queen Anne, and Boswell sagely tells us the failure to cure in this case was due to his not having been touched by the rightful heir of the house of Stuart. Writers, theologians, lawyers and doctors differed as to whether the "balsamic virtue of the royal hand" was due to inheritance or to unction ad-

ministered at the coronation, and charged that failure to cure was due to want of faith on the part of the patient.

About the time of our Revolutionary war Mesmer, who had been studying the curative effects of magnets, propounded the theory that there was in the human body a power similar to that in a magnet, which he called animal magnetism, by which power one person could exercise an influence over another, producing wonderful effects on his body and mind. Like many scientific men of to-day, he possessed the faculty of talking pleasantly and learnedly about obscure things, and so expressing his theories as, on general principles, to be very plausible. He affirmed "That the sun, moon and fixed stars mutually affect each other in their orbits; that they cause and direct in our earth a flux and reflux not only in the sea, but in the atmosphere; that there is a medium of a subtile and mobile nature, which pervades the universe and associates all things together in mutual intercourse and harmony"—a general statement which no one seemed prepared to deny. This subtile medium was electricity or magnetism, which he claimed to be able to control, and being endowed to a remarkable degree with what we now call hypnotic power, he soon became a noted man and a worker of miracles of healing. He opened luxurious apartments in Paris, lighted by the richest stained glass, filled with a sighing of sweet music and soft female voices, while the air was laden with overwhelming perfumes. In the midst of this magnificence he arranged a vessel containing bottles of magnetized water, iron filings, etc., to which he gave the name of *baquet*, and from this rods ran out to touch the diseased parts. Around this *baquet* the patients sat, holding each other by the hand and pressing their knees together to facilitate the passage of the magnetic fluid, while now and then strong and handsome young men came in to rub and pour into the patients from their finger tips fresh streams of the wondrous fluid. Mesmer was now at the high tide of success, and how completely Paris was taken in is shown by the fact that about 1785 the king of France offered him an annuity of four thousand dollars to reveal his secret, which offer he declined. The king then appointed a committee of investigation, on which Dr. Benj. Franklin, then United States Minister to the French court, served. Their report was unfavorable to Mesmer, as in their opinion "the effects actually produced

were produced by the imagination." Mesmer, the great and honored, was unable to recover from this exposure, and soon left the people he had so completely duped, and died in obscurity at Meersburg in 1815, leaving as his only monument the word Mesmerism.

While Mesmer sank to an inglorious obscurity, the supposed powers to which he gave the name of animal magnetism have survived, and under the name of mesmerism, spiritualism, hypnotism, spirit-rapping, table talkings, etc., have ever and anon come to the surface and served to group together a multitude of manifestations, which have given rise to an amount of delusion and credulity hardly exemplified on any other subject. Time would fail me to enter into a discussion of the theories of hypnosis either as a psychic state or as a therapeutic method. Kipling has defined a skeptic as "one who has seen much more than he can account for," and this seems to be the state of mind of most students of this subject.

Therapeutically, that it may be the means of introducing salutary suggestions, and so open up an avenue of approach to the patient's preoccupied mind none will deny, but when it has done this it has only prepared the soil for suggestion and acted on diseases by mental impression. "Therefore the only therapeutics possible under hypnosis is by mental impression, and the only diseases curable are those that can be influenced by the mind." Under its influence microbes cannot be made to pack their baggage and leave, nor can it eradicate organic disease.

It is almost impossible in the human subject to eliminate mental influence either of mind upon mind or of mind upon body. John Hunter claimed that by directing his attention strongly to any part of his body for a few minutes he always felt a morbid sensation in that part, and Dr. Carpenter, under the title of "Predominant Idea," advanced the same thought. Regnault (Boulettin General de Therapeutique, March 15, 1901) tells us "The psychic centres are able to influence the vasomotor nerves, and consequently the circulation and secretions. Pills of bread crumb have been able to cause diarrhoea; and a disagreeable psychic sensation is able to stop the secretion of milk in a nursing woman. Concentration of the mind on a particular part of the body is able to modify the flow of blood in that part. It is not astounding, then, to observe in hysterical patients the amelioration of apparently organic diseases by means of suggestion and auto-suggestion."

All wise practitioners use this normal suggestion whenever able, and in so doing make use of a means neither new, miraculous or unintelligible. If by its use a patient is cured we do not regard the cure as always permanent, but, on the contrary, expect a relapse because such patients are of a hysteric temperament, too often but confirmed neurotics; for susceptibility to this means of cure is a sign of degeneration.

In our day hypnotism has become the refuge of moral perverts, and, having taken the place of temporary insanity as a plea in court, is made an excuse for every crime from murder to petit larceny, and has relieved the devil of the charge of having led astray the more decent social sinners.

In the medical world hypnotism has of late been quite eclipsed by Christian Science, probably so named because Christianity and science are two things chiefly lacking in its make-up.

Mrs. Mary Morse Baker Glover Patterson Eddy says she discovered the "science of Metaphysical Healing," since called Christian Science, in 1866, and her discovery has made her both famous and rich.

Mrs. Eddy, who is now seventy years old, twice widowed, and once divorced, began life as a homeopathic physician, and later lectured on "Christian Mind Healing, as exemplified by the late P. P. Quimby." In 1881 she started the Massachusetts College of Metaphysics, which conferred the degree of C. S. D., and students in numbers attended her lectures. "Providence impelled" her to charge \$300.00 for a course of three weeks' instruction in "Mind Healing," and when success seemed assured, she closed her school because of "conscientious scruples concerning diplomas"; but curiously the Massachusetts authorities seem to have developed the same scruples about the same time, and it is said that "for some years Mrs. Eddy has been careful not to set foot in that State except on Sunday." She now makes her home at Concord, N. H., and is the conductor of a large and most successful publishing business, receiving, it is said, the largest royalties of any American writer. At her age the nimble pen naturally loses some of its cunning, so she has collected around her a publication committee, who seem to look after the controversial and business departments which have grown up around this enterprise, for much money is now invested in, and many people get a living out of Christian Science, which is a well advertised mode of healing. Of her book, more than 200,000 copies of

which are said to have been sold, costing \$3.00 in cheapest binding, Mrs. Eddy says: "It was not myself, but the divine power of truth and love, infinitely above me, which dictated science and health, with key to the Scriptures." "I was only a scribe echoing the harmonies of heaven in metaphysics." "What I wrote had a strange coincidence or relationship with the light of revelation and solar light. I could not write these notes after sunset."

As to her religion, Science and Health tells us: "Destroy the sense of sin and sin itself disappears." "The theory of three persons in one God suggests heathen gods." "The influx of divine science is the Holy Spirit." "Jesus raised Lazarus by the understanding that he had never died." "Divine science never dishonors the claims of truth by forgiveness. Through understanding it destroys error, never pardons." The fact that Judas carried the bag is used to prove that Christ collected fees for His miraculous cures. These and other teachings led Rev. J. M. Buckley, D. D., of New York, to say in the North American Review for July, 1901: "Whether the Bible be true or false, the claim that Science and Health agrees with or interprets the Bible is without foundation," and "that all that the human race has learned is false if this fad is true." Yet, in the North and West, these doctrines are taught in splendid temples glowing with electric light.

If the assertion of Professor Noah K. Davis is true (Elements of Psychology, page 133), that "idealism teaches that mind is the only substance," then, as a philosopher, Mrs. Eddy must stand first as an idealist. She tells us, "This is the leading factor in mind-science—that mind is all and matter naught." "Matter seemeth to be, but is not." "What is termed matter is but a manifestation of mortal mind." By such assertions not only does she prove to her satisfaction that, in the words of Tom Hood, there is "no nothing," but that "all other mis-called metaphysical systems are reeds shaken by the wind." She tells us "Bishop Berkley ended his literary career with a treatise on the healing properties of tar water, and Hegel was an inveterate snuff-taker," while Emerson partially lost his mental faculties before death," which shows her they "did not understand the science of mind healing as elaborated in my 'Science and Health,'" and she evidently regrets she did not have the opportunity to teach them the way of the Lord more perfectly. Since "Christian Science es-

chews what is termed natural science," we are not surprised that physiology and hygiene as taught in her book at least has the attraction of novelty. "The condition of the stomach, bowels, food and clothing, and so forth, is of no serious moment to your child. Your views regarding them will produce the only result they can have on the health of your child." "The daily ablu-tion of an infant is not more natural or necessary than to take a fresh fish out of water and cover it with dirt once a day that it may thrive better in its natural element." "Bathing and rubbing to alter the secretions or to remove unhealthy exhalations from the cuticle receives a useful rebuke from Christian healing." Again, "Food neither strengthens nor weakens the body; that mind alone does." * * * "The truth is, food does not affect the life of man;" but she sagely advises it is "foolish to stop eating until we gain more goodness and a clearer apprehension of the living God." Exercise, she says, is of no value, "it cannot possibly enlarge a muscle," and wants to know if exercise enlarges the blacksmith's arm, why not his hammer also?

The existence of disease is denied. "Every disease is an invention of man, and has no real identity in wisdom." "Destroy the mental sense of disease and the disease itself disappears." Of insanity she says: "It implies belief in a diseased brain, while physical ailments so-called arise from belief that some other portions of the body are deranged." She maintains if one believed fully that the brain had nothing to do with the mind there would be no insanity from so-called injuries to the brain, whereas if we believed that the great toe was a cause of insanity, "a bunion would produce it." "We have small-pox because others have it, but mortal mind, *not matter*, contains and carries the infection." "You say a boil is painful; but that is impossible, for matter without mind is not painful. The boil simply manifests your belief in pain, through inflammation and swelling, and you call this belief a boil. Now, administer mentally to your patient a high attenuation of truth on this subject, and it will soon cure the boil. The fact that pain cannot exist when there is no mortal mind to feel it is a proof that this so-called mind makes its own pain; that is, its own belief in pain."

Evidently, Mrs. Eddy never had a boil, but when she had a tooth drawn she made use of a local anæsthetic.

As a means of cure, W. D. McCrackan, of the

Christian Science Publication Committee, North American Review, August, 1901, in a reply to Rev. Dr. Buckley, says: "Viewed merely as a therapeutic agent, Christian Science goes one step beyond homeopathy. The latter, in its high potency phase, administers medicine in which the drug can no longer be detected even by the subtlest chemical test. As a foremost homeopathic physician once said of such medicines: 'There is nothing left but mind.' So Christian Science is homeopathy gone to seed, and in the words of the committee appointed by the Emperor of France to investigate Mesmer, "the effects actually produced were produced by the imagination."

In one particular Christian Science closely approaches witchcraft. If the well-disposed can cure, ill-disposed people can cause disease; so they talk of "mental malpractice," and of "mental trespass." Mrs. Eddy claims her last husband, Mr. Eddy, died of arsenical poisoning "mentally administered," although the autopsy showed heart disease, and in her "Miscellaneous Writings" she speaks of having proof that certain malignant students had "mental design" to kill her. By the "absent treatment" they cure disease without seeing the patient, just as wounds were cured by the powder of sympathy. Denying the existence of disease, these people speak of a person sick as having a "claim" for a certain disease, and the Christian Science doctor is called in to "deny error."

"The practice of surgery is not introduced into Christian Science," this is left to "Materia Medica doctors," as we are called, while in sickness, rejecting the use of remedies, they profess to have such an influence with God as to have Him cure the sick, while they wait to see what will turn up.

Mrs. Eddy is called "Mother," and it is not easy to tell whether her writings or the Bible have first place in the church service, which is a mixture of praising God and Mrs. Eddy.

Of Christian Science, Mr. McCrackan, in the article already referred to, says: "It cannot be fully apprehended by the human, mortal mind," a statement quite consoling to those who can bring only "human, mortal mind" to the study of this subject.

Our study has, I think, shown that Christian Science is homeopathic in religion, *nil* in science, and while it may be good for complaints, is not much for diseases.

Some twenty-five years ago the old-fashioned way of rubbing our patients began to be empha-

sized, and the name was changed to massage. We were told the lazy people of the Sandwich Islands called it *lommi-lommi*, and with them and the Japanese it was regarded as a luxury rather than a therapeutic measure, and so people who had and who had not been rubbed took up massage as a novelty. We began to have some trained masseurs, and to these the big and busy doctors began to turn over their cases. After a time people began to have faith in massage, and we soon had a new school of "drugless science," with its medical colleges, journals, etc.; for it so appears to me did Osteopathy begin.

As officially stated, "Osteopathy is the method and science of treating disease manually by the adjustment of all organs into their proper position, as originated and taught by Dr. A. T. Still, of Kirksville, Mo." In this way they are "claiming to do all, this drugless science, that medicine can do, and more, and to do it better"—surely a claim broad enough to entice the credulous, and nothing makes one so credulous as pain.

Their theory of the manual adjustment of all organs is a simple one, and does not require brains so much as trained grip and touch in the fingers; so their publications are said to be on the line of the little book, "English as She Arc Spoke."

This quotation from the Philadelphia Journal of Osteopathy will serve to illustrate several points: "Osteopathy in its general practice makes specialties, particularly in eye, ear, nose, and throat troubles unnecessary. Astigmatism, for example, does not need an adjustment of glasses to the eye so much as it needs an adjustment of the eye to the field of vision. This adjustment we easily make, and often makes glasses unnecessary when treating other troubles."

As these "doctors" do not doctor with drugs, the courts hold that they are not doctors according to law, and hence may practice medicine in spite of law, a kind of reasoning they will be slow in applying to those who want to enter the legal profession.

If you have been interested along this line, you have probably been surprised at the number of medical fakes that rise and fall in all parts of our country. Not long since the facilities of the United States mails were denied Dr. True, of Boston, and over 32,000 letters were returned to the senders.

The post-office at Nevada, Mo., was raised

from a fourth to a first-class office by reason of an "Institute of Magnetic Healing" started there, but the president and secretary have pleaded guilty to indictments charging them with using the mails to defraud. Just now one of the most successful of these ventures is in operation in Chicago, with Dr. Dowie, the millionaire prophet, at its head, who claims this is his third incarnation, Elijah and John the Baptist being the other two. "Some irreverent joker has said Elijah depended on the ravens and Dowie on the gulls."

For a few months of my professional life I owned a drug store, and in reply to my refusal to buy a line of patent medicines from a persistent drummer I got this answer: "You look at this matter from a professional and not a business standpoint. Your regular stock is for people who are sick, and is all right; but there are just as many people who think they are sick and would like to doctor themselves, and you must have patent medicines to sell these; that is business."

In noticing some of the best-known medical heresies you have doubtless seen that in the main we have only gone on an excursion away from our usual study of cures by drugs into the region of cures by the imagination. Of these cures, it has been said that they are wrought in one of two ways, by what is called mind cure or faith cure; and the difference between them is the mind cure does not require any faith, and the faith cure does not require any mind. If in the mind cure any process of reasoning is made use of, it is a kind about as logical as that of the homeopathist who thought to cure hay fever by marrying a grass widow; while in faith cure, as exemplified in Christian Science, the trouble seems in just whom or what to have faith.

In either case, if really sick, it would be well for the patient to have faith, that—

"Beyond, a golden city waits,
And nearer swings the distant gates,
Inside of which are rest and calm,
And crystal springs and groves of palm."

It has been said the medical crankeries we are so actively bringing forth may constitute a national psychological danger; but this is not an American peculiarity. Secret, or proprietary, remedies were sold by the Egyptian priest five hundred years before the Christian era, and we have seen how charms, amulets, etc., were sold both by pagan priests and the priestly physicians of the Christian Church, customs still prevalent among Asiatic nations, while to-day

European nations derive revenue from a tax on patent drugs, and have as many medical heresies as we can boast.

Explanations as to the origin of medical delusions and how, in spite of education and the experience of men, they have continued to grow, are too numerous to be undertaken here. The history of medicine shows that as physicians we are heirs of a long tradition originating from the sages of India and the temples of Greece; and, since the days of Hippocrates to the present, in every generation, there have been men laboriously striving to acquire a knowledge of disease with reference to the relief of suffering and the prolongation of life. In all this time science may have guided us slowly, but she has never guided us backward. Each generation of workers has found themselves unable to believe what their grandfathers in the profession had taught, and so they moved faster than the unthinking part of the profession and the populace about them. These last, it seems, too often satisfied with, held on to the cast-off clothing, the rejected ideas of medical thinkers; and, so these once accepted medical ideas, mixed with other and older delusions, became the accepted medical creed of many people, and especially of those who, without medical education, wished to live by physicking their fellow-men. There is no delusion without some basis of truth, and no medical delusion but, at some time in the past, had a greater or less professional acceptance.

The explanation which accounts for the apparent increase in medical crankeries by assuming this increase to be a protest against the materialistic tendency of modern medicine can hardly be correct. Rather, it is a proof of medical advance, for as medicine advances, as we have seen, it leaves the more old ideas behind, and the patent medicine man makes use of the popular belief in these old ideas to sell his drug or introduce his heresy, the introduction of which is made the easier because such ideas were, in some form, so recently held by the profession.

When old ideas were more tenaciously held on to by the profession, delusions were also blessed with a longer life. Galen died about A. D. 201, yet in 1559 Dr. Geynes was called before the College of Physicians and Surgeons of London for impugning the infallibility of Galen, and had to make public acknowledgment of his error before he could enjoy any further privileges of the College. It was during this

period that most of the delusions we have noticed as destined to an earthly immortality flourished or began, while of those now popular hypnotism, which we may date back to Mesmer, is probably the oldest and in some degree a component part of most of the others.

While the acceptance of the bacterial theory of disease and the consequent increase in the number of so-called infectious diseases and of specific treatments has thrown over to these people more cast-off ideas than the cranks of any previous age ever held, it appears that when the reforms now promised by bacteriology become facts and the profession and the public are once educated in this new professional faith the quacks will have to revolutionize all their crankeries to meet the new public demand. That they will be equal to the occasion we have no reason to doubt, for the only things without end are eternity and quack doctors.

The practical lesson to be drawn from a study of medical delusions by us, who esteem it our duty to keep fully abreast with the advances in medical science is—

“To learn what crippled theories she flings
On the dust-heap of forgotten things”

and so, knowing that the most plausible ideas have sometimes failed to meet expectations, we may cultivate a spirit of conservatism in our choice of the new, and a not too great haste in deserting the old, for—

“Above all price of wealth
The Body's Jewel—not for minds profane,
Or hands, to tamper with in practice vain—
Like to a Woman's virtue is Man's Health,
A heavenly gift within a holy shrine!
To be approached and touched with serious fear,
By hands made pure and hearts of faith severe,
Even as the Priesthood of the ONE divine.”

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PAST, PRESENT AND FUTURE OF CANCER.*

By STUART MCGUIRE, M. D., Richmond, Va.,

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Cancer has been a constant subject of study in all ages and in all nations; but the mystery of its origin has yet been unsolved, resistance to its progress has yet proved unsuccessful, and the symbolic crab continues to sink its claws slowly but relentlessly into the flesh of its victim. The disease, at first local, becomes regional and constitutional, recurring when removed, disseminating when left; undergoing degeneration, intractable ulceration, deep spreading excavation, and is usually followed by cachexia and death.

It is the object of this paper to review the history of cancer, to call attention to the recent views of the etiology of the disease, to state the present accepted principles of its treatment, and to suggest the possible developments of the future—a scope admittedly too broad to be properly covered in the time at the writer's disposal for preparation, or of the Society's programme for reading.

HISTORY AND ETIOLOGY OF CANCER.

The earliest medical writings contained descriptions of tumors, and their origin was attributed to the influence of malign or evil spirits. Hippocrates taught that the body was composed of four humors—blood, phlegm, black bile and yellow bile; and Galen believed that tumors resulted from the accumulation of one of these humors. Harvey, by the discovery of the circulation of the blood, overturned preconceived views of pathology, and the blood was next regarded as the source of disease, and its organization the origin of tumor formation. Boerhaave, some years later, ascribed tumors to the newly discovered lymph, the vitiated or degenerated variety being supposed to produce cancer. Hunter was the first to recognize the similarity in structure between tumors and normal tissues, and to maintain that they originated by a modification of formative processes. Broussais, early in the nineteenth century, claimed that all tumors, including cancer, were forms of chronic inflammation consequent on organic irritation. This view, owing to its simplicity and comprehensiveness, at once became accepted, but

* Read before the Medical Society of Virginia at its thirty-second annual meeting, held in Lynchburg November 5-7, 1901.

its supremacy was short-lived. Schleiden, with the aid of the then recently-perfected microscope, discovered the cellular structure of plants. Schwann demonstrated the analogy in animals; Muller established the fact that tumors were formed of cells, but believed the cells were derived from the blood. Virchow accepted the cellular structure of tumors, but denied the blastemal origin of the cells. He proved that cells could not develop *de novo*, but followed biological laws, and were always the result of the division of pre-existing cells. He believed in metaplasia, and taught that a given cell under some conditions might become an epithelial cell, and, under other conditions, a connective tissue cell. Cohnheim controverted the existence of metaplasia, and established the law of the legitimate succession of cells. He classified tumors by referring each to the embryonic layer, from which its cells had origin, and advanced a novel and ingenious theory to explain their development. He claimed that during the progress of cell differentiation in the embryo more cells were produced at a certain point than were necessary for the formation of that particular region. He believed that these left-over cells—not utilized by the growth of the organism—were arrested in their further development and remained in a dormant condition. He claimed that if the energy of these detached and slumbering islets of embryonal cells were reawakened later by internal or external stimulation, they would undergo rapid proliferation and form a tumor, whose histologic type and clinical behavior would depend on the epiblastic, mesoblastic, or hypoblastic source of the parent cells. The physiologic analogue of this hypothetic pathologic process is seen in the changes which occur in the human body at the age of puberty, when cells that have slept for years with latent energy are re-awakened, and, multiplying rapidly, produce the development of the sexual organs and the other changes characteristic of that period.

Based on Cohnheim's theory, which is almost universally accepted, the term tumor is now used in a much more restricted sense than formerly. At one time the word was employed to designate all kinds of swellings; now a sharp line of separation is drawn between tumors supposed to be the result of the proliferation of embryonal cells occurring independently of microbic cause, and inflammatory swellings demonstrated to be the result of the proliferation of mature cells produced by the action of pathogenic organisms.

Bacteriologists have accepted this division, but have patiently and persistently endeavored to prove that many of the growths supposed to be tumors or neoplasms, due to the proliferation of embryonal cells, were really inflammatory swellings, due to the action of hitherto unknown but recently-discovered micro-organisms.

In the past few years lupus, syphilis, leprosy, tuberculosis, actinimycosis, and other diseases have been proved, either by direct demonstration or by argument from analogy, to be due to a germ, and one by one have been transferred from the slowly diminishing list of tumors to the gradually increasing list of infective granulomata. At this time a vigorous and well-directed effort is being made to prove that cancer is due to a parasite, but the claim is resisted by the adherents of the cellular theory of the origin of the growth. Two papers read a few months ago at the same meeting of the American Medical Association, one by Dr. Nicholas Senn, of Chicago, and the other by Dr. Rosewell Park, of Buffalo, ably and forcibly present the two sides of the question.

Senn, perhaps, the greatest surgical philosopher of the day, presents his views with citations of authorities so voluminous that while the article will remain as a permanent encyclopedia of reference to the literature of the subject, it is almost impossible to make an abstract of it that does justice to the author. Senn adheres to the cellular theory of the origin of cancer, and claims that from an etiologic standpoint very little has been added to our knowledge of the disease since the epoch-making labors of Virchow, Cohnheim, and Waldeyer. He says that after the demonstration of the fact that all inflammatory processes were caused by micro-organisms, it was natural that by reasoning from analogy the conclusion was reached that cancer was also a parasitic disease. Earnest workers in all parts of the civilized world have investigated the subject; various methods of tissue staining, cultivation, and inoculation have been utilized; numerous intra-cellular and extra-cellular bodies have been discovered and described; but the numerous claims of having isolated the essential cause of cancer have never yet been substantiated. Searching criticisms from different reliable sources have shown almost conclusively that these bodies are not living organisms, but the products of degeneration of the cell protoplasm of a non-parasitic nature.

Senn claims that the histology and histogene-

sis of cancer speak against a parasitic origin of the disease, because of the difference in the histologic structure of the cells which constitute the mass in carcinoma and in inflammatory products. Carcinoma differs morphologically according to the structures in which it originates, while inflammatory products present the same structure independent of their anatomic location or character of the tissue involved. In other words, sarcoma of the breast when transported by metastasis to the liver produces typical breast cancer in the liver, while inflammation of the breast transported to the liver produces ordinary hepatitis.

Senn states that the results of implantation and inoculation experiments have so far failed in establishing the parasitic theory of carcinoma. The two objections to the validity of the claim are:

1st. The variety of microbes and bodies which have been found in carcinoma tissue by different experimenters, and for all of which—at different times and by different authors—the same specific pathogenic qualities have been claimed.

2d. The histologic structure of the products of implantation of carcinoma tissue—or inoculation with the supposed cancer germs—does not correspond with the structure of a true carcinoma.

Senn states that no well-authenticated case of inoculation carcinoma has occurred among surgeons who have frequently injured their fingers and hands during operations for carcinoma, while inoculation tuberculosis from the same cause has been frequently observed. The same can be said of persons who take care of carcinoma patients, or who live in the same room with them. In the case of an inoperable carcinoma of the leg, Senn implanted subcutaneously fragments of aseptic carcinoma tissue at two points on the affected limb. During the first two weeks little nodules formed at the point of inoculation, but then gradually disappeared.

On May 4, 1901, Senn inoculated himself with carcinoma tissue immediately after he had completed a radical operation for advanced carcinoma of the lower lip. The patient from whom the malignant graft was obtained was an Irishman sixty years of age. The submental and submaxillary lymphatic glands were involved. The glands were immersed in warm saline solutions, and from one of them a fragment the size of a split pea was used for implantation. A small incision was made about

the middle of the forearm, under strict aseptic precautions. One of the margins of the wound was undermined sufficiently to make a pocket large enough to receive the graft. After implantation, the wound was closed with a horse-hair suture and iodoform collodion. The carcinomatous nature of the glandular affection was proven by microscopic examination of the gland from which the graft was taken. In the course of a week a nodule the size of a pea made its appearance, which remained stationary for two weeks, and then gradually disappeared.

Dr. Rosewell Park, to whose enthusiasm and indefatigable industry was due the establishment of the New York State Pathological Laboratory for the Study of Cancer, takes the opposite view. He claims that the infectiousness of cancer has been proved, but admits that the exact nature of the organism has not been demonstrated. He says that it is not now believed that cancer is due to a bacterium, but to a parasite, perhaps similar to the plasmodium of malaria. Little is known of these lowly forms of animal life, and it has not yet been determined whether Koch's laws for the determination of the infectious nature of a given disease are valid when applied to them. In the Buffalo Laboratory, these organisms have been found whenever conditions were favorable, and the introduction of cultures made from them has produced fatal results in animals, although the inoculations have not invariably produced distinct carcinomata. Park states that Cohnheim's theory explains the presence of certain cells in unusual localities, but offers nothing to explain the peculiar behavior of these cells, which constitute the essential feature of malignant growth. He claims that the parasitic theory is much more satisfactory than the cellular theory, and substantiates his views with arguments by analogy, by comparative pathology, by microscopic findings, and by clinical observations. He states that the study of tumor formations in the vegetable kingdom shows a striking analogy between the proposed parasitic theory of the origin of cancer in animals and the known relation of insect infection in plants. Botanists have shown that tumors occur in trees. They vary in size from a trifling gall to a large woody mass, and are frequently spoken of as "tree cancers." The infectious agent or parasite is a minute insect, which disturbs cell growth and produces cell proliferation. Usually there is a traumatism of the bark with infection of the growing wood

beneath. A combination of etiologic factors is necessary—the infection atrium and the infectious agent. Without the atrium the insect could not enter; without the agent the breach would be healed without pathologic change.

Park states that the comparative pathology of tumor formations in the lower animals furnishes an equally strong argument in favor of the parasitic theory of cancer in the human race. Various tumors occurring in insects and invertebrates have been demonstrated to be due to protozoa. The higher we go in the animal scale the more closely do these tumors resemble those in the human being, until the histologic characteristics are almost exactly similar. One cannot avoid the conclusion that tumors in animals and man are due to the same general cause. If, then, their existence in animals can be proved to be of parasitic origin, it strengthens the conclusion in favor of a similar origin for such lesions in man.

Park states that metastasis is regarded as the principal evidence of infectiousness in all infective diseases—from the most acute of the septic and pyemic type to the slower manifestations of tuberculosis. The similar manifestation in cancer is a like evidence of its infectiousness; if it means anything in the one case, it has exactly the same meaning in the other. As the surgeon watches a case of melanotic sarcoma of the leg and sees the gradual transmission of the disease up the limb, and becomes still later aware of the involvement of the liver, then of the lungs, and then of the various other parts of the body, how can he help but say that this is a disease which travels along the same paths and after the same fashion as does tuberculosis; or, when he sees cancer *en cuirasse* following an operation for cancer of the breast, how can he avoid the conviction that he has here to deal with a slowly excepting infection which is gradually extending and travelling as only an infection can?

On the microscopic appearance of cancer, Park says that it is a well-known fact that in and between cells of cancer growth are seen peculiar forms or particles, which have been regarded by some as parasites, by others as a product of cell degeneration. No such appearances are noted in healthy tissue, or in the infectious granulomata, or in the truly benign tumors. They must be either cell degenerations or parasites. Exactly similar appearances have been produced in large numbers after inoculation with cancer

material, but no one has been able to produce such degenerations under other circumstances.

Under clinical observations confirmatory to the parasitic theory of the cause of cancer, Park reports the case of a woman with epithelioma of the chest wall following a burn. As a result of the cicatrix her arm was bound down to her side, and a cancerous ulcer appeared on it under surface. He states that numerous instances in which cancerous infection has followed the track of instruments, such as the trocar, afford other evidence whose value is undeniable. In regard to the objection raised to the infectiousness of cancer, based on the fact of the almost constant failure of investigators to reproduce the disease by inoculation or implantation, he says that the failures were due to ignorance in regard to the conditions which favor the life of minute organisms. By observing certain conditions at the Buffalo Laboratory, carcinoma has absolutely been produced in a number of animals by inoculation, and one positive demonstration of the infectiousness of the disease is worth more than one hundred negative experiments.

Leaving the discussion of the essential cause of cancer, and withholding judgment as to the merits of the rival claims of the intrinsic cell and extrinsic parasite, the writer wishes briefly to discuss some of the existing factors which clinical experience clearly prove to bear an important relation to the actual development of the disease.

Heredity.—The mysterious influence of heredity, a force transmitted by a single cell to the entire organism, by which physical attributes, intellectual powers, moral qualities, and pathologic tendencies are perpetuated from parents to offspring, markedly influence the occurrence of cancer. Twist the facts as you please, the inevitable conclusion cannot be avoided that cancer runs in families. Here, as in the following sections, the explanation may be made compatible with either of the two theories of the essential cause of the disease. If the cellular theory be correct, then there is diminished physiologic resistance to the growth of the matrix of embryonal cells, and they assume active tissue proliferation. If, on the contrary, the parasite theory be true, then it is an increased susceptibility of tissue from diminished physiologic resistance to action of the micro-organism, and they effect localization and produce their characteristic results.

Age.—So constant a factor is age in the devel-

opment of cancer that it is used as a practical diagnostic fact in doubtful cases. Cancer is a disease of middle and advanced life. While the forces of growth and reproductive activity are greatest the tendency to cancer is least. When cancer develops in opposition to these forces the prognosis is gravest. A well-known surgeon once said with reference to the relation of age to the probability of cure, "The older the better."

Sex.—The influence of sex on the occurrence of cancer is demonstrated by the fact that the disease occurs nearly twice as often in women as in men. This is probably due to the functional activity of the breast and uterus in the one sex and the functional inactivity of the analogous organs in the other.

Race.—The bearing of race on cancer is evident, as it is stated that in the United States cancer rarely affects the Indian, and the negro is attacked less frequently than are the whites. As a rule, the higher the civilization the more prevalent the disease.

Diet.—It is supposed by some authorities that diet plays an important role in the development of cancer, but its influence is denied by others. It is claimed that the disease is less frequent in the vegetarian than in the flesh-eaters—the statement being supported by statistics apparently proving that nations living on rice are less susceptible than those living on animal food, and that in any country the portion of the population which, either through taste or necessity, lives on vegetables, is more immune than their fellows whose diet contains a large proportion of meat.

General Health.—The constitutional condition has an uncertain influence on the development of cancer; but it is stated that cancer is a disease of persons whose previous life has been healthy, and whose nutritive vigor gives them otherwise a prospect of long life.

Traumatism.—Traumatism is an important factor in cancer, for in at least 20 per cent. of all cases of the disease the patient will give a history of local injury to the part affected. The injuries are usually of trivial nature, and the explanation offered is that serious injuries cause vigorous reaction, with complete restoration of the part, while minor injuries are often followed by incomplete reaction, and the tissues are left with diminished physiologic resistance.

Local Irritation.—It is a well-accepted fact that local irritation acts as an exciting cause of

cancer, as manifested by the frequency with which the disease attacks parts and organs most often the seat of repeated and prolonged irritation. As examples may be cited the lip cancer of smokers, the scrotal cancer of chimney-sweeps and the close association between gall-stones and cancer of the liver.

Geographical.—The habitat of the individual increases or diminishes the probability of cancer. The disease is rare in the arctic and tropical regions, and frequent in the temperate zone. It is almost unknown in Iceland, Greenland, and Africa, and common in America, Europe, Asia, and Australia.

Topographical.—The influence of topographic location is demonstrated by the difference in mortality records in rural communities and in manufacturing centres. As a general proposition, it may be stated that the rate of cancer is highest where the struggle for existence is hardest and the density of population greatest.

Dismissing the subject of the etiology of cancer, and omitting for lack of space all reference to the histology, symptomatology and diagnosis of the disease, the question of its treatment will next be considered.

TREATMENT OF CANCER.

The great and vital importance of the proper management of carcinoma can only properly be appreciated after a recognition, first of the frequency of the disease; second, the apparent rapid increase of the disease, and third, the improvement in results that has followed the modern methods of radical surgical extirpation of the disease.

The following figures are gathered from a recent article of Dr. Frederick S. Dennis, of New York. In 1890 the death rate from cancer for the United States was 53 per 100,000 population; for England, 67; for Scotland, 60; for Austria, 52; for Ireland, 45; for Prussia, 43; for Italy, 42. In England there are 7,000 deaths annually from cancer and 30,000 patients suffer at all times from the disease. In the United States, by the census, there were 18,000 deaths from cancer in 1890, and conservative estimates now place the death-rate at over 25,000 per annum. Based on the proportion of deaths to cases, as calculated for England, there are to-day over 100,000 cases of cancer in the United States. Statistics also show an apparent alarming and rapid increase in the number of cases of cancer. It has been calculated that

in recent years cancer of the breast alone has increased 12 per cent. in Connecticut; 50 per cent. in the District of Columbia; 115 per cent. in Rhode Island, and 179 per cent. in Philadelphia. Rosewell Park makes the startling statement that if cancer continues to increase during the next ten years as it has done in the past ten, at the end of a decade more people will die in the State of New York from cancer than will die from small-pox, typhoid fever, and tuberculosis combined.

It is but fair to state that Senn and others claim that this increase is more apparent than real, and is due to more accurate diagnosis, more frequent post-mortems, more general resort to operative intervention, and to increased longevity.

Statistics in regard to the improvement in the permanent results of operation for cancer are prolific, but not easily concentrated to comparative figures. Dennis reports eighty-seven cases of malignant growths operated upon and cured; the nature of the disease in each instance being demonstrated by microscopic examination, and the permanency of the result tested by careful subsequent observations for a period, in no instance less than three, and in some of over twenty years.

While Dennis' results are no better than those attained by many other surgeons, yet he deserves the thanks of the profession for the arduous labor he has performed in tracing his cases and proving the fallacy of the views of many of the laity that cancer is incurable.

In actual practice almost every conceivable treatment has been applied to cancer, and while the dearly-earned experience has united the profession in the conclusion that at the present time there is but one possibility of cure—namely, early and radical surgical intervention—it will be well to review other methods which have been tried and failed.

Electricity.—Electricity, which has promised so much in so many different fields of medicine, and which has practically yielded so little of positive therapeutic value, has been long, faithfully, and variously employed in the treatment of cancer. Constant and interrupted currents have been applied, electrolysis and cataphoresis used, and lastly, the influence of the X-ray tested, all with practically negative results.

Drugs.—The local application of methylen blue, formaldehyde, and similar antiseptics, has resulted in no good except to diminish the offen-

siveness of discharge in ulcerative cases. The parenchymatous injection of alcohol, acetic acid, and other sclerotics has accomplished nothing save in a few cases where they have temporarily arrested the local extension by impairing the blood supply through cicatrization of adjacent tissue. The internal administration of iodide of potassium, arsenic, cundurango, turpentine, cinnamon, clover tea, and a host of others has served no purpose, unless it has been to keep alive the flickering hope of poor unfortunates painfully conscious of their doom.

Toxins and Serums.—The injection of the combined toxins of the streptococcus erysipelatis and of the bacillus prodigiosus, which for a time excited so much attention, has ceased to be seriously considered. Even its originator, Coley, states that it has only an inhibitory influence on carcinoma, and is but rarely curative. Canceroin, a toxic product derived from cancerous tissue by Adamkiewicz, has been extensively tried, but has proved to be without specific virtue. Blood serum, obtained from horses, goats, and sheep, injected with cancer juice, or the toxins of the supposed cancer protozoon, have likewise failed. Despite these facts, the serum therapy of cancer offers a promising and fascinating field for investigation. If cancer be due to a parasite, if it can be isolated and cultivated, if its peculiarities can be studied and its idiosyncrasies noted, in the words of Dr. Park, "It is not too much to hope that some agent, be it either vegetable or mineral drug, or animal antitoxin, may yet be discovered by which the ravages of the disease may be checked or prevented."

Caustics.—Chemical escharotics were once largely used by the profession in the treatment of superficial forms of cancer, but they have now been practically abandoned, and are only of interest owing to their frequent revival by quacks and charlatans, who reintroduce them as new discoveries, cloaked in mystery and invested with marvellous properties. A caustic causes coagulation of the protoplasm of the cells with which it comes in contact. It acts chemically, has no selectivity, and destroys healthy and diseased tissue alike. It produces the formation of a sphacelus which separates from adjacent structures by ulceration. Its action is slow and the pain produced prolonged and extreme. Its destruction of tissue is uncertain in extent, and the carcinoma is frequently not removed, and sometimes healthy tissue is unnecessarily sacrificed. It leaves an open, suppurating wound,

which entails a long period of convalescence, and exposes the patient to the dangers of secondary hemorrhage and pyemic infection.

When it is remembered that the only object in the use of a caustic is to remove the diseased tissue, and when it is known that this can be done much more speedily, accurately, and painlessly by the knife, with shorter period of convalescence, less resulting deformity, and diminished risk to life, it is at first a matter of surprise that cancer quacks prosper. Competition with them, however, will soon supply the explanation—competition, not in a pecuniary sense, for they have consistency in their effrontery, and their charges are in proportion to their promises—but competition in a higher sense; contention for a case, not a fee; effort to save a patient from what is believed to be a sacrifice of the one and only chance of recovery—namely, radical surgical removal before regional and general infection make the case inoperable. Quacks have apparently no professional restrictions, no moral obligations, and no legal responsibilities. Free from the provisions of the Code of Ethics of the regular profession, they advertise extensively in all the popular publications of the day, offering hope and promising cure to despairing individuals ready to grasp at straws. Communication once established, the victim is bombarded with reprints of histories of cases successfully treated, copies of eulogistic editorials from venal religious papers, and sweeping letters of endorsement from ignorant and credulous ministers of the Gospel. The patient secured, the lotion or paste is applied. If the disease be a warty excrescence, or a benign tumor, or a syphilitic sore, the case is cured and the result recorded. If it be cancer, the case dies, and the profit is pocketed. Yet, the public, which has organized a Society for the Prevention of Cruelty to Animals, and the Legislature, which has passed laws to prevent money being obtained under false pretences, stand idly by, and the medical profession, when it attempts to expose the outrages being committed, is charged with being actuated by unworthy motives.

Operative Treatment.—The early and radical use of the knife offers the only possible cure for cancer. The theory that cancer is a local manifestation of a constitutional dyscrasia has been abandoned. The fact that cancer is at first a strictly local disease and becomes regional and general later by extension and metastasis, has been accepted. If the diagnosis of cancer can

be made early while the disease is yet local, and if its anatomical position is such as to permit of its complete removal, the prognosis is good. If the diagnosis of cancer is delayed until the disease has become regional by extension through the lymphatics, the prognosis is bad. If the diagnosis of cancer is postponed until the disease has become general by dissemination through the veins the prognosis is hopeless. It will thus be seen that the cases early diagnosed are the ones that give the cures, and the cases only recognized late in their pathologic life give the failures. Authorities state that after the disease has been in existence for more than six months removal, no matter how complete, is almost certain to be followed by recurrence.

Second only in importance to early diagnosis is the completeness of the operation for the removal of the infected tissue. Heidenheim, by exhaustive research, has shown the direction of the regional extension of cancer, and taught the surgeon the necessity of not only removing the organ in which the disease originated, but the adjacent lymphatics as well. In cancer of the breast, not only should the mammary gland be amputated, but the axillary and possibly the supra-clavicular space opened and explored. In cancer of the cervix, not only should the uterus be removed, but the retro-peritoneal glands of the pelvis examined. In cancer of the penis, not only should the organ be sacrificed, but the inguinal glands exposed and if necessary enucleated. As operations for cancer have become more radical, the ultimate results have become more favorable.

Did time permit, the writer could report from his personal operative experience cases of cancer of the skin, of the lip, of the tongue, of the stomach, of the bowel, of the rectum, of the breast, of the uterus, of the penis, and of various other organs and structures, which would illustrate the method of clinical diagnosis and the technique of surgical intervention. But as such is not the case, he will reserve them for a future and more practical paper.

Analyses, Selections, Etc.

Cancer: Its Nature and Treatment.

Among the "leading articles" of *The Medical Press and Circular* (London), October 16, 1901, we find the following:

A remarkable article by Dr. J. H. Webb, of Melbourne, deals briefly with the ideas which its author holds on the subject of the aetiology of cancer, and, at greater length, with the method which he has adopted for its *cure* in certain cases. The aetiology of the disease, according to the author, may be briefly stated as follows: In the first place Dr. Webb demands the granting of three postulates—(1) All secretions must have their uses; (2) consequently, the loss of any secretions, save such as are required for temporary requirements, must mean some sort of disorder; (3) all reproduction is subject to control, or else, given nutrition, it would be indefinite. "Now, in obedience to this law, there must be something that regulates the proliferation of the cell. It can only be a secretion, subjected to a higher power." This secretion is cholesterine, which is kept in solution by its natural aqueous solvent soap. It is the loss of this soap that permits cholesterine to separate from the living cell and cell-cancer to start. "If I were asked what is malignancy, I would reply, it is the crystallization of cholesterine from the living cell." Working on these lines, Dr. Webb first came to the conclusion that the cause of cancer must be the loss of the controlling effect of the cholesterine, and with that idea he injected cholesterine, at first—thoughtlessly, as he says—dissolved in ether. It then struck him that as the other evaporated the cholesterine crystals reappeared, were absorbed, and, were carried off in the urine. After some time he found that soap was the natural aqueous solvent, and accordingly he dissolved some crystals of cholesterine in soap solution, and injected the drug in this form. At the same time he administered thyroid extract, and also another substance—animal gum—which he afterwards discarded. The case was one of epithelioma of the face, which had been operated upon and had recurred. It got well in a month. The second case was an unnamed form of cancer, on account of which the patient had had half of his lower jaw removed. Dr. Webb injected the same solution which he had used in the former case, and the man rapidly improved. Then a curious

thing happened. Dr. Webb discovered that the supposed solution of cholesterine was not a solution at all, as the crystals "unless they be crushed will not dissolve." Accordingly he, thinking well, "innocently injected" a new solution which he believed to be more perfect. The results were most disastrous, as the diseased returned with great rapidity and the patient died. His next case was one of malignant disease of the breast of two years' standing. Here he again injected, as he thought, the cholesterine solution, which he subsequently, as has been mentioned, proved not to be a solution, and administered thyroid extract, discarding the animal gum. "In less than six weeks the whole tumor had disappeared, leaving a firm cicatrix, and this fibrous tissue in turn dissolved, so that in three months one would have hardly known that there had been any disease." For fifteen months the breast remained well, and then the patient returned with a suspicious spot upon it. He reinjected her, and in a few days a slough came away—presumably from where the suspicious area had been situated—leaving an ulcer the size of half a crown. The injections were continued, and the condition disappeared. After this Dr. Webb treated two cases with a stronger solution of cholesterine—a case of epithelioma of the hand and a breast case. In both instances he failed to check the course of the disease. At this point Dr. Webb's article fails to describe with sufficient accuracy the form of soap solution which he adopted in subsequent cases. We rather fancy that there is a misprint, and that he means to convey that he omitted the cholesterine. So far as we can understand, all subsequent cases were treated by the injection of soap solution alone, and the administration—when possible—of thyroid extract. In this manner he treated seven cases. Three recovered and four died. Two of the tongue, and in both the patients had a complete reprieve from pain. A fifth case died from an over-injection of the soap solution—a danger to which the author calls attention. One case recovered in which "the whole of the interior of the mouth and cheek was one mass of cancer. The soap solution used is best made from Allen and Hanbury's superfatted soap. Not more than a teaspoonful may be injected at the time, and various precautions must be adopted. Such in brief is Dr. Webb's treatment and its results. Presumably the *rationale* of his treatment is that soap solution by redissolving the crystallized

cholesterine enables the latter to resume its "control" function. It is much to be regretted that the form in which the treatment is placed before its readers is not more methodical and systematic. Dr. Webb says that as he does not belong to any medical society he could only show his cases to his friends, and this being so, we think that when he came to seek an opportunity for laying these cases before the medical profession generally, he should have taken more pains with the *form* of his communication. All through his article there is evidence of close and acute reasoning—if we grant the truth of the postulates which he lays down—but there is not evidence that he properly appreciates the importance of his subject. Otherwise, he would surely have dealt more carefully with it. Space compels us to withhold further criticism. We can do no more than call attention to an omission which in our opinion vitiates much of Dr. Webb's work. In no single case is there a record that a microscopical examination of the growth was made, and its nature thus definitely determined. This is much to be regretted, but it can in the future be obviated. Will Dr. Webb have such an examination made in his subsequent cases, and then communicate the results of the treatment of cases the nature of which is beyond doubt?

The Administration of Anesthetics.

This is an old subject, and one upon which a great deal has been said and written. Its importance should never be forgotten. A. Kerr, in the *Medical Standard*, says that every patient before being anesthetized should be subjected to a careful, systematic, physical examination, due attention being paid to the following points:

- (a) The presence or absence of either organic or functional disease of the kidney.
- (b) The condition of the heart and vascular system.
- (c) The condition of the lungs and the whole respiratory tract.
- (d) The condition of the gastro-intestinal tract.
- (e) The presence or absence of false teeth.
- (f) The condition of the lymphatic system.
- (g) The condition of the blood, as to the amount of hæmoglobin. (Later not so important.)

(h) Habits—e. g., alcoholism and morphinism.

The preliminary examination of the urine should never be neglected.

Correction of Deformity Following Osteitis of the Knee.

In the paper by Dr. W. R. Townsend, 25 west Fifty-third street, New York, N. Y., read before the New York State Medical Association October 21, 1901, he stated that osteitis of the knee, when properly treated, should not be followed by deformity, yet 50 per cent. of the cases show more or less flexion, subluxation of tibia, knock-knee, bow-legs, or genu-recurvatum. This is due either to faulty treatment, or to failure on the part of the patient to carry out the surgeon's instructions.

The amount of motion that will be obtained after treatment of tuberculosis of the knee will depend largely on the character of the treatment, the length of time it has been carried out, and the more or less effective manner in which the patient has obeyed instructions. Under the best form of protective treatment, we may safely say that over 90 per cent. get well, with some motion, and that all will have straight limbs. In correcting deformity, we have to consider whether there is motion in the joint, or whether it is ankylosed. When ankylosis exists, if it is fibrous, it may be broken up by forcible stretching under an anaesthetic, and then putting the limb up in a retentive dressing plaster of Paris or some other splint; it should be held long enough to see that no recurrence takes place. If adhesions recur and the limb is in a proper position, they will tend to hold it in that position and prevent deformity. Where the deformity is great, it may be necessary to cut the hamstring tendons. If this is done, the external should always be divided under open incision for fear of injury to the external popliteal nerve.

If deformity is extreme, osteotomy will be indicated. By plain or linear division of the bone most cases, except those approaching a right angle, can be straightened. Where the deformity is of a right angle, it may be necessary to do a cuneiform osteotomy, or an excision. The former is the better operation in most cases, because it sacrifices less tissue, is less liable to cause a renewed attack of the disease, as it need

not go through the diseased tissue, heals more promptly, and does not affect the growth of the limb. Excision is liable to be followed by extreme shortening, progressive as the child grows, and may start up disease as we have to go through areas previously inflamed, and is a much more formidable operation. In addition, it may be followed by subsequent deformity, which is not likely to occur after an osteotomy.

The Vance osteotome should be used, as it is an instrument which can be used both as knife and chisel. It is introduced in the long axis of the limb, above the trochanter, and after the periosteum is pierced the blade is turned sideways and the bone chiselled through, making a practically subcutaneous wound.

Cuniformal osteotomy must be done through an open wound. Where motion is present in the joint osteotomy is preferable to excision, as we can correct deformity and leave the joint movable, while, of course, excision destroys all future hopes of motion.

Two cases were presented that had been operated on for extreme deformity, one of flexion to a right angle, and the other of genu-recurvatum. In each case the result was perfect, and the patients were walking around on their limbs with comfort.

Correspondence.

Proposed Tri-State Annual Cellular Therapy Association.

Waycross, Ga., November 5, 1901.

Dear Doctor,—Following out the suggestions of a number of Southern physicians interested in the use of animal therapy, we deem it advisable to organize a *Tri-State* (Georgia, Florida, and South Carolina, or Georgia, Florida and Alabama) *Animal Cellular Therapy Association* for the convenience of those physicians living in the far South, as it is almost an impossibility for them to attend the meetings of the American Animal Therapy Association.

We want your advice concerning such an organization, place, and time of meeting. We would suggest Charleston, S. C., or Atlanta, Ga., as suitable places, and December, 1901, or January or February, 1902, a good time. The Exposition will be open at Charleston, which, in

itself, will be a great attraction. Atlanta will welcome us.

Please let us hear from you at once.

Yours very truly,

WALKER AND IZLAR.

EDITORIAL NOTE.—We publish this note from Drs. J. L. Walker and R. P. Izlar, without time for consideration of the merits of the case, although we can speak of the authors as most estimable practitioners in their community. Let responses be addressed to them at Waycross, Ga.

Editorial.

The Medical Society of Virginia

Held its 32d annual session in Lynchburg, Va., November 5-7, 1901. In every respect it was a great success. The attendance was large, the addition to membership was nearly a hundred, the papers and discussions were good, the social entertainments were all most enjoyable, and the hospitality of the community was in keeping with the reputation for which Lynchburg people are far and widely known. The Committee of Arrangements, under the guidance of Drs. S. C. Busey, J. L. Kent, and others, anticipated every want. The presence of ladies at the banquet was a feature we hope to see adopted in the future. Dr. R. S. Martin, of Stuart, Henry county, Va., the Secretary of the Medical Examining Board of Virginia, was unanimously elected President for the new year. The retiring President, Dr. J. R. Gildersleeve, of Tazewell, Va., in recognition of his valued services to the Society, was elected a Resident Honorary Fellow, and Dr. T. D. Crothers, of Hartford, Conn., was elected a Non-Resident Honorary Fellow. Practically all of the former officers and committeemen were re-elected. *Newport News*, Va., was chosen as the place for meeting next year—the exact day of 1902 to be left to the decision of the Executive Committee after due consultation with the profession of that city. Drs. J. R. Gildersleeve and Landon B. Edwards were elected delegates on the part of the Medical Society of Virginia to the American Medical Association; Drs. R. W. Martin, Lynchburg, and L. Lankford, Norfolk, alternates. The committee (Dr. DeShazo, chairman) to secure a remittance of the license tax on practitioners was continued, and voted \$300 to defray expenses.

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Original Communications.

Benefits of Medical Societies—The Value of Papers and Their Discussion; of Pathological Specimens; of Social Features, etc.*

By WM. P. CARR, M. D., Washington, D. C.

I shall not attempt to review the past history of the Medical and Surgical Society, for you all know that it is a record of which we may be justly proud. I shall rather endeavor to look into the future with suggestions as to how we may continue and enlarge its usefulness. Let us examine into the various ways in which a medical society can be of use. Let us see why and how it benefits its own members and outsiders; and we will be better prepared to develop each beneficial feature to its utmost. The most prominent feature is the reading of papers.

It may be asked why one should go to a society to hear papers read when he has dozens of them at hand in journals that he could read with less expenditure of time, and from which he could select such as seemed most valuable to him. There are several reasons why it is better to hear the papers read at a society. In the first place, the personal equation of the reader makes them much more impressive and more likely to be remembered. Secondly, one is likely to hear from the reader just the important things that he does not know and would be likely to skip if he were selecting papers from a journal. We are likely to learn most from papers whose titles do not attract us, and from subjects in which we think we are not interested. For this reason I would urge members not to absent themselves when papers are to be read upon some special subject in which they are not interested. The reader of such papers usually brings his special subject in such relation to the general practitioner that he cannot fail to profit by hearing

it. The very practical and important points that he needs to know will be forced upon him when he would probably get them in no other way.

For instance, few of us would take the trouble to read in our journals technical papers upon ophthalmology or laryngology; but in this society our laryngologist, who has had a large experience with our shortcomings when we have been brought in contact with him, reads us a paper, in which he tells us the very things he knows we ought to know. He knows us, and we know him. We take a personal as well as a scientific interest in what he has to say, and, above all, we generally know that we can believe what he tells us. If we have any doubts, we may cross-question him freely in the discussion. Knowing our man, we know about what allowance to make for superfluous enthusiasm.

We will all agree to think that nine-tenths of the papers in our journals are not worth reading. Medical papers may be roughly classified as follows:

I. Original exploitation of new discoveries, operations or methods of diagnosis or treatment. These papers are usually worthless, as the new discovery seldom stands the test of time. Rarely they are very valuable, but even then their value is not generally available until confirmed by experience.

II. Criticisms of new discoveries by those having little or no experience with them. Nearly always worthless.

III. Criticisms and results by those who have had considerable experience. Such papers are valuable if written by honest and careful observers; but are often so influenced by prejudice, jealousy, enthusiasm and other human failings as to make them worse than worthless.

IV. Rare cases or conditions. Not very valuable to the average man from their very rarity. Such cases, however, should be recorded for future use.

V. Collections of statistics, with or without

*The President's address, delivered at the annual meeting of the Medical and Surgical Society of the District of Columbia, October 4, 1901.

deductions, always to be taken with a grain of salt, especially the deductions.

VI. Papers that tell us established facts that we do not happen to know. Under this head may be classed papers written by specialists for the general practitioner; papers written by those who have had special experience or unusual opportunities in certain directions; papers presenting the consensus of opinion on every-day matters, and papers in which the latest and best methods of treatment are carefully and intelligently considered. Such papers, when well considered and carefully and honestly written, are most valuable, and I recommend them to your consideration.

It seldom falls to the lot of the active practitioner to make a really valuable discovery. This field is almost monopolized by original investigators, laboratory workers and hospital surgeons, who have spent years in working out some particular subject under most favorable circumstances. Even such men rarely leave to science more than one or two facts or methods. And the discoverer usually selects a large society in which to read a paper of this character.

In spite of these facts, however, a number of new ideas and methods of value have been presented in papers read in this society. I wish, however, to emphasize the fact that the great majority of valuable papers are not of this class, and that no member need feel himself incapable of reading a paper of interest and worth because he has nothing new and original to offer. Neither is it necessary, in considering some disease, that the writer shall have had a case of that disease to report. Any member of this Society may, at any time, pick out any subject, and, by reading, fit himself to give the latest and best thought upon that subject, and thus produce a paper that will be interesting and instructive to us all.

I wish to recommend to your consideration class No. VI, or papers that tell us established facts that we have not had time or inclination to look up for ourselves. The more common place the subject the greater will be our interest and instruction. All depends upon giving us the latest and best views and methods that careful research can develop. Do not strive too much for the rare and novel, but give us good, practical thoughts upon our every-day work.

Next in prominence to the papers come the discussions, and they are of equal, if not greater, value. In our Society the discussions should be, and usually are, more frank and free than in

larger organizations. We get the real opinions of men fresh from their work, where these opinions were formed. We get valuable experiences at first hand, and sharp but kindly criticism for our mistakes and failures. Such arguments and criticisms crystallize our thoughts and opinions. A man may enter into an argument with no well formed opinion of the subject, but before it is finished he has usually crystallized his opinion, and is able to defend it with clear argument and reason. Practice in debate makes one a much more ready, clear and pleasing speaker. Crystallization of thought and readiness in debate, such as come from participating in our discussions, are not only of intrinsic value to our members, but give them greater prestige and power in larger societies; greater power to combat evils and promote good objects and ends, whether purely scientific or of a medico-political character. I would, therefore, urge every member to attend regularly and enter freely into the discussions. It is his duty to himself and to the other members, and to the profession.

It is the duty of every physician to improve himself in every way possible for the good of his patients, for his own good, for the good of science, to which he should add his mite, if possible, and for the good of the medical profession, which he should ever strive to elevate. If he improves himself he surely elevates one member, and will probably, by example, elevate to a lesser degree many others.

One of the most potent factors in such a chain of improvement is a small medical society. If all physicians could be induced to become regular attendants at such a society as ours, quackery and dishonesty would die of shame.

Another educational feature of our Society is the presentation of pathological specimens. No intelligent physician can look at a well-selected specimen without getting a keener insight into the disease it represents. The greater his knowledge and experience, the greater benefit will he derive from it. Nearly all important pathological conditions of common occurrence, and many rare ones, have been well illustrated by specimens in our Society in the past, and I hope this good work will continue in future.

I have also found it a source of great profit, as well as pleasure, to meet my associates informally before and after the sessions. I often want information on some particular case or topic, and can often get it from one of my colleagues more easily and pleasantly than in any other way.

Very few knotty problems can be sprung on such a group without some light being shed on them, and even when no light is forthcoming the inquirer has a more comfortable feeling, for he knows he is not alone in the dark, but has good company. Therefore let every member be always on hand early and late to give information no less than to add to the purely social pleasure of the occasion. And even our purely social feature has its profitable side in the rounding of angles and polishing of manners, and in the formation of character suitable for a physician. For, after all is said, nothing is more essential to a medical man than character. And nothing tends more to form and keep bright a character of honesty and high integrity than such association. In the social atmosphere of the medical and surgical society the subtle temptations of commercialism and quackery find no soil on which to grow. They are killed by the radiance of honesty in this atmosphere, as are the tubercle bacilli by the rays of the sun; while good resolutions thrive, and are strengthened, and energy and enthusiasm grow with astonishing rapidity.

Most important, too, is the fact, that all the profits and advantages I have cited as flowing from attendance on our meetings come to us in such pleasant shape that it is relaxation and not work to absorb them.

Usually the gaining of knowledge requires work, and hard work at that; but if there is any labor about absorbing knowledge, here it is like the labor of playing a game. It is really relaxation and amusement. True, the reader of a paper must work, but his turn comes so seldom that he can well afford to expend his best efforts in that direction. Let him remember that he is working that all the rest may imbibe knowledge without effort. Our strong point is that one labors for all. The rest need only attend to reap the benefit in most pleasant form.

There was never a time when medical men were so closely criticised as at present. Newspapers are continually publishing articles upon medical topics, and reporting the history and progress of prominent cases. We have just had a notable example in the case of President McKinley.

Differences of opinion and criticisms have been published in all the daily papers. Such occurrences are deplorable, as they reflect more or less discredit upon the whole profession. This spirit of criticism is not confined to medicine, as instanced by the squabbles of the army and navy. Nevertheless, we are particularly

interested in those relating to medicine. I believe that if we could multiply our small societies until every physician was a member of one of them, rash talk and unwise criticism would be almost abolished. Our experience in this Society teaches us that we cannot safely criticise until we know all the facts, and that when the facts and circumstances are fully known, there is usually no room for serious adverse criticism. Our Society may be able to do great good in future by the influence of its members in their daily contact with outsiders, and in other and larger meetings.

We have in the past influenced to no small extent the thought and legislation of the district society and association, and we may do so to a still greater extent in the future, as our own ideas become clearer and better shaped by our free discussions here. I hope you all see and realize, however, that our future success as a source of pleasure and profit will depend upon the attendance and enthusiasm of our members. But when such possibilities for good are seen to be within our easy reach, I feel assured that the attendance will increase and enthusiasm grow. Our Society will continue to exert a subtle, but strong, influence for good upon its members—a stronger and stronger influence, that will increase the knowledge, crystallize the thought, and strengthen the character of our members, and by these means spread far beyond our limited circle of membership even to the advantage of all science, and the benefit of the whole medical world.

HEMIPLEGIA.*

By FRANCIS B. BISHOP, M. D.

Hemiplegia may result from a clot in one of the branches of the cerebral artery of either side, or from the bursting of a branch of this artery in its course through the motor area of the brain, causing paralysis of the opposite side of the body. In the case of plugging, the paralysis will usually come on slowly. The writer has known cases to require five or six days to become fully established. The degree of the paralysis will depend upon the branch of the middle cerebral plugged, and the suddenness of the attack will depend upon the size of the clot, and whether the lumen of the artery is com-

*Read at meeting of the Medical and Surgical Society of the District of Columbia, October 4, 1901.

pletely or only partially filled. Hemorrhage, on the other hand, into the brain tissue is most generally very sudden; the patient loses control of one side of the body, appears dazed, and if the hemorrhage is large, immediately loses consciousness, the face becomes red and puffed, stertorous breathing soon appears, blowing out of cheeks and lips with each expiratory effort. Then coma may deepen, and the patient may die at once from shock, or this condition may last for several hours, or even days before death; indeed, it may lapse into weeks and months; the patient gradually improving as the brain clot is absorbed, until he is able to be up with paralysis of one side, and perhaps aphasia, this depending, of course, as to whether the clot is in the right or left brain, or the patient right or left handed.

The question of diagnosis between these two forms of hemiplegia, on the one hand, and between each of them and other conditions, on the other, is of the greatest importance. The gradual approach, the absence of severe shocks, as well as the absence of a rise of temperature, will usually indicate the plugging of an artery, rather than the rupture; but there is another condition, which does not frequently occur, that we must not lose sight of, the condition known as *ingravescent hemorrhage*. In these cases the hemorrhage usually into the internal capsule is very gradual, oftentimes paralyzing one member at a time as the fibres are compressed as they pass through the internal capsule, usually the arm and leg and the face; sometimes the hemorrhage is so slow as to cover a period of several days before complete hemiplegia. When these cases can be detected in time, they should be operated upon by ligating the common or the internal carotid artery. Two cases reported to the American Neurological Society in 1894, by Drs. Keen and Dereum, were operated upon by these gentlemen. One case recovered, and the other died. The differential diagnosis between these cases and hemiplegia from plugging, is that in the latter all members supplied by the brain area involved will feel the weakening at the same time, while in the *ingravescent* one member at a time is involved, and then another, to a state of complete hemiplegia, coma and death, usually, if not relieved.

It is not my purpose to go fully into the differential diagnosis of the various forms of hemiplegia, as the text-books are very complete upon that subject, but it is almost impossible to write a treatise upon the subject and describe any

special form of treatment without discussing to some degree the diagnosis. Suffice it to say that hemiplegia may result from a lesion, either traumatic or vascular, from any impediment to the perfect flow of the nervous energy in the course of the nerve fibre from the motor cerebral cortex to and including pyramidal track.

Thus, when the lesion is in the motor cortex, the paralysis, with spasm, will be in the limb or muscles supplied by that area, and is apt to be confined to one limb or one set of muscles, lesion of the fibre through the internal capsule has been described above, lesion of the *crus cerebri* will cause paralysis of muscles of opposite side of the body and of the third nerve on side of lesion. Of the upper part of pons, will cause paralysis of opposite sides of the body, the tongue and speech unaffected, the pupils contracted, and conjugate deviation of the eyes to the paralyzed sides. Of the lower portion of pons hemiplegia of opposite side of the body and facial paralysis on side of lesion. As we are apt to find the subject of a cerebral hemorrhage in a state of coma, and the rest of the family in a state of great excitement, when we are hurriedly called in, it seems to the writer not out of place to mention here a few points to be remembered at such times, and the following questions present themselves to our mind: Is the coma due to apoplexy, alcohol, opium, or uremic poisoning?

A rupture of the brain, and the sudden pouring out of the blood into the tissues, will produce shock, loss of consciousness, stertor, slow and feeble pulse, due to cerebral compression, and in the early stage, conjugate deviation of the eyes toward the sound side, and often dilatation of the pupil on side of hemorrhage, slight depression of the temperature at first on paralyzed side, followed in a short while by a rise of temperature, which is the beginning of the fever that may last for several days or weeks, according to amount of damage to soft tissues, even in the very early stages, the reflexes are of vast diagnostic importance, the knee jerk on paralyzed side will be increased, and the skin reflexes on the same side diminished or lost, owing to loss of cerebral control, pinching or pricking, either side will sometimes cause the sound limbs to move.

In alcoholic coma, the odor of alcohol and the coma would be the only symptoms to lead one to think of hemorrhage, the other symptoms being absent, but we should be very careful not to allow the odor of alcohol to prevent careful investigation.

In opium poisoning we would find contracted pupils without the cardinal symptoms of hemorrhage. Uremic coma is usually accompanied by great restlessness and delirium, and is rarely complete.

The principal causes of hemiplegia are atheromatous condition of arteries syphilis, heart disease, and prolonged acute diseases of an exhausting nature, weakening the action of the heart and disturbing the blood current.

As we approach the subject of treatment, we must confess that we are powerless to cure the great majority of these cases. Ingravescens hemorrhage, when recognized in time, undoubtedly calls for immediate ligation of either the common carotid or the internal carotid artery. When the hemorrhage is profuse and sudden, there is very little that can be done except await the developments. Some authors advocate bleeding, while others advise a drop of croton oil on the tongue to produce free purgation, but, personally, I can see no special reason for either course. The cause of the trouble is mechanical pressure upon the motor, and perhaps sensory fibres, as they pass through the brain and effecting secondarily the centres of the heart and respiration. A certain amount of damage will be done, regardless of treatment, and to the writer, the most rational treatment is to do nothing except apply cold to the head and heat to the extremities to induce artificial flow of the blood as much as possible from the brain. After the shock, and when the fever is subsiding, any means that will hasten the absorption of the clot will be justifiable. Reason would suggest at this time the application of galvanic electricity, the negative pole as close to the seat of the hemorrhage as possible. A flexible electrode covering motor area, with the indifferent electrode over sternum or back, and pass for five or ten minutes daily a current of from five to ten milliamperes, according to sensitiveness of the patient. The paralyzed muscles of the extremities should be carefully selected and treated by galvanism, faradism and static sparks.

If aphasia is present, the sound hand and leg should be carefully trained in fine manipulations, in order that the unaffected side of brain might gradually assume the functions of the diseased hemisphere.

Report Case of M. S.: A very interesting case was sent to my care by Dr. John W. Bayne, of this city. A lady fifty years old, who had some months previously been the subject of severe cerebral hemorrhage, with hand of right side

drawn in claw shape, she walked with difficulty and her speech was badly affected; motor aphasia pronounced. Electricity was administered as herein described, and she was made to practice daily with her left hand in writing, sewing, and the finer manipulations; her speech improved step by step with the accuracy of the movement of the left hand, and in about six months she was talking with no hesitation, and had resumed her position as a clerk in the Treasury Department.

The treatment of hemiplegia as the result of plugging should follow practically the same course, with the exception that we can commence at once, and in order to strengthen the action of the heart, the cervical sympathetic should be treated by the mild galvanic current. As the other forms of hemiplegia mentioned are generally due to plugging, it is unnecessary to outline any treatment in these cases; and, in conclusion, I beg to state, that contrary to the usually accepted opinion, in many cases of hemiplegia, much can be done to relieve and to enable the patient to resume a life of usefulness, which contributes much to their own happiness and those around them; and to lighten the burdens of our fellow-man is the highest and noblest function of a physician.

DISCUSSION.

Dr. Carr said that he must disagree with *Dr. Bishop* as to the use of treatment. If we knew that the hemorrhage had stopped, there would be no need of active treatment. But we never know this. If bleeding is still going on, much may be done to lessen blood pressure in the brain and check the hemorrhage, thus stopping further damage to the brain. Croton oil or some other active purgative will carry the blood to the abdomen. Had promptly stopped persistent nose bleeding in this way. Elevation of the head, cold to the head and heat to the extremities are helps. When large arteries rupture the force of the blood is tremendous and tears the brain substance like a stream of water turned on a snow bank. Very large clots are formed when good-sized vessels rupture. He has seen clots larger than the two fists. One, seen at an autopsy measured 4 x 5 x 3 inches, and contained about 45 cubic inches of blood, or nearly one and one-half pints.

Had operated upon such a case, and tied the middle cerebral artery without difficulty; but a hole had been torn in the brain, that would have held more than a pint, and the shock was so great that the patient died.

If we could operate on such cases within five minutes after the rupture, we could save them. Later it is useless. When a small artery ruptures the pressure is less, a small clot results, and recovery usually takes place without operation. Complete recovery may be much assisted by the use of iodide of potassium and electricity. These promote absorption. The brain cells that are destroyed never recover, and are never reproduced, but many cells and fibres that are simply pressed upon, recover their function after absorption of the clot, and latent cells take up the function of those that are destroyed if the injury is not too extensive.

Dr. J. D. Morgan referred to cases seen by some of the older practitioners in Washington, and was surprised at results obtained by *Dr. Carr*: The case had been of two years' standing, and under a ten days treatment of iodides, etc., a cure had resulted. *Osler* states, if no improvement is made in three to four weeks, the prognosis is bad; and, if none in three months, the recovery is hopeless. Advises early massage and the use of iodide potash and strychnine.

Dr. Adams said that *Dr. Bishop* presents a practical paper. In case of cerebral hemorrhage, the brain pressure should be relieved. In moribund conditions bleeding should not be used, though in plutonic cases advantageous. Referred to two cases, one of syphilitic gumma, another of uræmic coma, which had been mistaken for apoplexy.

Dr. Reyburn said, that in his opinion the deformity and loss of motion in many cases of hemiplegia can be greatly improved by early and continued treatment by massage, friction, passive motion, galvanism and faradic electricity. The above methods of treatment should be begun early, and generally can be commenced two weeks after the formation of the blood clot in the brain (provided the patient is free from fever). The class of patients are often loath to submit to these manipulations, as they are disinclined to exert any motions of the affected limbs, because they are painful and irksome to them. It should be remembered, however, that the keeping of the affected limb motionless for four or six weeks will of itself greatly impair its function, and firmness on the part of the physician will generally induce the patient to yield to his adviser. At a later period in the case tenotomy of the contracted tendons will often be of service.

Dr. Duekling said that stress has been laid upon operative procedures. In many cases the

hemorrhage is at the base of brain from the lenticulo-striate artery, or into ventricles. Such cases are not operative, as the hemorrhage is not from middle meningeal arteries. In slight hemorrhage operation is not called for. After hemorrhage has stopped passive motion and massage should be early commenced. In properly selected cases bleeding should be used, or aconite or veratrum viride; iodide of potash should be administered. The diseased condition of vessels should be considered.

Dr. Walsh said that the clot may be partly absorbed, and the case improve to a certain extent, could not further improvement be made or a cure effected by an operation to remove the organized clot?

Dr. Kober thought something may be done to hasten recovery, as many of these cases recover with no special treatment; in such cases, of course, there can be no general degeneration of the cerebral vessels, and but slight, if any, obstruction of brain tissue.

Dr. Bishop, in closing, said that in regard to purgatives, he simply expressed his own opinions, but said that popular opinion was so much in their favor that he invariably used them when possible. Bleeding, he thought, was too doubtful in its utility to risk censure, in case of immediate death. The cells of the cortex, he thought, were for a long time simply functionally destroyed by being cut off from the muscles by pressure of the clot upon conducting fibres, or by being deprived of blood by a clot in a branch of artery supplying them. These cells would resume their function as rapidly as fibres could be released by absorption, or receive their nourishment through other channels. All fibres destroyed must, of course, remain so, and the cells of these fibres would undoubtedly degenerate. It is true that hemorrhage into the ventricles sometimes occurred, but this was usually the result of bursting of a branch of the middle cerebral artery.

BRAIN SOFTENING.*

By MICHAEL CAMPBELL, M. D., Knoxville, Tenn.

It is not my purpose to treat exhaustively the subject of brain softening, as it would far exceed the limits of an article proper to be read on

*Read before the Tri-State Medical Association of Georgia, Alabama and Tennessee, October, 1901.

this occasion, but to describe briefly the ordinary development of the disease, and give an account of a case that recently came to me for treatment, and which illustrated one of its rarer forms. As most cases of brain softening are caused by occlusion of its blood vessels, I shall very briefly call your attention to the cerebral circulation.

The brain receives its large supply of blood from the vertebral and internal carotid arteries, which form, by their divisions, the cerebral and cerebellar arteries. These sub-divisions of these last named vessels, besides supplying the ventricles, ramify in the pia mater. This membrane is thrown over the brain like a net, dipping down into the sulci of the convolutions, and send blood vessels to the white matter of the interior, both from below upward and from above downward.

The gray matter, both of the cortex and basal ganglia, because of its greater functional activity, is more abundantly supplied with blood than the white.

Softening of nerve tissue consists in, and is due to, the breaking up of the elements; the resulting particles become saturated with serum, so that a soft pulp replaces the original firm tissue. This is the characteristic effect of inflammation most often seen in the focal inflammation following hemorrhage of the brain.

Formerly all softening was thought to be the result of inflammation, but it is now known that in the majority of cases, it is caused by the occlusion of an artery, vein or sinus, cutting off the blood supply from the part beyond the place of obstruction. These obstructions are caused either by an embolism or thrombus. An embolism may be described as a plug in an artery of the brain, which has come from a distance, usually from the heart, and is an evidence of disease elsewhere than in the brain, while a thrombus is the effect of local disease of an artery in the brain, by which its calibre is narrowed or its intima roughened, so as to cause coagulation of the blood. The chief causes of these changes in the inner coat of an artery that causes thrombus are atheroma and syphilis. The source of a plug in embolism may be anywhere between the lungs and the brain; detached material from a pulmonary abscess may come through the pulmonary veins to the left side of the heart, and from there find its way to the brain. Or it may be the result of an endocarditis, ulcerative or rheumatic. In these cases, Gowers says that there are frequently vegetations on the valves which may become detached, and thus washed into the blood current.

Softening of the brain is divided into three classes—red, yellow, and white. Red and ganglia. Yellow softening comes from red softening by degenerative changes. White softening does not differ from the color of white matter of the brain, where it is found. It is variable in consistence, sometimes diffuent, but more frequently like firm ice cream. The most frequent seats of softening are the cortex, corpus striatum, and optic thalamus, but any portion of the brain may suffer. Changes occur very rapidly after the occlusion of an artery. In one of my autopsies forty-eight hours after the attack, a large area of softening was found, the result of an embolus. The symptoms were those of an apoplectic stroke, with hemiplegia. The hemiplegia was with difficulty made out, owing to the prostration and unconsciousness of the patient.

When we consider the causes of the occlusion of the cerebral arteries, and remember how large a proportion of the human race suffers from endocarditis, syphilis and atheroma, the statement that softening is one of the most common of brain diseases is not surprising. Neurologists generally hold that it is more common even than hemorrhage. The symptoms of cerebral softening in the majority of cases resemble strongly those of hemorrhage, and diagnosis of softening is made rather from general considerations than the immediate symptoms at the time of the attack. Hemorrhage is improbable in a patient under forty years of age. If, in addition, there is a history of heart trouble or syphilis, the symptoms point strongly to softening, and the diagnosis may be made with reasonable certainty. The greatest difficulty is encountered in patients past middle life, for the greater probability of hemorrhage at that age is accompanied by atheroma and arterio-sclerosis, which are causes of softening. Given a case with full bounding pulse and flushed face, hemorrhage is indicated, rather than softening, notwithstanding evidences of arterial degeneration; deep coma is also more characteristic of hemorrhage. Unfortunately, profuse hemorrhage causes pallor and feeble pulse; and, in some cases of apoplexy, in the aged, the most expert diagnosticians can only be sure of the lesion after an autopsy. Notwithstanding the difficulties of diagnosis in some cases of necrotic softening, no pains should be spared to arrive at the true nature of the lesion, as the initial treatment of softening differs radically from that of hemorrhage. In hemorrhage the indication is to lower the blood pressure, to quiet the action of

the heart, and thus favor coagulation; while in softening coagulation is the foe to be dreaded, and is best combatted by sustaining the action of the heart with digitalis and strophanthus. The above, briefly described forms of brain softening is applicable to the ordinary development of the disease, and does not include certain rarer cases that have a different symptomatology, one of which recently fell under my notice.

There was brought on July 31, 1901, to the Eastern Hospital for the Insane, near Knoxville, Tenn., Mr. M. L., aged twenty-nine. He had a history of syphilitic infection six years before his admission, and had gone to Hot Springs, Ark., for treatment. He was in charge of my colleague, Dr. S. R. Miller, during the fall of 1900, when nervous symptoms developed. He complained of severe pain at the base of the skull, and the head was abnormally sensitive to percussion. He also suffered with deep-seated pain apparently in the centre of the cerebrum. His suffering was worse at night, when he would continually walk the floor. Later mental symptoms developed, and he was sent to the East Tennessee Hospital for the Insane, where, as above stated, the patient arrived on the 31st of July, 1901. He had been treated by Dr. Miller with both mercury and iodide of potassium, and had improved. The result of the treatment was to relieve him from the severe pains in the head. Examination at the time of his reception showed marked dementia, and while there was no paralysis, there was a spastic condition of the muscles like that found in advanced cases of paralysis agitans, and he had the propulsive gait characteristic of that disease. On August 6th he gradually lost the use of himself and became unconscious, but there was no complete paralysis, but rather a more pronounced spastic condition. His temperature ranged from 103° to 105°. He lingered in this condition until the 10th of August, when he died. Autopsy twenty-four hours after death. The dura was strongly adherent to the base of the skull, with other evidences of former pachymeningitis. A minute examination could not be made of the blood vessels, as the pia, as well as the brain substance, was torn when they were taken from the calvarium. While making thin, horizontal sections of the right hemisphere at the distance of one-half an inch from the superior surface of the middle lobe, the knife passed into several lucane entirely empty; from the size of an average to a large broom straw, they penetrated an inch or more down toward the basal

ganglia. In the centrum ovale, half-way between the vertex and the corpus striatum, an area of softening was found one inch deep, and into which the middle finger could be thrust. Other portions of the brain substance to the naked eye were apparently normal. Microscopic sections were not made. The early nervous symptoms in this case, severe nocturnal headache, was evidently due to the pachymeningitis of syphilitic origin. The lucana, an area of softening, were caused by syphilitic occlusion of the long arteries that penetrate downwards and inwards from the lateral and superior surfaces of the cortex for the nourishment of the white substance of the brain. These arteries do not anastomose with any others, but their occlusion necessarily results in necrosis of the parts that they supply with blood. The history of this case teaches that the physician should be cautious in giving a favorable prognosis in nervous disease due to syphilis, for, while it is true that many severe paralyses caused by syphilitic inflammation and gummata respond brilliantly to anti-syphilitic treatment, the probability of incurable necrosis should not be lost sight of.

THE SURGICAL TREATMENT OF PAINFUL MENSTRUATION.*

By HENRY D. FRY, M. D., Washington, D. C.

Pain should not occur at the menstrual period in a healthy woman with healthy pelvic organs. This dual relationship between the general health and the generative organs must be constantly kept in mind. One or the other may be at fault, or the trouble may be with both in the same cases.

The treatment of purely medical cases does not come within the scope of this paper. In such as demand both medical and surgical care, it is important not to overlook the former. The concentration of the attention too closely to the surgical aspect of the case is often the cause of failure to give relief.

Surgical treatment carries with it the necessity of making an examination of the pelvic organs. As these sufferers are nearly always

*Original abstract of a paper read during the session of the Southern Surgical and Gynecological Society, held at Richmond, Va., November 12th, 13th, 14th, 1901.

young girls or unmarried women, the indications must be clearly manifest. The character and severity of the pain, its duration, and the condition of the patient during the inter-menstrual period, must be considered.

What results can be expected from surgical treatment? If we judge by the pessimistic statements of some men of large experience, it is nothing to be proud of. In the discussion of this subject at the last meeting of the American Gynecological Society, held in Chicago, the reflected opinions presented a gloomy picture for the women. My object in presenting this paper is to protest against that verdict rather than offer any original method. My experience has been just the opposite. Failure to give relief has been due, as a rule, to some complication the removal of which subsequently resulted in cure.

The line of treatment followed with such satisfactory results is that pointed out in the main by Dr. Gill Wylie. First, thorough dilatation of the cervical canal; then the endometrium is gone over carefully with the sharp curette; irrigation and often a second curettage; the application of pure carbolic acid; irrigation and dilatation repeated if necessary. A Wylie drainage plug as large as will readily pass is inserted into the cervical canal, and kept in position by a Smith pessary. For a number of years I was accustomed to leave the plug *in situ* six days, but following the suggestion of Dr. Wylie, I now allow it to remain from three to six weeks. I usually keep the patient in bed two or three weeks after the operation, and if no discomfort be experienced, permit her to get up and go around wearing the plug several weeks longer. I believe the use of the hard rubber plug does much to aid in the permanency of the relief obtained. It causes the formation of a cicatricial ring of tissue at the point of constriction, which ensures patulency. I have not seen any bad results follow its use. In a few cases it causes pain, and on that account must be removed sooner than the time mentioned.

I attribute the failure of those who deplore their results to the omission of some important point in the technique of the operation. For instance, they simply dilate the cervix, or dilate and eurette. Another cause of failure is the unfortunate division and sub-division of the disease into varieties; each variety being described with its appropriate method of treatment. The desire to avoid empiricism has made the subject complex and unpractical.

For all necessary purposes dysmenorrhœa can

be divided into two classes—simple and complicated. The simple comprises about 80 per cent. of the cases that come under our care, and the treatment described cures or greatly relieves three out of every four.

The conditions usually found on examination are as follows: The external genitalia are undeveloped; the vagina, cervix and uterus are small. There is stenosis of the cervical canal and endometritis. The uterus is normal in position, or one of exaggerated ante flexion; it is movable and the appendages are healthy. The accompanying endometritis is chronic in character, and due to deficient drainage of the cavum uteri in consequence of stenosis of the cervical canal. The undeveloped condition of the generative organs in young women is very common, and parallel to deficient growth of the mammary gland, and its consequent failure to perform the function of lactation.

The second class comprises the cases in which some complication exists. It may be displacement, small fibroids in the body of the uterus, or disease of the tubes or ovaries. These complications must be recognized and corrected. In a very small proportion of cases, as in cirrhotic ovaries, we are driven to produce the menopause artificially. In such cases I believe it advisable to amputate the uterus at the same time, as the subsequent reflex nervous symptoms are diminished and the period of suffering shortened.

I maintain that the surgical treatment here described as applicable to a large percentage of cases of painful menstruation is not empiricism. We must recognize and exclude cases due to constitutional causes, and must recognize and give other treatment appropriate to any complication that exists in other cases.

New Orleans Polyclinic.

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Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work.

For further information address Dr. Isadore Dyer, Secretary, New Orleans Polyclinic. Post-office Box 797, New Orleans, La.

PRESIDENTIAL ADDRESS BEFORE THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.*

By MANNING SIMONS, M. D., Charleston, S. C.,
President of the Association, etc.

I congratulate you on being granted the privilege of meeting together again, after the lapse of another year, with its many changes. It is, indeed, a pleasure to renew the friendships engendered by our meetings, and it is a great gratification to me to welcome you officially to the fourteenth annual assemblage.

I regret that my congratulations must be followed by the announcement of the great loss which we have sustained since our last meeting. On reassembling, we are pained to find vacant the places of two of our fellows—Dr. W. D. Haggard and Dr. Hunter McGuire, two of the founders of this association—the former its first, the latter its second President. They lived and moved among us, and their presence was a social and professional enjoyment. We honored them in the past by elevating them to the highest office in our gift; we honor them now by recalling their virtues and achievements.

"The night dews that fall, though in silence they weep,
Shall brighten with verdure the graves where they sleep.

And the tears which we shed, tho' in secret they roll,
Shall long keep their memories green in our soul."

Eminent in their profession, honorable and upright in their private lives, their death is an irreparable loss not only to us, not only to the communities in which they lived, but to the profession, which labors for the advancement of that branch of knowledge that has for its object the relief of human suffering. I make this announcement with the assurance that the Association will take appropriate action to honor the memories of these distinguished and lamented men.

To preside over the meetings of this Association has been to my predecessors, and is to me, an unalloyed pleasure. To the President, the function "to see that the rules of order and decorum be properly enforced in all deliberations," has been the easiest of his duties.

A careful search of our *Transactions* since the origin of the Association fails to find any questions of ethics or personal controversies—unfortunately so common in medical organizations. The expression so common among the laity, "that doctors will differ," finds no confirmation,

at least, in the personal relations of its members.

The mutual enthusiasm to promote its welfare and the consequent subjection of individual interests to the common good have constituted the unwritten code that has regulated all our sessions.

A single selfish feeling intrudes itself here, the pride felt in the position to which your partiality has called me. The honor merits and receives my most grateful acknowledgments.

The only difficult duty of the President is prescribed in the article of the by-laws requiring him to "deliver an annual address at each meeting of the Association." The solution of the problem is left to him how to evolve from his innermost consciousness what a presidential address ought to be. My predecessors have covered almost every imaginable subject in their excellent addresses, and I find myself embarrassed to know how to meet my obligations in this respect.

It seems to me, however, at the end of fourteen years of the life of this Association, pertinent to inquire whether its existence has been justified by the results of its work?

The doubts and difficulties surrounding the inception of this Association in 1887 have been most graphically described by Dr. Bedford Brown, in his admirable and interesting address at its sixth session, in New Orleans, in 1893. This address made so great an impression upon the Association that, by resolution, the Publication Committee was instructed to provide five hundred copies in pamphlet form, for distribution among the members and the author's friends. This distinguished fellow of the Association lived to see these doubts dispelled.

The Association has grown and rapidly developed to its present proportions. It has exercised a great influence on surgery in our part of the country.

When we review the state of affairs existing in the Southern States at the end of the civil war, the doubts expressed by the author of the address referred to as to the success of a special scientific association were most natural and reasonable.

In the present onward movement, and amidst the bright prospects of our Southland, as they exist to-day, few of us pause to make a retrospect of the educational status of twenty or thirty years ago. Certainly the present generation has no conception of the difficulties that have been surmounted and the trials that were

*Delivered before the fourteenth annual session, held at Richmond, Va., November 12th-14th, 1901.

undergone by their predecessors in the rehabilitation of our educational institutions, both medical and literary.

We can scarcely realize now, that for four years, from 1860 to 1865, inclusive, our educational institutions were deserted and closed. Years of valuable time were lost, and our people found themselves, in 1865, five years behind the world in mental culture. The world of letters was closed to us, and new books and new ideas, developed in the rest of the civilized world, reached us only after they had been digested and assimilated by educated and cultivated people elsewhere. The work of progress in medicine, except such as belonged to military surgery, were as a sealed book to those who resumed civil practice, and years of hard work were necessary to bring us abreast with the rest of the medical world.

From 1865 followed years of educational chaos, when the wheels of civil institutions were blocked, and the institutions and customs of the old regime were overturned. Meanwhile the vociferous cry for higher education was being sent up everywhere, and competitive examinations were the standard by which seekers for employment were measured.

All this has been changed. In looking back it seems as if it were changed by magic, rather than by the slow process of united energy, determination, and industry.

The history of our colleges in the South testifies to the energy, determination and industry of those by whom they were originated, maintained and conducted. Few of our colleges are endowed, and their success depends upon their trustees, faculty and students; yet to-day the South can well be proud of her medical institutions.

Their present standing is due, in great part, to the increased educational facilities of the country. But a few years have passed since students, who presented themselves for matriculation, had to be subjected to a preliminary examination to ascertain if they possessed sufficient education to justify their acceptance as students of one of the learned professions. To-day they present themselves with college and university diplomas as a foundation upon which to build their medical instruction.

From year to year the demand has been made for a higher standard of medical education. The two years' course was regarded as insufficient training for a degree. The Southern colleges promptly met the demand, and a three years'

course was universally adopted. Again the four years' course was deemed necessary by the colleges at the metropolitan centres, and the Southern colleges promptly met this demand.

At this time the colleges of the South are holding their position with the foremost in this country.

Doubtless these advances in the standard of medical education are due, in a great degree, to the medical societies in the various States. This Association has contributed largely to the elevated standard in the South by the stimulus it has given to ambition in individual members of the profession.

The design of this Association has been, not only to advance surgery and gynecology in the South, but to establish a school of instruction for at least two classes of members provided for by its originators.

The laws of the Association were so arranged as to embrace three distinct classes of professional men: First, the specialist, whether surgeon or gynecologist, of distinction, skill and experience; second, the general practitioner of eminence and experience, who, in addition, practiced surgery and gynecology to a limited extent; third, the rising young surgeon and gynecologist of character, talent, education and promise, but whose practical experience was limited.

This wise provision has stimulated the study of surgery and gynecology in the South to such an extent that the two last named classes of members have diminished in numbers yearly, until this Association may truly be regarded as composed almost entirely of specialists, whose work entitles them honestly and justly to be so styled.

Having to a great extent overcome the difficulties of the problem of its existence, this Association has triumphed over sectional prejudice and unpatriotic jealousies. It has become as national in its character as the American Medical Association, and extends the right hand of fellowship to our professional brethren in every part of the country.

We have the honor to number in our fellowship distinguished men from the North, East, and West, as well as the South, who have joined with us in building up this Association, of which they are a welcome and integral part.

This Association for the past fourteen years has been steadily making the surgical history of the South, and, in no small part, that of this country.

A review of its *Transactions*, constituting a

surgical library in themselves, would repay one, who has already read them, or heard the papers at their original presentation.

The history of surgical progress and improvement during these fourteen years can readily be traced in these volumes. The reader can see the narrow pathways of original investigation and work, blazed out by the pioneers and leaders, widen into the broad highways of surgical practice, now open for daily use.

We number among the fellows of this Association some of the distinguished masters of surgery and gynecology, teachers and operators, originators and investigators, whose names and work are familiar wherever enlightened surgery is practiced.

Can it not truly be said that after the short term of fourteen years, this Association has justified its existence, and that it is a living monument to its founders, who, by their ability, learning and professional attainments, contributed to its present vigorous life?

Medical societies and associations are the natural outcome of the development of the science and art of medicine and surgery; and for this reason they have multiplied in recent years to fulfil the purpose of discussing "propositions bearing on the promotion of more systematic observation and plans of operation, and of greater uniformity in the mode of publishing results, as well as for the consideration of matters on which the co-operation of corresponding societies is desired."

To the wonderful development of medicine and surgery during the nineteenth century may be traced the increase of such organizations.

Private scientific societies have originated chiefly during the past century, the demand for their existence being due to the necessity of increased organization of rapidly developing knowledge, and the desire among workers for a common ground to meet, discuss and compare results and collect facts for future generalization. The natural tendency of such societies is to become more and more specialized to keep pace with the specialties into which medicine and surgery are daily being subdivided.

The benefits to the medical profession derived from these societies have been very great, and their good influences far-reaching.

There has been a general demand for specialism in every department of life in recent years, and in medicine and surgery particularly has this demand been evident, both in the profession and among the laity. Patients now demand and require special treatment of their ail-

ments, and this requirement has been met by the division of medicine and surgery into many departments. As is usual in the development of a new idea, there is a tendency to go into extremes, and we now find even the recognized specialties undergoing subdivision in accordance with the trend of individual inclination.

It is probably an admitted proposition that general knowledge is the aggregate of special knowledge; but conversely, individual special knowledge is attained at the expense of general information. If this proposition be granted, it seems possible that the legitimate ends of specialism may be turned into narrow-mindedness and one-sidedness. It is more than probable that the greatest advance in recent years in specialism in surgery has been in the direction of perfecting technique and cultivating manual dexterity.

It is true that we have availed ourselves of the aids derived from the progress made in the collateral work of the bacteriologist and pathologist; but there seems to be a growing belief in some quarters that clinical observation is being somewhat neglected in our efforts to attain perfect technique. Accurate diagnosis naturally forms the basis upon which successful operative work must rest, and it must be admitted that skilful diagnosis depends upon extensive general knowledge. It is impossible to disregard the inter-dependence of the various systems of the economy.

Though habitual concentration upon one system must naturally influence our judicious and correct interpretation of phenomena relating to the whole, there is a growing tendency to neglect the ordinary methods of diagnosis for the more brilliant resource of exploratory incisions and operations, often of considerable magnitude, simply for diagnostic purposes.

In these days of enlightened surgery, few will question the justifiable resort to exploratory operations with diagnostic object, nor will the doubt be raised that such operations in the hands of skilled and experienced operators, under aseptic wound conditions, are comparatively free from danger. Still it must be recognized that this short cut to knowledge is not conducive to the development of the higher art of diagnosis by exclusion, which, under existing surgical custom, bids fair to become a lost art.

Acuteness in diagnosis is the result of general learning and familiarity with all the elements conducive to a true appreciation of symptomatology and pathology.

It is true that some men seem to possess in-

tuitive diagnostic art, but the safest diagnostician is he who arrives at his conclusions by process of reasoning rather than by a short cut.

The chairman of the section of Practice of Medicine of the American Medical Association, at its last meeting, has expressed somewhat this idea in these words: "Neither the physician nor the surgeon can afford to confine himself alone to his special studies. Without wishing to detract from the merits of our surgical *confreses*, the medical practitioner is compelled to witness or learn of surgical operations having been performed which would most probably not have been performed had the operator first consulted with a progressive clinician; conversely, the physician would grow less conservative as the result of more frequent consultations between himself and surgeons—a consummation to be desired."

Correct technique and deft manipulation are the common property of the surgeons of to-day. The brilliant results of modern surgery have to a great extent overshadowed the disasters that occasionally occur, and the people have become educated to accept surgical operations when proposed, even though they be of the greatest magnitude.

There is scarcely a cross roads, the whole establishment of which consists of a blacksmith shop, saw mill and grist mill, that has not a surgeon who is conversant with a correct knowledge of modern technique, and who possesses manual dexterity with the self-confidence and boldness that enable him to do most of the operations of surgery.

One is impressed with the truth of this statement by the discussion on the paper of Dr. Deaver on appendicitis, read at the last meeting of the American Medical Association. A member from Anaconda, Mont., said: "In Montana it is impossible to get Dr. Deaver or any other noted surgeon out there; it is impossible to do anything but take right hold of these cases yourself, and I promise you we do it. We find no difficulty in performing operations for appendicitis, but we do find difficulty in treating them on medical lines."

Technique and manual skill are indispensable attributes of the surgeon; but the danger of the day is their cultivation to the neglect of the knowledge of their proper and judicious application. The standard of excellence of the surgeon does not consist alone in his operative skill, but in his diagnostic acumen, his judgment in the determining of operative and non-opera-

tive cases, and his ability to correctly measure the limitations of justifiable surgery. Seven operations performed on the same patient at one sitting indicate the overshadowing of diagnostic acumen by the boldness, skill and correct technique of the operator, and his unbounded confidence in the powers of nature to withstand so shocking a procedure.

The glamor of brilliant surgical results has fired the ambition to operate, and many aspirants enter the field of surgery who borrow their equipment from their better prepared *confreses*.

There is no more danger to the community from the injudicious and unlearned administration of calomel and castor oil and in "meddlesome midwifery" than lurks in the "aseptic scalpel" in the hands of the surgeon.

It has been said, "there could be no art of healing till the earth was full of graves." "It is by shipwrecks that we learn to build ships."

It is true some surgeons are "born, not made"; but the problems of modern surgery demand more than manual dexterity or inspired knowledge. Four years' lecture and six months' post-graduate course cannot be regarded as preparation adequate to justify the position of specialist in surgery.

The present too common custom for a graduate in medicine to select a specialty, and establish himself as a specialist, does not meet the requirements of specialism of to-day. Hospital experience and a general practice of five or ten years should be a prerequisite for application with special societies. State examinations are required of all graduates in most of the States before they are granted licenses to practice as general practitioners.

Surely there should be some provision of a like kind for special examinations, to determine the qualifications of those who desire to enter upon the practice of a specialty, and particularly that of surgery and gynecology.

In these days of materialism, it would seem out of season to speak of the sentimental aspect of medicine, but medicine has certainly had its sentimental side. The times have changed, and we have changed with the times. The demands of modern medicine have, to a large extent, divested the practice of the sentiment that formerly surrounded it. It is a question to what degree specialism has turned us into the paths and methods of ordinary business.

The relations of the patient to the doctor and those of the doctor to the patient have certainly changed in conformity to the modernized meth-

ods of practice. Gratitude, respect and confidence do not express adequately the sentiments of patients to their physicians in the olden times. Their loyalty was as marked as their love of country, and their confidence as unmovable as their faith in their religion. A patient, having selected a physician, recognized in him the one individual to whom he confided as much as possible the care of himself and family.

The people, however, of the present time have been educated to appreciate the utility and necessity for specialism in medicine and surgery, and each individual has his separate doctor for his eyes, his ears, his nose, his throat, and, indeed, for every system of the economy, to whom he goes, from one to the other, as he does to his butcher, his baker, and his "candlestick maker."

Under these changed circumstances, the relations of the doctor to the patient have, in like manner, in accordance with the demands of the times, undergone a radical change.

Formerly calls made on him by his patients were binding, even at the risk of his life, health, comfort and convenience. Now the obligations that formerly devolved upon him among his clientele are shared by many others. The feeling that this changed relation is entertained by the public is most graphically portrayed by Ian MacLaren, in his pathetic description of Wm. MacLure, a doctor of the old school. His description of "through the flood," of Dr. MacLure and Sir George, the great metropolitan specialist, to the bedside of Annie Mitchell, plainly points out the self-sacrificing devotion of the doctor of the old school. "Sir George was as brave as most men, but he had never forded a Highland river in flood; and the mass of black water racing past beneath, before, behind him affected his imagination and shook his nerves." "He rose from his seat and ordered MacLure to turn back, declaring that he would be condemned utterly and eternally if he allowed himself to be drowned for any person."

"Sit ye doon," thundered MacLure, "condemned ye will be suner or later, gin ye shrink yir duty, but thro' the waters ye gang the day."

After a brilliant and successful operation, when Dr. MacLure placed the precious bag of instruments beside Sir George, he laid a check along with it, and was about to leave. "No, no," said the great man, "you have some right to call me a coward, but I will never let you count me a mean, miserly rascal," and the check fell in fifty pieces to the floor. Thus we see portrayed in this pathetic story the contrast of

the duty of the doctor of the old school with the charity of modernized medicine.

The contrast is probably harshly and somewhat unjustly drawn by the writer of the beautiful story of a doctor of the old school, but it points to a possible danger into which the specialism of to-day may be leading us. This brings me to speak of the passing of the "family doctor."

Little by little he is being shorn of his glory and usefulness. Doubtless he has been one of the most picturesque figures in society, about whom have clustered many recollections of kindness, charity, gentleness and unselfish devotion to duty and appreciation of the greatness of his mission.

As the great oak, that has withstood the vicissitudes of tempests for ages, yields to the demands of rapid transit, and landmarks around which historic recollections cluster give way to the necessities of modern improvement, so the "family doctor" of the old school is gradually yielding before the rapid advance of the continued development and improvement in the methods of medicine and surgery.

The history of Dr. Wm. MacLure, by Ian MacLaren; the noble life of the typical Virginia gentleman, Dr. Carey, as portrayed by Thos. Nelson Page, and Dr. Sevier, described by Cable in these few words, "He stood straight up in his austere pure-mindedness; his inner heart was all flesh, but his demands for the rectitude of mankind pointed out like the muzzles of cannon through the embrasures of his virtues," constitute fitting eulogies on the character and usefulness of the old-time family doctor.

In parting with him we may use the words of Sir George to MacLure, "Give's another shake of the hand, MacLure! I'm proud to have met you; you are an ornament to our profession."

In conclusion I desire to express my appreciation of the honor you have conferred upon me in having elected me to the office of President of this Association. I feel that it is the highest reward that can be conferred upon a Southern surgeon.

The operation of nephrorrhaphy dates back only to 1881, when Hahn, of Berlin, introduced the operation as a substitute for nephrectomy in the treatment of movable kidney.

Proceedings of Societies, Etc.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON ORTHOPEDIC SURGERY.

Meeting of October 16, 1901—Dr. Geo. R. Elliott, Ch'n

Infantile Paralysis Simulating Congenital Talipes Calcaneus.

Dr. A. B. Judson presented the case of a baby five months old with what at first view appeared to be left congenital talipes calcaneus. Passive motion was abnormally free, active motion was deficient. The position was that of talipes calcaneus. The history was given of a three days' sickness occurring when the child was two months old, in which there were fever, trembling and general cutaneous hyperesthesia, but no vomiting, diarrhoea or convulsions. The diagnosis of infantile paralysis was made, and will probably be confirmed by partial spontaneous recovery during the next year. The cutaneous circulation was apparently normal, and the general health of the infant was excellent. The left thigh and leg were one-half less in circumference than the right. The arms were normal. Congenital calcaneus was rare. Such a case, with the resistant tissues and lasting deformity of congenital varus, would be well worth careful study and description.

Dr. W. R. Townsend agreed with the diagnosis of infantile paralysis. He believed well marked congenital talipes calcaneus to be very rare, although he had seen such cases.

Dr. George R. Elliott asked Dr. Townsend what muscles would be affected to cause such a deformity as that presented?

Dr. Townsend replied: Gastrocnemius, soleus and plantaris.

Dr. Elliott asked Dr. Judson if the poliomyelitis was limited to the posterior group of muscles.

Dr. Judson replied that a careful electrical examination had not been made.

Dr. Henry Ling Taylor said, in reference to the statement about the rarity of congenital talipes calcaneus, that while he agreed that the severe forms were rare, the milder varieties were fairly common; they, however, usually corrected themselves without special treatment.

Crepitus in Cervical Pott's Disease.

Dr. Judson presented a case of crepitus heard in cervical Pott's disease in a woman 40 years old, accustomed to house work. Symptoms had

been present about a year. Movements of the head had caused pain of the forehead and face, called by the patient "neuralgia." She had often supported the head with her hands, and at night had needed a number of pillows carefully arranged to hold the head in a comfortable position. When she stopped work for a time she felt better, but on returning to work the trouble was increased. The deformity was marked, being partly due to a forward displacement of the axis of the head, a condition invariably present in cervical Pott's. The width of the neck posteriorly was increased. There was no abnormality of the trunk or any other part of the skeleton. She said that at one time the head was much flexed and inclined to the left. Six months ago she noticed that motion of the head in rotation was accompanied by a cracking sound. On examination the crepitus was readily heard, simulating bony crepitus, but evidently due to tendinous or muscular slipping.

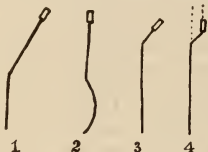
Dr. Townsend said that he could not agree with the diagnosis of cervical caries; he was inclined to consider the case one of osteo-arthritis, which diseased condition had been well described by Goldthwaite in the *Transactions of the American Orthopedic Association*, Vol. XII.

Dr. Elliott agreed with Dr. Townsend that the symptoms and objective signs were not typical of cervical caries. He would expect to find more real disability, more rigidity due to reflex spasm, in spite of the fact that frequently the symptoms or signs of caries in the adult were frequently masked. Cervical caries appearing at the age of 40 was not common, and is at that age almost invariably progressive, which did not appear true in the present case. The crepitus, too, which was elicited so markedly upon free movement of the neck, rather pointed to another disease. The word *caries sicca* he believed to be largely a pathological misnomer.

Dr. Taylor agreed with the two foregoing speakers. He thought the patient should have shown more severe symptoms and more tendency to progress were it a case of caries. The indications for treatment, however, of the osteo-arthritis and tuberculosis of the spine were the same as far as protection and support to the diseased vertebrae were concerned.

Dr. Judson expressed himself as unable to amend his diagnosis. He considered the case as a typical one of cervical Pott's disease, and recalled the symptoms in detail. He took the opportunity to call attention to an important sign of disease in this region. Figures 1 and 2

showed how the lordosis accompanying deformity in the dorsal region was unconsciously assumed by the patient for the preservation of his equilibrium. This has been well shown in the photograph exhibited by Dr. H. Gibney, at the meeting held on October 19, 1900. In cervical disease, figures 3 and 4, the equilibrium was not



seriously disturbed, but the necessity of a horizontal visual axis led to extension of the head at the occipito-atloid articulation with the characteristic forward displacement of the axis of the head, seen in figure 4, and in the patient who had been presented.

Dr. Leonard W. Ely asked if this sign was invariably present.

Dr. Judson replied that in adults it was.

Osteotomies for Correction of Bow Legs and Knock-Knees.

Dr. Homer Gibney presented six cases—and described method employed. Three of the cases shown were very marked anterior curves of tibiae entirely corrected. Tracings, photographs and notes from the records of the Hospital for Ruptured and Crippled were presented.

Dr. L. A. Weigel, of Rochester, said that he was somewhat in doubt as to what constituted a true bow leg and the proper course to pursue in a certain class of cases. An outline tracing of the leg might show an apparent bowing, while a skiagraph would demonstrate that the shafts of the leg bones were straight. He exhibited skiagraphs of two cases to illustrate. In one of the cases the deformity was corrected by osteoclasis, but the skiagraph showed that the legs were straightened by making the bones slightly crooked.

Dr. Townsend agreed with *Dr. Weigel* about straightening legs often by making them "crooked." He had found frequently that in cases where the deformity was ideally corrected the bones were actually very crooked, and his experience with radiographs had been similar to that expressed by *Dr. Weigel*.

Dr. Taylor wished to call attention to the importance of correcting inward rotation of the

tibia in cases of bow legs. There often existed an inward twist of 20° or more, and this could only be obviated by everting the lower fragments at time of operation. In the cases presented by *Dr. Gibney*, he noticed that two of the children showed a marked inward twisting of the feet. Too little attention had been given to this point by operators. Neglect to correct this rotation meant an incomplete correction of the deformity and liability of a recurrence of the bow leg. He advised breaking the fibula as well as the tibia, well loosening the fragments, twisting the foot out as much as possible. The resulting eversion would not be too great.

Dr. R. H. Sayre remarked that in one of the cases presented in photograph by *Dr. Weigel*, the thighs, as well as the legs, were bowed, and the bowing was accounted for probably by twisting of the neck of the femur as well as the lower part of the femur near the condyles. In many cases the distortion was found close to the epiphyses, while the shafts of both tibia and fibula were straight. Operation should be performed at point where deformity existed.

Coxa Vara.

Dr. Taylor presented a boy first seen by him in May, 1900, then six years old. He gave the history of having walked at the age of 11 months, and of having been lame in the left leg ever since. There was one-half inch shortening of the left leg, the trochanter was elevated one-half inch, and the head of the femur could not be felt. The symptoms pointed to coxa vara, but he had not known of any other cases of this disease beginning at such an early age. A skiagraph showed that the head of the bone was in the acetabulum, and that the neck was bent downward. There was no evidence of rachitis. The leg at present was smaller than the right; abduction and outward rotation were limited, other movements were free; shortening and elevation of the trochanter were the same. There had never been any pain.

Dr. Sayre said he should judge from the skiagraph that there had been a fracture of the neck of the femur, and the inability to secure history of traumatism did not necessarily have any weight. The child had not been seen till six years of age, and gave the history of walking at 11 months and limping. He judged that this might be a case of fracture or of epiphyseal separation.

Dr. Weigel asked if there had been epiphyseal separation, would not the action of the muscles

have tended to draw the trochanter and shaft upward, the head being retained in the acetabulum?

Dr. Sayre said that would depend on the extent of the fracture—in other words, whether it were complete or not.

Dr. Taylor said that there was a history of several falls, none of them severe or followed by symptoms of injury. It was evident that coxa vara was present, whether as the result of traumatism or malformation.

Dr. Weigel read a paper on "Skiagraph in Orthopedics," illustrating his discourse with many negatives adjusted in the X-ray stereoscope, which he used. A brief reference was made to the technic of stereoscopic skiagraphy, and the advantages over the ordinary method of producing X-ray negatives were fully explained. The technic was not difficult. He considered one of the principal difficulties in skiagraphy the proper interpretation of the negative in the stereoscope. The idea of depth was given, which was not apparent when viewing the negative alone. By reversing the negatives in the apparatus the pictures could be viewed from the opposite surface.

Dr. Weigel also presented the subject of "Fractures and Dislocations in Tubercular Joint-Disease," with illustrative skiagraphs. One of these was of a boy, who was said to have double congenital dislocation of the shoulders, which proved, on careful examination, to have been tubercular destruction of the joints, with partial dislocation. On one side an abscess cavity of large size communicated directly with the joints. In another case, involving one elbow joint and forearm, the necrotic process gradually attenuated the shafts of the radius and ulna. Eventually a complete separation of the latter bone occurred about one inch below the joint, and allowed the bones of the forearm to slide upward and backward.

One knows by experience that if one gets the endometrium and the pouch leading to the Fallopian tube into a healthy state, the Fallopian tube almost always recovers itself in a state of chronic inflammation.—*Indian Medical Record*.

Analyses, Selections, Etc.

Some Practical Modern Aspects of Gout and Goutiness.

David Walsh, M. D., Ed., Hon. Physician to Western Skin Hospital, London, W., deals with this subject (in *Medical Press and Circular*, October 16, 1901) in an interesting and instructive manner. He says:

The close connection between gout and certain skin affections is a well-recognized fact in practical medicine. The important bearing of such knowledge upon prognosis and treatment quickly becomes evident to any physician paying special attention to diseases of the skin. It is only by slow degrees, however, that he learns to fathom the mysteries of irregular gout in relation to various cutaneous troubles.

As everyone knows, the malady of gout has attracted the attention of physicians since the earliest dawn of medicine. It has furnished a group of signs and symptoms so well marked and so striking as to have stimulated the curiosity of all ages of scientific mankind. Nothing could be more graphic than some of the classical descriptions of a "fit of the gout," which presented the same features to Galen, or to Boerhaave and Sydenham, as it does to the practitioner to-day. For all that, much of the inner history of gout remains to be written.

The great modern theory of ascribing gout to the presence of uric acid in the blood was advanced by Forbes and others towards the end of the eighteenth century.* That theory has since held the field through many vicissitudes. Its greatest confirmation was the demonstration by Garrod of uric acid in the blood of gouty patients. A definite basis was thus furnished to the proposition that gout was due to a chemical poison circulating in the blood. From that point, however, the thread of investigation appears to have been lost, and we find ourselves faced with a host of conflicting theories as to the origin and the exact part played by uric acid in the gouty state.

The origin of uric acid, for instance, is in dispute, whether it is the product of tissue changes or of the decomposition of, so to speak, gout-producing food introduced into the body. Although uric acid is formed in the blood of gouty patients, its presence has not yet been satisfactorily demonstrated in the blood of

* "Treatise upon Gravel and Gout," Forbes. 1793.

healthy individuals. That it must be manufactured somewhere in the body is clear, inasmuch as in small amounts it is a normal constituent of human urine. The most rational inference appears to be that the uric acid is formed in the kidney, at any rate, while it remains within physiological limits. The ratio of uric acid to urea is inconsistent, but the fact does not prevent some physicians from attaching great importance to the ratio as revealed by analysis.

The theory of the renal origin of gout is attractive, and may be stated shortly, as follows. When, for some reason or other, the kidneys fail to excrete uric acid, it is thrown back into the circulation, where it exists, at first as a soluble quadri-urate of sodium, but later saturation of the blood leads to the formation of an insoluble bi-urate, which is deposited in the tissues, and sets up characteristic acute and chronic local changes. This view was first advanced by Bence-Jones and Roberts on the strength of chemical experimentation. It has lately been disputed by Drs. Tunnicliffe and Rosenheim,[†] who say there is no evidence as to the existence of quadri-urates either in the amorphous urinary deposits, or in the fluids of the body. Short of chemical proof of the intermediate combinations, the presence of uric acid in the blood, and of the specific uratic deposits in the tissues may be regarded as established gouty phenomena.

The theory of the renal origin of gout is supported by the frequent association of kidney disease and gout with lead poisoning. Here the order of circumstances might readily be, first, a kidney damaged by lead; secondly, a damming up of uric acid in the blood, with consequent gout; thirdly, the granular kidney so constantly associated with chronic gout, due partly to the lead and partly to irritant gouty material.

Substitute for lead any other blood-borne irritant that would check the excretory function of the kidneys, and we at once find a great variety of chemical and bacterial irritants that might be concerned in the production of gout. In the year 1890* the present writer pointed out how the general irritation of excretory organs occurred during the elimination of the gouty and other irritants from the body. This general law of excretory irritation^{||} explains the action of irritants such as metallic poisons, drugs,

[†] Lancet, June 16th, 1900.

* Medical Press and Circular, Oct. 22, 1890.

^{||} "Excretory Irritation." London: Bailliere, 1897.

and specific micro-organisms and their products circulating in the blood. In the case of gout, it gives a key to the eczema, dyspepsia, diarrhoea, bronchitis, and kidney troubles associated with that disease both in its regular and irregular forms.

The attempt to settle the pathology of gout in the chemists' laboratory, then, has not hitherto been conspicuously successful. The physician must, therefore, fall back upon such facts as he can gather from his own observation. He may conveniently divide the symptoms of gout into two groups: First, that due to uratic deposits in the tissues of joints and other internal structures; and, secondly, that in which skin, mucous membrane, kidneys, and other excretory organs are irritated by the elimination, or attempted elimination, of some toxic substance connected with gout. The second group includes the two arbitrary forms, visceral and cutaneous, into which not a few writers still divide the manifestations of irregular gout.

DIAGNOSIS.—Gout in its typical form is sharply marked off from other diseases. There is no need to detail its hereditary nature and proneness to attack males between thirty and forty years of age; its painful nocturnal onset of acute articular and periarticular inflammation, with uratic deposits, at first monarticular and usually in the great toe; its tendency to recur again and again, and in time to deform and cripple progressively; its choice of the well-to-do and full-blooded; and its association with bronchitis, asthma, eczema, dyspepsia, neuritis, gravel, kidney disease, hemorrhoids, varicose veins, and other symptomatic and degenerative troubles.

Irregular gout is less readily distinguished, but can usually be diagnosed by a careful consideration of the facts of the case.

Rheumatism, on the other hand, is prone to attack young persons; it attacks the larger joints, and, if acute, is attended with high temperature and acid sweats. In all forms, the heart is extremely liable to be affected, and the arthritis is of a shifting nature, rarely involving the entire destruction of a joint. There is no deposit of urates in the joints or elsewhere. The modern view is distinctly in favor of a specific micro-organism in rheumatism.

Rheumatoid or osteo-arthritis (or "rheumatic gout?"), may also be possibly connected with a specific microbe. It may be confused at times

with chronic gout, although in most cases a close examination will serve to distinguish the two conditions. In polyarticular rheumatoid arthritis many joints are successively involved, and the disease progresses steadily onward until the joint is disorganized; there are not the acute recurrent attacks and the remissions of gout, neither is there any deposit of urates. It is true that the rheumatoid condition may gradually supervene in joints affected with chronic gout, or that gouty deposits may take place in joints that have long been the seat of rheumatoid changes. A clear survey of all the circumstances of the case, however, including the family and personal history of the patient and of his complaint, will generally furnish ground for a diagnosis. It should be borne in mind that rheumatoid arthritis is the result of poor living and depressing influences.

In all chronic arthritic complaints a mere inspection of a joint may fail to reveal the nature of the disease, which can often be ascertained only by the most careful and skilled investigation.

TREATMENT.—The treatment of gout may be conveniently discussed under the three headings:

1. Drugs.

2. General hygiene; exercise, diet, water, etc.

3. Baths, massage, superheated air, and other external therapeutics.

1. *Drugs*.—The most valuable drug during an acute attack of gout is undoubtedly colchicum, which has so far been replaced by no product of the chemists' laboratory. It is usually combined with sulphate of magnesia, and its efficacy appears to be increased by the addition of guaiacum. Free purging with blue pill and saline aperients, such as Hunyadi Janos, or other laxatives, is an essential measure. The acute pain in the joints may be relieved by warm alkaline fomentations, or by the "A. B. C." liniment (aconite, belladonna, and chloroform) sprinkled on lint and applied to the joint under oil silk.

Between the attacks of acute gout, and in the chronic and irregular states, the best drugs are sodium salicylate, iodide of potassium, and guaiacum. Of those remedies the two first mentioned appear to increase the excretion of uric acid by stimulating the activity of the kidneys. Their good effect certainly does not result from their solvent action upon biurate of sodium deposits; nor, in spite of theoretical chemistry, is

that solvent action exercised in the body, at any rate to any considerable extent, by lithium, piperezin, lysidin, and other much-lauded uric acid solvents. At the same time those drugs, no doubt, have a valuable place in treatment.

2. *General Hygiene*.—This forms one of the most important points in the treatment of the gouty. The patient should take daily exercise, as far as possible in the open air. Golfing, cycling, tennis, bowls, riding, and shooting are all excellent, while indoors billiards offer a good excuse for sustained moderate activity. There is no need to remark that a man who lives an active life can eat and drink with safety a good deal more than one who is lazy and inactive. From the nature of his surroundings, the average town dweller combines a minimum of exertion with a full allowance of food and drink. It naturally follows that he is not able to use the fuel wherewith fashion and habit have led him to feed his bodily engine. Fortunately, it is still open to him to some extent to restore the balance of input and output by regulating the supply of fuel, both as to quantity and quality. The more one knows of modern social habits, the stronger grows the conviction that the chief error lies in quantity rather than in quality. It is not the one glass of champagne or of port that does the harm, but the three or four glasses or the bottle. Neither is it the occasional excess that works the mischief, but rather the constancy and the frequency of the indulgence. Many a man who has damaged his liver and kidneys by drinking at and between meals would indignantly resent the suggestion that he was anything but a temperate man. As with drinking so with eating. It is not the quality of the food so much as the quantity that does the harm. Three heavy meals a day is the rule rather than the exception with the well-to-do now-a-days. Meat is taken on each occasion, to say nothing of other dishes, and of a formidable array of wines, liquors, and other alcoholic stimulants. So far as the gouty are concerned, the present writer is inclined to the view that the sufferer if enfeebled is all the better for a glass of sound wine at meal times. The quality must be good, and the quantity be kept rigidly within the limit of a single glass. The permissible wine would be, say, sound dry sherry or claret at luncheon, and champagne or light port well-matured in the wood at dinner; with perhaps a "night-cap" of mellow Scotch whiskey, well-diluted with Krouenquelle, seltzer, or other pure plain or aerated

water. Malt liquors should not be allowed under any circumstances.

It should be clearly understood that although alcohol, under the foregoing precautions, may be allowed to gouty patients, yet on the whole it is likely that unless they are suffering from marked debility they would be better without alcoholic beverages. The main difficulty is often a social one, for it wants some courage for the average man to ask for plain or aerated water when a guest, say, at a friend's house or at a public dinner, or even when dining at his own expense at a hotel or restaurant. Yet water is beyond a doubt the best thing for a gouty man to drink under ordinary circumstances. Perhaps one of the surest advances hitherto made in the treatment of gout was the discovery of the solvent action of water upon uric acid. There can be little doubt that as a rule we do not drink enough water. Moreover, what we citizens drink is as a rule hard water, the influence of which upon the human constitution has never been scientifically gauged. The Londoner drinks water that is heavily charged with earthy matter, inasmuch as it contains no less than fifteen grains to the gallon of lime and magnesia salts or their equivalents.*

The influence of water with a high degree of permanent hardness upon the health of the consumer is definitely shown in some cases by dyspepsia and diarrhœa. Another malady that appears to be related to the quality of drinking water is goitre, but the subject requires further research. The opinion was at one time commonly held that hard water was concerned in the production of urinary calculi and gravel, but lately it has fallen more or less out of sight in the absence of definite proof. On the whole, it may be said that while there is no positive evidence to connect hard drinking water with gout and gravel, yet, on the other hand, there is nothing to exculpate it from the charge. The daily intake of a large amount of lime and magnesia salts into the system must throw an unnecessary stress upon the kidney by way of subsequent elimination. In that way, if in no other, hard water may possibly contribute indirectly to the causation of gout. Atheroma of blood vessels, again, is common in advanced gout, and it is worthy of consideration whether that form of calcareous degeneration may not possibly be connected with the constant drinking of water heavily charged with lime salts. At any rate,

gouty people cannot afford to take unnecessary risks, and the best drink for them is distilled water, plain or aerated, but it should be borne in mind that many of the aerated waters are made from ordinary hard drinking water. In many cases a mild alkaline natural spring water is the safest and best water for habitual use by the sufferer from regular or irregular gout.

The quantity of water consumed needs regulation as well as the quality. To drink a tumblerful of water fasting in the morning is good for almost any one, gouty or not gouty. A copious draught of water under these circumstances flushes the kidneys and assists the action of the bowels and skin. To drink tumblerful after tumblerful of water, however, at intervals throughout the day is to spoil a good thing by carrying it to excess, especially when the debauch of water is combined with low diet. A full-blooded patient placed under this system would no doubt benefit up to a point, but after that he would be more likely to down hill than to recover. Chronic gout, it cannot be too strongly insisted upon, is a disease marked in its advanced stages by debility. Such a patient requires nutritious diet, together with, in some few cases, a moderate amount of alcoholic stimulation, while all lowering measures should be adopted with caution.

The choice of a good water, then, may not improbably exert a considerable influence in the treatment of gout. It has long been accepted as a maxim that no combination of drugs can produce the medicinal effects of a natural mineral water, and some continental physicians claim excellent results from the use of Kronenquelle by the gouty. That particular water is mildly alkaline, and contains sodium, magnesium, calcium, lithium, and other bicarbonates, sodium sulphate, a small quantity of sodium chloride, with traces of iron and other salts. It has been shown by Furst that bicarbonate of sodium, when well diluted, is a solvent of uric acid, and that the bicarbonate of calcium, which in 1 per cent. solution does not dissolve uric acid, when reduced to a strength of 5 per mille, or 5 per cent., becomes almost as powerful a solvent of uric acid as the carbonate of lithium. This striking observation suggests a possible explanation of the good results reported from the use of Kronenquelle water in the uric acid diathesis.

3. *Baths*, superheated air, and other external therapeutics.

* Parkes and Kenwood "Hygiene," p. 13.

The value of the Turkish bath has long been recognized in the treatment of the gouty condition. So also has the value of a course of systematic bathing and massage at some suitable spa, where the life is simple and plain. But with Turkish baths and with spas the experience has generally been that though they often alleviate they do not cure the malady. What physician is not familiar with the story of the gouty patient who has gone in vain from spa to spa and has tried in vain drugs, massage, electricity, baths of every kind, water cures, and all other recognized or unrecognized methods in the pursuit of health?

The therapeutics of gout, however, have made a solid advance in the shape of the Tallerman superheated air treatment, invented in England some ten years ago. As most people know, one part of the body, say, an arm or a leg, is subjected to a temperature of between 200 degrees and 300 degrees. Copious sweating follows, and analysis shows that the quantity of uric acid excreted by the kidneys is greatly increased under ordinary circumstances. The extraordinary results that often attend the application of the Tallerman treatment in cases of acute or chronic gout must be seen to be believed. In one instance under the notice of the present writer a stockbroker was treated for an incipient attack of gout, from which he often suffered. The toe was red, shiny, and painful when put in the apparatus, but on the following day he was able to join a shooting party. That result will speak volumes to all who are acquainted with the ways of acute gout. In chronic and in inveterate cases the benefit is striking: movements of joints are restored and uratic deposits and bursal swellings often disappear rapidly.

There can be no doubt that heat applied according to the Tallerman method has curative results in gout that cannot be equalled or even approached by other plans of treatment.

That a patient undergoing the superheated air treatment will derive benefit from a combined course of medical treatment need hardly be added. The use of Kronenquelle water, for instance, will always be of service. Sometimes drugs will be needed, and in all cases careful attention must be paid to details of general environment of the patient. The physician, indeed, will find it necessary to investigate every detail of the case before him, and study the peculiarities of his patient to a greater extent in gout than in most of the maladies that he is

called upon to deal with in his consulting room. The most careful and conscientious attention of the physician, however, will avail little without the utmost obedience and self-control on the part of his patient.

Book Notices.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, Other than Drug-Giving, Useful in the Prevention of Disease and in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A. M., M. D., Prof. of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College; Physician to the Philadelphia Hospital, etc. *Volume III—Climatology, Health Resorts, Mineral Springs.* By F. PARKES WEBER, M. A., M. D., F. R. C. P. (Lon.), Physician to the German Hospital, Dalston; Assistant Physician North London Hospital for Consumption, etc. *With the Collaboration for America of GUY HINSDALE, A. M., M. D., Secretary of the American Climatological Association, etc. In Two Books. Book I—Principles of Climatotherapy—Ocean Voyages—Mediterranean, European, and British Health Resorts. Pp. 336; Book II—Mineral Springs, Therapeutics, etc. Illustrated with Maps. Pp. 420. 8vo. Price for the complete set, cloth, \$22.00, net.*

These are the third and fourth volumes of Cohen's *System of Physiologic Therapeutics*, whose timeliness has already been commented upon. The first part treats of the factors of climate, with their effect on physiologic functions and pathological conditions, and describes the fundamental principles that underlie the application of climates, health resorts and mineral springs in the prevention of disease, and to promote the comfort and recovery of the sick. The second part describes health resorts; and the third part discusses in detail the special climatic treatment of various diseases and different classes of patients. Book II also describes the health resorts in Africa, Asia, Australasia, and America.

In Book I, ocean voyages are first treated of with considerable detail, and their advantages and disadvantages, indications and counter-indications as a therapeutic measure are pointed out. As very little exact information on this important subject exists in an available form,

this chapter should be of great use to physicians. The subject of altitude is treated in a similarly full and definite manner, and not only are we told what classes of patients and disorders are benefited by Alpine and Rocky mountain climates, but also what classes are unsuitable for such treatment. The difference between summer and winter climates in Switzerland, and the therapeutic indications for the different seasons are discussed at length. In addition, the sea coast and inland health resorts of the Mediterranean countries, those of Continental Europe, and those of the British islands, including mountain stations of various elevations, plains, and mineral water spas, are described, with no waste of words, but with a fullness of detail unusual in medical books. Not only geographic and climatic features are pointed out, but also social and other characteristics so important in selecting a resort that shall be suitable to the tastes and means of the individual patient, as well as beneficial in his disease. Throughout this section allusion is made to the special medical uses of the various resorts described, and to the particular form of treatment for which any one is famous.

The existence of sanatoriums for special diseases, as those at seaside resorts for scrofulous and weakly children, and in various regions for consumption, nervous affections, diseases of women, and the like, are specified; and the mere lists of such places, as found in the index, are likely to prove invaluable for reference. We know none other so complete. A mere glance at the closely printed pages of the index will show how unusually full is the treatment of special resorts and their particular qualities. Like the preceding volumes, these are thoroughly scientific and eminently practical, a combination that reflects credit alike on authors and editor.

Manual of Diseases of the Eye, for Students and General Practitioners. With 275 Original Illustrations, Including 36 Colored Plates. By CHARLES H. MAY, M. D., Chief of Clinic and Instructor in Ophthalmology, Eye Department, College of Physicians and Surgeons, Medical Department, Columbia University, New York. *Second Edition, Revised.* New York: William Wood & Company. MDCCCXI. Cloth, 10mo. Pp. xiii-408.

This *Manual* is indeed one of the most complete small books on diseases of the eye that has yet been published. It is intended especially for the student and general practitioner of

medicine, and as such it seems to fill the bill exactly. The illustrations and colored plates are splendid, the type used good, and the general usefulness of the book is beyond question, the subject matter being practical, well written and up to date.

International Clinics. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Paediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and Other Topics of Interest to Students and Practitioners. *By Leading Members of the Medical Profession Throughout the World.* Edited by HENRY W. CATTELL, A. M., M. D., Philadelphia, U. S. A. *With Collaboration of* JOHN B. MURPHY, M. D., of Chicago; ALEXANDER D. BLACKADER, M. D., of Montreal; H. C. WOOD, M. D., of Philadelphia; T. M. ROTCH, M. D., of Boston; E. LANDOLT, M. D., of Paris; THOMAS G. MORTON, M. D., and CHARLES H. REED, M. D., of Philadelphia; J. W. BALLANTYNE, M. D., of Edinburgh; and JOHN HAROLD, M. D., of London. *With Regular Correspondents in Montreal, London, Paris, Leipzig and Vienna. Vol. III. Eleventh Series, 1901.* Philadelphia: J. B. Lippincott Company. 1901. Cloth. 8vo. Pp. 303. Price, \$2.00.

Particular attention is called to the fact that these volumes are not reviews, nor in any way clippings from journals, but clinical lectures, especially prepared by the foremost men, not only of the United States, but throughout the world, to give practical help to the general practitioner. The scope of the book includes the whole field of medicine. Since the publications appear once in every three months, it is easy to understand how it is that topics of live interest can be included. The book is naturally one which deals with progressive medicine and the advances along all lines are fully and fairly discussed. These *clinics* are invaluable.

Editorial.

Reforms Needed in the United States Army Medical Laws, etc.

We have been reading some of the papers by Major W. O. Owen, surgeon U. S. A., relating to the shocking manner in which the military laws are sometimes carried out by line officers. Reform in administration and changes in au-

thority are necessary. Every point made by Dr. Owen, we are assured, is abundantly sustained by facts. Dr. Owen is a Virginian and a conscientious man, striving to remove an opprobrium from the medical laws of the government, and should have the help of the nation.

The Geneva Convention was acceded to by the President on March 1st, concurred in by the Senate of the United States on March 16th, and proclaimed as to the original convention, but with reserve as to the additional articles, on July 26, 1882.

It was the evident intention of the Convention, as shown by Article III of the Additional Articles, that the word "ambulance" should be used with the French meaning—namely, a field or flying hospital or other establishment accompanying the moving army to succor the sick and wounded.

The United States has never made the Medical Department of its army independent of the transportation of the fighting force, but has continued all of the transportation of its armies in the Quartermaster's Department, thus making transportation, which is exempt from capture and from being fired upon under the Geneva Convention, a part of the transport service, which is not exempt. This is most evidently a non-compliance with a solemn treaty to which the United States is a party with thirty-four other nations.

We can but think that this is an unintentional overlooking of the facts, which will be at once corrected, now that attention has been called to them.

As to the lack of control over sanitary conditions of the army camps of assembly and instruction by the sanitary authority of the army—the Medical Department: That such condition could exist in these modern days as is shown in this paper, was not dreamed of as among the possibilities, and it shows conclusively the great need of having the duties of this important department defined by statute law. To think that of all the congressional action taken concerning this department that the only duty defined by law is that the families of officers and men shall be attended to free of charge.

It is a current opinion that medical officers and hospital corps men are always in safe places where no harm can come to them. What is the history? Go where you will, find a body of troops, and there you will find the representatives of the Medical Department. They do their

work in the danger zone of battlefields. Their work begins with the fight, but does not end when the fight is over. Again, who is it that is ever with the sick and the dying? Who is it that cares for the men in camps where epidemic disease reigns? Who is it that is exempt from attacks of typhoid fever, small-pox, cholera, and bubonic plague? Certainly not medical officers and hospital corps men. What would be said of the medical man who was so unworthy of his calling as to endeavor to leave his sick and thus quit the danger zone? The world knows the result in the camps of assembly in 1898; the medical man foretold the results that would flow, requesting that the men be removed from the zone of danger. *With what result?*

One general officer said of his chief sanitary adviser: "In the matter of the location of the troops in the camp, Col. ——— was not consulted, so far as my recollection goes, nor did I deem it necessary to consult him; there was no need of it. Any 'protest' he made received such attention as the importance of it required. Col. ———'s impression of the water was not borne out by the analysis of it." More than one man in every five of this command suffered from an attack of typhoid fever, and 714 men died of this disease in this camp, which is well known to be a water-borne disease.

We find it difficult to think that Congress, knowing these facts, shall hesitate to place this measure of the Hon. James Hay, of Madison, Va., or some similar measure defining the duties of the Army Medical Department on the statute books of the United States, so that no general officer can ever in the future have a loss of 714 men and an epidemic of this character without suffering in his own person or that of his chief sanitary adviser the penalty provided by statute law for his carelessness or lack of ability to control that which he has been appointed to command. This statute should also place all transportation, which is properly exempt, under the terms of the Geneva Convention, from being captured or being fired upon under the exclusive control of those officers who are acting under the protecting folds of this international flag of hospital protection.

Let us either comply with its terms or else abrogate the Geneva Convention.

Recent Occurrence of Tetanus After Vaccination in Camden, N. J.

There is a class of ignorant people, or fools,

known as "anti-vaccinationists," who may attempt to make capital of the sad occurrences recently in or about Camden, N. J. It seems that vaccinations have been quite numerous there this fall, and some cases of tetanus have occurred in persons recently vaccinated. This is text enough for the anti-vaccination people to preach their dangerous doctrine among the sensational ignorant people, whose educational condition does not allow them to take in the facts. The occurrence, of course, was unfortunate, but should not, for one instant, leave a doubt upon the mind of any as to the continued utility of vaccination. It ought, perhaps, lead us to be a little more careful in knowing from whom our supplies of vaccine points are received, and more careful in seeing to the antiseptic cleanliness of the parts to be vaccinated.

Dr. H. H. Davis, president of the Camden Board of Health, has issued a circular, reviewing some of the facts connected with the recent endemic of tetanus, which appeared to follow some vaccinations in his city. With doctors, in this bacteriologic day, it is not necessary to argue that the germ of the tetanus does not exist in vaccine virus. If tetanus occurs in a recently vaccinated person, without other abrasion, it is, and can only be due to the exercise of insufficient precautions for ensuring surgical cleanliness—especially in those sections where it is known that the bacilli of Nicolaier have a home life. There are wide districts of country where the germ of tetanus seems scarcely to have an existence, and, therefore, where tetanus is *practically* unknown. But there are other sections where the germs seem to be abundant, and certain districts on Long Island, along the Shrewsbury river, and about Camden, N. J., etc., are precisely parts of the country of historic renown because of the prevalence of tetanus. In fact, it sometimes becomes epidemic in such sections under given circumstances. It was so in Camden. Professor Alfred L. Loomis long years ago pointed out the dangers of the soil of these districts, so far as the contraction of lock-jaw is concerned. Dr. Benjamin Lee, secretary of the Pennsylvania State Board of Health, gives some forceful reasons to show that vaccination should go on wherever it is needed. The Camden epidemic of tetanus was purely local; cases of tetanus have recently developed there in persons *who have not been recently vaccinated*. During the same period as the Camden epidemic half a million or more persons have been vaccinated in the city of Philadelphia and its sub-

urbs; and among these, not a single case of tetanus has resulted.

The Southern Surgical and Gynecological Association

Held a good meeting in Richmond last week. Some of the papers will appear in our journal. Dr. Manning Simons, of Charleston, S. C., as president, delivered a very valuable address, which we wish all the younger members of the profession would read. Dr. W. E. B. Davis, of Birmingham, Ala., was elected president for the year 1902. A better organizer, a more ardent worker, a truer man, a more earnest student of his profession, nor a better practitioner can nowhere be found. Indeed, it is mostly due to his untiring zeal and effort that the Association was so well founded years ago. Nothing that can be said in his favor is fulsome compliment, for we have known him personally, long and well.

The social entertainments during the session in Richmond consisted in banquets and receptions and sumptuous private entertainments. The Association is mostly a body of distinguished gynecologists and surgeons residing in almost all parts of the country, including surgeons, etc., from as far North as Albany (Dr. A. Vander Veer), to remotest points in the South and west of the Mississippi. The meeting next year will be in Cincinnati, Ohio.

The Seaboard Medical Association

Will meet in Norfolk, Va., December 17th, 18th, and 19th. Dr. J. E. Sebrell, of Courtland, Va., is president. A fine programme has been announced, and every indication is that a good and profitable session will be held.

Papine.

Dr. D. S. Maddox, Coroner of Marion Co., Ohio, U. S. Examining Surgeon, etc., after a somewhat extended trial of papine (*Med. Brief*) is convinced that it is the ideal anodyne. Though derived from papaver somniferum, it is singularly free from the objections of ordinary opiates. It does not constipate, nor derange the stomach, nor cause headache, nor induce drug habit. It produces satisfactory anodyne and hypnotic results without the deleterious and pernicious after-effects of opium. It is safe, and may be given to children as well as adults.

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GASTRO-INTESTINAL THERAPY.*

By J. N. UPSHUR, M. D., Richmond, Va.,

President of the Tri-State Medical Association of the Carolinas
and Virginia, etc

An intelligent consideration of gastro-intestinal therapy requires a careful and scientific analysis of the causes and conditions present demanding relief. I am persuaded that much harm is done by the exhibition of drugs, or the selection of an improper dietary, and we find patients going from one man to another seeking relief and failing to find it, until skilled and scientific investigation as to the pathologic conditions back of it are discovered and intelligently interpreted. These may be many and complex, functional or organic in character, located in the gastro-intestinal tract, or outside of it, proximate or remote.

Digestion should be *complete, rapid, and painless*, accompanied by a feeling of refreshment and well-being, as opposed to a sense of languor, *emui*, or drowsiness, or the development of pain as it proceeds. It should be rapid enough to allow the stomach to be completely emptied, and to permit of a period of rest before the organ is again called on to perform its function. And this may be said with emphasis as regards eating during the latter hours of the day. The stomach should be empty when the man or woman retires for the night. All processes in the human organism are slowly performed during the hours of sleep, and especially is the function of digestion slow of accomplishment when recuperation of the system is going on. This predisposes to a prolongation of the act beyond a healthful period and the development of fermentation. The position of the body also, unless it be upon the right side, interferes

with the digested food and fluids leaving the stomach. The outcome of this is that the person awakes in the morning with a feeling of lethargy, not refreshed by the night's sleep, headache, pasty taste in the mouth, and furred tongue. No doubt many cases of confirmed indigestion find their inception in late suppers and the indigestible, rich, and unwholesome articles which go to make up this meal. "The composition of the contents of the stomach varies with the character of food taken."

"Digestion is divided into three stages: *In the first*, which lasts from fifteen to forty minutes, the acidity of the contents is always rising, but the hydrochloric acid, which is being secreted, enters into combination with the salts and proteids of the food, so that no free hydrochloric acid can be detected. Sometimes lactic acid may be detected; it may be contained in the food itself, or arise from the action of microorganisms on it. *In the second stage*, hydrochloric acid is still secreted, and the total acidity of the contents continues to rise, and now free hydrochloric acid can be detected, more being secreted than can combine with the proteids at once. This checks the fermentative action of the lactic acid, which soon disappears. *The third stage* follows after the maximum acidity has been attained, much of the contents of the stomach have passed through the pyloric orifice. In this last stage the hydrochloric acid, combined with proteids, is diminished in quantity; the total acidity falls, while there is a much larger proportion of hydrochloric acid present." (Gillespie.)

The therapy for the relief of many kinds of stomach and intestinal disorders resolves itself for consideration into the variety of digestive disturbance, and the appropriate remedy for relief—first, by diet; second, by drugs; third, by mechanical means; fourth, by improvement of environment, proper exercise, or complete rest—remembering always that the indication for a successful therapy has as its foundation the

* Read at the thirty-second annual meeting of the Medical Society of Virginia, at Lynchburg Va., November 5-7, 1901.

discovery of the true cause of the stomach or intestinal disorder.

It is unfortunately true that very often when the sufferer applies for relief, either no diagnosis is made or it is superficial or erroneous. Either digestive disorder is not discovered, or if its existence is appreciated, a prescription is given which does not fulfill the indications; and the next time the patient appears unrelieved another clumsy guess is made, and if relief comes it is by accident. I have recently had under my care a man of over weight, who complained of dizziness, languor, disinclination to exertion, constipation, colorless stools if the bowels did move, breath foul, tongue coated; diagnosis by my predecessor, "threatened apoplexy." The whole group of symptoms points to chronic gastric catarrh, and relief must come in cases of this nature by relief of the stomach disorder.

In digestive disorder, functional in character, and which forms so large a proportion of all the cases that come under our observation, there are many symptoms in common with the disturbance of the digestive function when an organic lesion, dilatation, displacement, mucous abrasion, ulcer, or cancer exist, an important point of distinction is, that when functional, quicker response to remedies is found. When pain, eructations, lump in the throat, or uncomfortable sense of distention after eating exists, the common condition for which we have to prescribe ordinarily, and which usually is due to excess of lactic and butyric acids, the exhibition of a mercurial purgative, followed by dilute muriatic acid and strychnine, and careful regulation of the diet, prohibiting sweets and vegetable acids, and appropriate rest after eating, will usually suffice to effect a cure. But if these symptoms have existed for any length of time, nothing should be done until the patient has been given a test meal, and a careful analysis made. In this way only can a correct idea of existing conditions be obtained, and a true explanation of the pain, eructations, etc. It is very evident that a condition of hyperchlorhydria requires very different management from a condition where hydrochloric acid is deficient in quantity, and butyric and lactic acids excessive. Microscopic examination, too, will reveal the fact of the existence or non-existence of any organic lesion.

It is not an uncommon experience to find stomach disorders existing in women suffering from uterine or ovarian trouble, and an essential to cure in these cases is to remove the con-

dition from which the stomach trouble is reflex and with which it sympathizes. Errors in dress in women are often responsible for serious digestive disturbance—the "corset liver," described in the text-books, with its fibrous band from pressure by this iniquity in dress, is a familiar fact. Perversion in the shape of the stomach, finding its climax in one of the worst forms of stomach dilatation (gastroectasia), or low displacement of the viscus (gastroptosis), due to tight lacing, or too great weight in the skirts.

In the so-called "nervous dyspepsias" the indication for treatment is the removal of the nervous strain and tension by rest, recreation and total change of environment. The nerve force, which should be engaged in the act of digestion, has been diverted in a different direction; the motive power of the machine has been crippled. Professional and business cares must be laid aside, and the patient should give the human machine time for repair and recuperation. Without this, any and every therapeutic process must prove of only transient benefit. The exhibition of such drugs should be made as will tone up the nervous system, and thereby quicken peristalsis, lessening the time of digestion, making the admixture with the gastric juices more complete and efficient, and the removal from the stomach of that portion of the food destined for intestinal digestion and assimilation more prompt, thereby lessening the chance of fermentative action in the food which has undergone solution in the stomach. Pepsin and other digestive ferments in various forms are much used and have acquired an undeserved reputation. It is not reasonable to suppose that benefit can accrue from their exhibition, either when the peristalsis is insufficient for their perfect admixture with the food, or that in the quantities in which they are administered there is sufficient to act on the amount of material in the stomach awaiting digestion. The bitter tonics only do good by stimulating the appetite, but even in simple atony of the stomach the good is minimum, and we have all had cases of this sort with absolute loss of appetite, debility and emaciation, in which administration of drug after drug failing in results has reduced us almost to despair.

An advance has been made in the treatment of these cases by the use of the stomach tube. A quart of warm salt water is introduced and drawn off to remove the mucous glaze from the mucous membrane of the stomach; it should be warm enough to stimulate the vascular supply

of the stomach. A quart of warm water then has an ounce of tincture of gentian, or some simple bitter tonic added to it and introduced through the tube into the stomach; by depressing the funnel it is run back and forth through the stomach several times, bringing it in this way intimately into contact with the entire mucous coat of the stomach; it is then drawn off. This should be done daily, and the result will be an improvement in appetite, the digestion and assimilation of food. A soluble tablet of gr. 1-20 of strychnia may be given three times a day, and as strong a current of faradic electricity as can be borne, used as an adjuvant, placing a large, broad electrode over the epigastrium, and one over the cervical region, or if necessary, an intra-gastric electrode may be used. *As to diet*, in these cases, it should be as liberal and nutritious as the patient can digest and assimilate. The patient should be weighed at the beginning of treatment, and from time to time, in order to determine what progress has been made in recuperation. If mucous abrasion be the cause of trouble, medication is most efficient when applied by means of the stomach tube, first by simple washing with hot normal saline solution, and then introducing through the tube the drug in solution that we wish to apply to promote healing and relieve pain. A very nice method is that I have seen used in the office of Dr. Hemmeter. He uses a double tube; one side is attached to the nozzle of an atomizing tube, such as is used by the specialists in throat and nose work—the bottle containing glymol, or liquid albolene, or liquid vaseline, in which is incorporated the drug desired, atropine, silver nitrate, etc. The patient holds the atomizing bottle with the clip depressed, allowing vapor to fill the stomach, and the excess comes away through the other side of the tube. Of course, when nitrate of silver is used, the preliminary washing is done by simple sterile water, as the salt solution is incompatible.

In ulcer of the stomach, all food by the mouth should be prohibited, and the patient nourished by the rectum as long as it can be tolerated; a little tincture of opium added to the enema will increase the tolerance of the bowel. This puts the stomach at rest, and enables us to satisfactorily exhibit appropriate drugs. I have found no agent better than silver nitrate, assisted by complete and absolute rest in bed. This may be given by mouth in solution, or it may be applied by means of the tube as indicated in what I have said above on the therapy of mucous abra-

sion. I am strongly inclined to the opinion that systematic lavage in these cases with an antiseptic solution will tend to repair the ulcer. When the rectum becomes intolerant and nourishment has to be given by the mouth, it should be liquid, and consist entirely of milk, lime water and white of egg, meat juices, or broths, given in small quantities and frequently repeated. Thirst may be controlled by bits of crushed ice, and the patient's strength sustained by full doses of strychnia—no alcohol being given if avoidable.

In cancer of the stomach, little can be done except to make the patient as comfortable as possible by means of anodynes. Lavage is not a feasible procedure; there is danger of breaking down of tissue and alarming and dangerous hæmorrhage. But the tube may be used as a means of diagnosis, remembering that excess of hydrochloric acid is found in ulcer, and lactic acid in cancer.

A common condition existing as a result of ulcer or cancer in *chronic gastric catarrh*. But we see the same pathologic condition present when the patient has neither ulcer nor cancer. Catarrh of the stomach may be induced by improper diet, crowding the stomach beyond its capacity, food too hot and stimulating from excessive condiments. It is important that chronic catarrh of the stomach be promptly relieved. If allowed to run on, a hyperplasia is developed between the muscular and mucous layers, resulting in thickening, subsequent contraction, with destruction of the peptic glands.

Fermentation after eating, and the evolution of large quantities of flatus causes in time *gastric dilatation*, and partial or complete paresis of the muscular coat of the stomach; so that the food is so slow in passing out of the stomach, and its digestion so imperfect that it develops toxins, which poison the nervous system and give rise to a train of symptoms both intractable and distressing to the patient. But gastric dilatation results from many other causes, not unfrequently pressure on the pyloric end of the stomach by an enlarged liver, by the gall bladder distended with gall-stones, carcinoma of the pylorus contracting the orifice to such an extent as to preclude the exit of food.

The opinion has been prevalent until very recently that gastric dilatation is always incurable, and this opinion is in a measure correct—especially when the dilatation is caused by any mechanical obstruction at the pylorus; but when due to a chronic gastritis, before it has gone on

to a condition of gastric cirrhosis, or when it has resulted in a lithæmic subject as the consequence of excessive acidity and evolution of flatus, which, by ordinary means, cannot be overcome. Under appropriate therapy this variety can be cured, for so soon as the evolution of gas is stopped and remedies used which will restore tone to the mucous and muscular coats of the stomach, digestion becomes prompt, painless and complete.

A lithæmic indigestion, such as I have been describing, can be brought on in a gouty subject by indiscretion in diet—too much red meat, excess of sweets and acids, acid fruits and vegetables, such as peaches, grapes and tomatoes—and is attended with indescribable suffering, and is hard to relieve by any ordinary means.

The case of a physician came under my observation about a year ago. He was of a very lithæmic tendency, had the history of a number of attacks of gout in the stomach and intestines, recurring over a period of ten years. He was a man of simple habits, usually moderate in his diet, and almost a total abstainer, of nervous temperament. For a number of years the exactions of a large clientele had told on his nervous system. After being unusually well all summer, he was imprudent during the latter part of the summer in eating very freely of tomatoes and grapes. About the middle of October he began to suffer with indigestion, manifesting itself by a burning pain in the stomach, coming on about two or three hours after eating, and increasing in severity in spite of a constantly increasing rigidity in diet, cutting off first one article of food and then another. His strength began to suffer, and his nervous system to break down. The amount of flatus in the stomach and bowels constantly increased. He could not walk up stairs or make any exertion without getting out of breath. A toxæmia developed to such a degree that when he sat down by the bedside of a patient he would drop to sleep. The distress in the stomach was always relieved temporarily by taking food. The most intense suffering was in the evening about 6 P. M. When he retired at night great volumes of gas would pour off from the stomach and bowels. He had not had a normal moulded stool for more than a year. He dropped into a troubled sleep, haunted by nightmare or distressing dreams, awakened four or five nights in the week always at 2 A. M., by the eructation into the mouth of fluid so acrid as to burn and sting the mouth and throat and put the teeth on edge. He was forced to get up,

and, without any effort at vomiting—simply by regurgitation—quite a half gallon of yellow acid fluid would pour out of his stomach. After this relief would come, and he would drop into a quiet, refreshing sleep. This condition of things continued until the middle of December, when he was compelled to place himself under the care of a physician.

A test meal showed the amount of hydrochloric acid reduced to a minimum, and large excess of butyric and lactic acids, and deficiency of rennin. Farther examination also showed a dilatation of the stomach of five inches above normal, and that an ordinary meal would remain in the stomach with no progress in digestion, except solution, for fifteen hours, putrefying and poisoning his system by the absorbed toxins. The nervous debility was extreme, and muscular weakness so pronounced that his knees trembled under him when he attempted to walk. Strange to say, he rarely suffered with headache. The whole matter was an absolute breakdown from long-continued nervous strain and over-work. To relieve this grave condition absolute rest from all work was insisted on. Free lavage twice daily was ordered—normal salt solution being used, and a half gallon of sterile water containing an ounce of borolyptol. Before the lavage at 10 P. M. the tube was introduced and all food remaining in the stomach was removed, and the stomach washed until the water returned perfectly clean, sometimes two and a half gallons of water being used. This gave the stomach perfect rest for at least eight hours. The sleep, which before had been so disturbed, was as sweet and refreshing as an infant's; the development of gas in the stomach and bowels ceased in forty-eight hours. The diet was liberal, but nutritious, sweets and acids being prohibited, except wine jelly, baked custard, and roasted apples. The white meat of fowls was allowed, and a little very tender ham, roasted white potato, cauliflower and rice, as vegetables. No tea, coffee, or alcohol was allowed, water was also interdicted, because of its weight, and thirst, which, in the beginning, was most distressing, was relieved by bits of cracked ice. Hot milk was allowed *ad libitum*, and cocoa (Phillip's digestible). In the way of medicine, strychnine, dilute muriatic acid, *fld. ext. condurange*, and *elix. gentian* were taken for three weeks, and then strychnine, gr. 1-20, three times a day continuously until about twenty grains had been taken, with never a manifestation of its physiological action. Para-

dism was also used as strong as it could be borne. The negative pole, a large, broad electrode over the epigastrium, and the positive pole at the back of the neck. If the exigencies of the case demand it, an intra-gastric electrode may be used. This patient was also made to lie down for half an hour after each meal on the right side, so that all fluid in the stomach might drain out. After this treatment had been continued for six weeks, the patient was able to begin moderately to resume his work, and at the end of a year reports himself as better than for a very long time, having gained in flesh and strength.

But in these cases use of the tube has to be continued almost indefinitely. Sometimes days and even weeks pass without it being necessary to resort to it, but prudence teaches that any indication of digestive disturbance must be promptly met by free lavage.

I wish to emphasize the value of strychnine; in my experience it is worth all other drugs put together, but must be given in full doses, and for a long time to obtain its full benefit. In the relief of intractable cases of gastric dilatation, the physician may call to his aid the skill of the surgeon, and an operation be performed with the object of reducing the stomach to its normal size. This is a simple procedure, and consists in folding the viscus upon itself until it is reduced to normal dimensions, and quilting in the stitches along its greater curvature: the result in many cases is very gratifying.

Before leaving this branch of the subject I would enter most earnest protest against the practice of administering bicarb. soda for the relief of gastric acidity, as is so frequently done, palliating the trouble for a time, but aggravating the trouble as a secondary result.

Intimately associated with gastric disorders are digestive disorders in the intestinal canal, especially in the duodenum; but the process of digestion here is much more complex than in the stomach, because more digestive juices enter into intestinal digestion, and any impairment of secretion of bile, pancreatic juice or intestinal juice contributing to digestive disorder. Imperfect stomacic digestion affects the process, the fluids entering the duodenum being so acid as to neutralize the essential alkaline reaction, and intestinal fermentation and diarrhoea result. Pain comes two or three hours after eating, with a sense of weight and distention, located in the lower epigastrium, or right lower hypochondrium. It is even more important to

determine in this form of indigestion the location and nature of the cause. In many cases of chronic diarrhoea, lavage, relieving the hyperacidity or fermentation in the stomach, completely cures the diarrhoea. Investigation of the duodenum is a matter of modern accomplishment and a test meal for intestinal indigestion to determine where the error is located, is important; also washing of intestinal contents. The evacuations of twenty-four hours are placed in a sieve designed for the purpose, and placed under a stream of running water. The articles of food disagreeing and irritant are found remaining after all thoroughly digested food in the form of faecal matter has been washed out, and we are enabled by means of diet scientifically to regulate the intestinal digestive process. (I am unable to speak from personal experience of these methods of investigation, but would refer you to Hemmeter's recent work on Intestinal Diseases.)

In the matter of drugs, selection must depend on the factor at fault. I have already indicated the remedy when the trouble is traceable to defective stomach digestion. Sodium phosphate I have found very useful in intestinal catarrhs; it should be given in hot water. Arsenic in some form, and the bi-chloride of mercury in some bitter tonic, I have found of advantage, not forgetting the liberal nervous supply of the intestine, and giving freely, nux vomica or strychnine, long continued. It is not within the prerogative of this paper to discuss the maladies of the lower bowel, but in passing I would call attention to the value of free intestinal lavage.

In conclusion, a word on the technique of the stomach tube: In my experience tolerance may be soon established, and the patient taught to do the washing for himself. I believe the best time for the washing is just before retiring, that the stomach may be empty during the hours of sleep, and being perfectly at rest, may be able to recuperate much more efficiently. When the throat is very irritable and intolerant, it may be sprayed with a 4 per cent. solution of cocaine, but I think that if a little patience and skill is exercised by the operator, this will rarely be necessary. The tube should be dipped into warm water or normal salt solution and passed on the left side of the mouth, thus avoiding the tip of the epiglottis and minimizing the tendency to gag. By assuring the patient that it will not hurt him, and instructing him to take a deep breath and swallow, the tube may be rapidly passed into the stomach, a little gas es-

caping when it reaches that viscus. The exertion of a little will power by the patient, and breathing regularly and deeply, will make the process of lavage very simple. On withdrawal the tube should be thoroughly cleansed inside and out. I am very much opposed to the use of the tube with the bulb in the centre; it causes too much suction, and runs the risk of injury to the mucous membrane of the stomach by drawing it into the eye of the tube, and, besides, it is more uncleanly. The larger the tube that can be passed the better, as the muscles of the œsophagus grasp it more readily, and thus facilitate its passage to the stomach.

Contra-indications for the use of the tube, are in thoracic aneurism, serious heart disease, advanced carcinoma of the stomach, or any debilitating disease in which there is a tendency to syncope. It must be remembered also that sometimes the early use of the tube is attended with a good deal of nervous shock. Under this condition great care should be exercised, not persisting in the washing until tolerance shall be established.

DISCUSSION.

Dr. W. L. Robinson, Danville, Va.: There is no question in which I am more interested than in gastro-intestinal indigestion. Ferments and toxins, with their resultant reflex nervous troubles, give us as much trouble as any other series of disturbances with which we have to contend. When we take into consideration the catarrhal condition of the stomach and duodenum, the stenosis of the bile duct, and the distension of the intestines from the accumulation of gases, the production of the toxins by the destruction of the antiseptics and ferments, and the consequent headaches, lassitude, and general disturbances, we should look with serious consideration upon the pathological condition which needs connection. I did not hear the first part of *Dr. Upshur's* paper, and I regret very much my absence; but I was deeply interested in the latter part, which I did hear. In the first place, he dealt with the therapy of this condition, and then the treatment. There is little to add to his therapy, and but little to add to his remedies, save some suggestions. We find the pathological condition of the stomach one of acid fermentation and a catarrhal condition of the mucous lining. But I think we should look for some simpler mode of correction of this condition than the use of the stomach tube to wash out the stomach. In the first place, we find

very frequently a condition of reflex neurosis. We find eructations, distension from gases—a condition far beyond the control of patients. They are averse to the use of the stomach tube; it gags them, and they don't like to use it. I find more satisfaction in giving hot water, bicarbonate of soda, or what I would prefer, and would like to suggest, Sancerre salts, made in Texas, from a well. When you have a stomach involved in a catarrhal condition you will find, instead of a dilated stomach, almost a tube. If you will fill such a stomach with hot water and an alkali those substances will pass out through the intestinal canal, and you will not only get the benefit that will accrue from washing out the stomach, but you will get, in addition, the good result of the digestive action of the alkali.

There is something beside that we are very apt to lose sight of, and that is, we forget to use the old established remedies in our search for new ones. Nothing has given me so much satisfaction and such good results as hot water. The first indication I had of the good of this remedy was in my own family some ten years ago, when my mother-in-law suffered from paralysis, the result of indigestion, that did not admit of sleep, that admitted of no alimentation of any sort. She was on her bed when I took her to the hot baths of Virginia, and submitted her to hot baths over the region of the gall duct, stomach, duodenum and intestines. In a remarkably short time she was at the dining room table, eating pretty much what she wanted, without any trouble. I have ever since, always in such cases, poured from six to ten gallons of hot water over these regions, and relief has come from improvement of the faulty circulation in these parts.

Dr. G. W. Drake, Hollins, Va.: I want to endorse this very valuable paper in nearly every particular, especially what it has to say with reference to the use of strychnia. I don't remember how long ago it was that I gave up the use of digestive ferments when used without strychnia. I never administer pepsin, amylopsia, or even hydrochloric acid now without the use of strychnia. I believe that these remedies, in the small quantities that are used, have very little to do with digestion in the stomach. We know that pepsin, which digests food in the stomach—and the same may be said of all the other digestive ferments—is not secreted in full quantities all at once, and lies there and waits for the food; but it is secreted little by little

during the process of digestion. Therefore, when I do give these remedies, I believe in giving my digestive enzymes in tablet form. This is a very objectionable form of administration, generally because they dissolve so slowly. But my object is that they may dissolve slowly, and that is what we want in accordance with nature. During that stimulation we have aiding it the natural secretion of the enzyme, and we imitate nature in that way. In regard to the stomach tube, I don't think there has ever been an instrument invented in the history of therapeutics that has done more good for humanity. The more you use it the better you like it, until you become to regard it as a kind of cure-all. If I get a case of chronic indigestion, one that has been to a good many doctors who have done him no good, I ask this question: "Did he use the stomach-tube?" If he did not, I have the advantage of the other doctor; and if he did use it, then I say I can't do any more than that.

Dr. J. N. Upshur, in closing, said: I shall first say a few words in regard to stomach-tubes, and shall then take up the points made by the doctors who dissented my paper. I don't mean to be dogmatic, but in my opinion some of these tubes are not worth the rubber out of which they are made. This tube, for instance, has two serious faults. One is that it has this bulb, which is very objectionable, for two reasons: You press the bulb to hasten the flow, and by the great suction produced you run great danger of injuring the mucous membrane of the stomach. I always want a tube constructed without a bulb, perfectly smooth, and slightly rounded at the end, and with an eye a little above the end. You can produce sufficient suction to cause the flow by simply pressing with the fingers on the walls of the tube, or by slightly withdrawing the tube, and then slowly pushing it back again. Another objection to the use of the tube with a bulb is the lack of cleanliness. These tubes should always be cleansed by rinsing them in hot water, and running hot water through them. In running water through a tube with a bulb the water does not come in contact with the sides of the tube, thus leaving the tube uncleansed, with the risk of infecting the patient. The second radical objection to this tube is the funnel on the end; it is entirely too small, allowing the water to escape and run all over the operator. I use a perfectly straight tube, which has a funnel that will hold a quart, and is especially desira-

ble when the patient does his own washing out (which is very essential), for he can then measure the amount of water he uses. I prefer the Hemmeter tube, which is after the order of the tube just described.

In regard to the patient's aversion to the tube, if you can keep the confidence of the patient and persuade him that it is not going to hurt him, and simply instruct him to push the tube in very gently and gradually, and to breathe deeply, and to swallow as he introduces it, you can very soon overcome this aversion and prevent gagging, and in a very short time you can teach the patient how to use it himself. It is a very simple procedure, that can be used by the country practitioner as well as by the city practitioner.

Whenever there is any very great sensitiveness of the throat, which produces marked gagging, I touch the throat with cocaine, which generally overcomes this, although sometimes perfectly trained patients will gag. All the doctor has to do is to order a tube for each case (for I never use a tube for but one patient).

In selecting a tube, it is well to get as large an one as can be swallowed readily, as the larger the tube the better the irrigation.

When necessary to use the tube at the office you have to use it whenever you can; but when the patient has acquired the ability to use it himself the best time to use it is at bedtime, so that he may have complete rest afterwards. By the use of it the headache, lassitude, foul taste in the mouth, and all the attendant disturbances are removed, and the patient's condition is very much improved, though he will very often have to continue the use of the tube at intervals for a long time.

210 W. Grace Street.

TREATMENT OF INSOMNIA BY HEDONAL.

By G. C. H. MEIER, M. D., New York city.

Many physicians will recollect the time when the drugs at our disposal for relieving insomnia consisted of chloral, the bromides, and opium. Of these chloral was the only one that could properly be called a pure hypnotic—that is, a drug producing normal sleep by means of a direct influence upon the nerve centres. Chloral, however, lacks one of the qualities which should be possessed by a hypnotic intended for general use, and that is the element of safety. The literature contains numerous cases in which

its administration has given rise to alarming symptoms, and even to death. Among these are to be found very prominent personages. Fatal results have been chiefly attributable to its depressing action upon the heart, which is sometimes pronounced even after comparatively small doses. Besides, there is a constant risk in cases of chronic insomnia of inducing habituation.

The bromides are to be regarded as mild nerve sedatives rather than hypnotics; they allay nervous excitement and irritability, and thereby secondarily promote sleep. Morphine acts as an hypnotic by reason of its general narcotic influence, and does not induce natural sleep, but rather a condition of stupor. While chloral, therefore, was the sole representative of the class of pure hypnotics ten year ago or more, this group of drugs has had constant accessions through the advances made in modern chemistry. Among the most prominent of these may be mentioned trional, sulfonal, paraldehyde, and chloralamid.

Probably sulfonal and trional have been more extensively employed than any of the others, especially the latter. Both of these are excellent hypnotics in all types of insomnia except those in which sleep is prevented by severe physical pains. Trional acts somewhat more promptly than sulfonal, and has a less tendency to produce after-effects. Such effects, however, are quite rare, if the drugs are properly administered, dissolved in some hot fluid, as tea, milk, bouillon, or plain water. If employed continuously for some time it is of great importance that the bowels should be regulated by laxatives, and it is further recommended that some alkaline water be drank during their protracted use, in order to counteract any diminution of the alkalinity of the blood, which has been said to occur in rare instances.

Paraldehyde, although a good hypnotic, has the disadvantage of having a very unpleasant taste, and it also acts as a respiratory depressant. Habituation from its use has also been reported. Chloralamid is less reliable in its hypnotic action than trional or sulfonal, and furthermore shares some of the unpleasant effects of chloral, although to a much less degree. In many instances, however, chloralamid is a very sleepable hypnotic in the lighter forms of sleeplessness or in alternation with the other drugs referred to.

A still more recent hypnotic is *hedonal*, which

is methylpropylcarbinolurethane. This drug possesses one very important advantage over all the other hypnotics mentioned—namely, its perfect safety, which is due to the fact that it is completely oxidized in the system, the products being water and carbonic acid. For this reason the occurrence of cumulative effects or habituation is entirely excluded.

From what I have been able to learn only three reports have appeared on this drug by American authors (H. Fairchild, W. H. Walling, A. E. Brownrigg), although the remedy has, however, been sufficiently tested in some of the leading neurological clinics and asylums of Germany and Austria to permit of deductions as to its scope of utility. Among these the most complete studies have been made in the clinics of Professors v. Krafft-Ebing, Vienna; Eulenburg, Berlin; Mendel, Berlin; v. Koranyi, Buda Pest, and Obersteiner, Doebing. It may be of interest to briefly refer to these. In Eulenburg's clinic the most satisfactory results were observed in the insomnia of neurasthenic persons, of which a considerable number were treated. The conditions in which it proved most successful in v. Krafft-Ebing's clinic were neurasthenia, hysteria, and sleeplessness from mental overexertion, and the observations made in v. Koranyi's clinic practically correspond to these. In Mendel's clinic cases of sleeplessness in the course of functional diseases of the nervous system, such as hysteria, neurasthenia, and hypochondriasis, were most benefited. Obersteiner is particularly impressed with *hedonal* in cases in which it is necessary to alternate with different hypnotics, while, according to the experiments made in Professor Riegel's clinic, the drug is generally indicated in the various forms of sleeplessness unattended with pains. The observations made in Professor Amminhaus' clinic, Fricburg, were somewhat less commendatory, its use being reserved for exceptional cases as a substitute for other hypnotics, which are regarded by the author as more reliable.

From all these reports it may be concluded that *hedonal* has the great advantage of being a perfectly innocuous hypnotic, this being due to the fact that it is completely split up in the organism into carbonic acid water and a small amount of urea. Being a derivative of urethane, it was at first thought that the new remedy might share the diuretic action of the former, but actual experience has shown that this

is not the case. Although in very large doses hedonal sometimes exerts a diuretic effect, this is not observed in the majority of instances under the ordinary dosage, and when it does occur the patient is said to readily fall asleep again. After-effects have been noticed only in rare instances, and these have been of only a slight character. Thus, for instance, in patients with gastric irritability, slight nausea and vomiting have been observed, but in so few instances that the drug cannot be said to exert any disturbing effect upon the stomach. The fact that hedonal is completely oxidized in the system of itself accounts for the absence of cumulative effects, such as not infrequently occur after the use of other hypnotics. For the same reason, habituation can be practically excluded. As is the case with other hypnotics, it may be necessary to increase the dose after hedonal has been given for some time, but after it is discontinued for a short period the original dose generally is as efficient as before.

Whether hedonal will prove of value in sleeplessness due to mental affections is still a moot question, and the testimony on this point in the literature is too conflicting to allow of a definite conclusion. According to a number of alienists it has given good service even in cases of insomnia accompanied with mental excitement; but judging from the literature as a whole, it cannot be regarded as a reliable remedy for this purpose, except, perhaps, when given in alternation with other and more powerful hypnotics.

Although my experience with hedonal has not been extensive, I have thought it of interest to place on record a number of cases of which I made notes.

Case I.—Mrs. H. F., aged 59; had been under treatment for nervous prostration and insomnia. Various hypnotics had been tried with variable results. The bromides at first proved efficient, but after a while failed to afford sleep, and chloral was not resorted to on account of the general debility of the patient. Hedonal was prescribed in 15-grain doses in wafers at bedtime, with the result of producing a refreshing sleep of four to six hours' duration. No after-effects on awakening in the morning were complained of, and there seemed to be no necessity to increase the dose. Under the use of tonics and attention to the diet the patient was gradually able to do without a hypnotic, and the withdrawal of hedonal left behind no craving for its use.

Case II.—Mr. H. T., aged 30 years; developed persistent insomnia during the third week of typhoid fever. For the relief of this symptom hedonal was administered in the dose of ten grains, repeated in an hour, and was followed by a good night's rest without any unpleasant after-effects. The sleep closely resembled the normal, and the patient claimed to be greatly refreshed. No effect upon the pulse or respiration was noted.

Case III.—Miss C. H., aged 20, seamstress; complained of dyspeptic disorders and marked constipation, with inability to obtain sufficient sleep at night. She was anemic and nervous, and I therefore prescribed a chalybeate with strychnia, also regulating the diet and relieving the constipation with extract of cascara. For the sleeplessness I recommended a foot-bath at night, and also gave hedonal in 15-grain doses in a wafer on a few occasions when the insomnia was particularly aggravated. She assured me that the drug always gave her refreshing sleep until morning, and did not interfere with her digestion.

Case IV.—H. R., aged 27; suffered from insomnia due to business worries. Hedonal in 15-grain doses at bedtime acted very satisfactorily, but, as is usual in such cases, the patient soon tired of it, and it was discontinued. Other hypnotics had been tried with equally transient results.

Case V.—C. M., aged 60; had been under treatment for locomotor ataxia. He complained of obstinate insomnia and restlessness, due chiefly to mental excitement. Hedonal was used here in 15-grain doses in alternation with trional. It seemed to act as well as the latter, but on a few occasions the patient had to get up to pass his water. This, however, did not materially interfere with his night rest, and the hedonal had the advantage over trional of not leaving behind any drowsiness on the following day. For the sake of experiment hedonal was used during sleeplessness attending his attacks of pain, and here it proved completely ineffective.

Case VI.—K. M., aged 40; stated that while he felt tired at night he was unable to sleep after he laid down. The patient was a hard worker, and required rest and tonics rather than hypnotics. Being persuaded of the safety of hedonal, however, I prescribed it in 10-grain doses for a number of weeks, during which time the patient professed to have slept much better. As his health improved I lengthened the intervals between its administration, and found that

after its withdrawal the patient manifested no craving for the drug.

Case VII.—J. L., aged 14 years; was convalescing from an attack of scarlet fever. He complained of much itching of the skin, which prevented him from sleeping. Hedonal was administered in doses of 10 grains, and as it failed to act, this dose was repeated at the end of two hours. The patient then fell asleep, but was soon aroused by the itching, and after this was relieved by local applications the insomnia vanished.

Case VIII.—L. V., aged 29; had suffered for some time with indigestion and complained of being unable to obtain proper night rest. She would be restless for a number of hours before falling asleep. The treatment consisted in regulation of the bowels, an appropriate diet, and the administration of lactopeptin. To relieve the persistent insomnia, however, which was greatly exhausting her, hedonal was administered on alternate days for the first two weeks, and always produced refreshing sleep without unpleasant sequelæ.

Case IX.—F. B., aged 50; had been troubled for some time with indigestion, and at his first visit complained of an attack of urticaria, with marked itching. Insomnia was produced, and the patient urgently asked for a hypnotic. While it was to some extent relieved by hedonal in 15-grain doses, no permanent results were obtained until the eruption was controlled by the internal administration of rhubarb and soda and the use of alkaline baths. Although the stomach was much disturbed in this case, hedonal was well tolerated.

Case X.—E. D., aged 50; was a sufferer from chronic diffuse nephritis. She was troubled with severe headaches, and also complained of getting very little sleep at night. Hedonal in 15-grain doses gave her a comfortable night's rest, although on a few occasions the patient was aroused by the desire to pass her water, but after this had been done she again fell asleep. Aside from this effect, the drug seemed to exert no influence upon the kidneys, and was not followed by unpleasant sequelæ.

Judging from my experience with hedonal, I am led to consider it a valuable hypnotic in the class of cases of which I have given examples above. Insomnia is one of the most frequent symptoms which the practitioner encounters, and although hypnotics should be avoided as much as possible, there are occasions when they

become indispensable. While hedonal cannot compare in strength of action with some of the other remedies, it can be used to advantage in the simple forms of sleeplessness unattended with marked mental excitement or pain. I have administered it only in wafers, as its taste, resembling wintergreen, might prove objectionable to some patients. The sleep produced by it very closely resembled the natural, and from what I have read and been able to observe for myself, its administration is perfectly safe, the drug being without any effect upon the vital organs.

INVAGINATION OF ILEUM FOLLOWING APPENDICITIS IN A CHILD AGED FOUR MONTHS AND TWENTY-SEVEN DAYS.

By JOSEPH S. RARDIN, M. D., Portsmouth, O.

I wish to place the following case on record as illustrating the early age in which appendicitis may occur, and because of its unique history:

Baby D., male, born February 6, 1901; had always been healthy up to present illness. I first saw him on the evening of October 9th, when the mother gave the following history: For two weeks the baby had not been well; had been very fretful and sleepless, with diarrhœa, nausea, and at times vomiting, with but little inclination to nurse. Home remedies had been administered, but on account of the passing by the rectum of quite an amount of bright blood, I was called.

There was no rise of temperature, but the pulse was rapid. Facial expression was "drawn," and the child evidently was in great distress.

I was not clear as to diagnosis. Passing my finger in rectum revealed nothing abnormal. I prescribed tentatively, and saw the patient again during the following morning.

Symptoms were the same. There had been several passages of blood without fecal matter. The last fecal matter passed was at 2 P. M. on 9th. Some flatus was forming. I told the mother that there was some serious condition present, the hemorrhage pointing to a probable invagination, and advised opening the abdomen. This was declined.

The symptoms continued to grow in intensity; the flatus and tympanites increased; the child gradually waned in vital forces, and died at midnight of the 12th—then four months and twenty-seven days of age.

I secured an autopsy on morning of 13th, with the following results:

Abdomen much distended and tympanic; a median incision revealed inflammation in one coil of the intestine, which was found to be the ileum. This was inflamed for eighteen inches above the point of invagination through the ileo-cæcal valve. Eight inches of the lower end of the ileum was within the valve, in the head of the callum. The mass was inflamed, but there was very little adhesion or exudate, and was with some difficulty withdrawn without tearing. There was no break in integrity of the wall. The appendix was four and a half inches long, discolored in its distal two and a half inches, and of the consistency of parchment, being dead, but not gangrenous, and no adhesions. On opening the appendix there was discharge, but there was all the appearance of catarrhal erosion. No solid formation; opening into cæcum not occluded.

Conclusions.—1. The illness began with catarrhal appendicitis, showing the importance of not overlooking this disease, even in the very young.

2. The irritation and increased peristalsis set up by the inflamed appendix resulted in intussusception through the ileo-cæcal valve.

3. The hemorrhage came from the congested mucous surfaces, which were invaginated.

4. Hemorrhage from the bowel, unaccompanied by faecal matter, should lead to suspicion of invagination.

5. The case shows the importance of exploratory incision in doubtful conditions of the abdominal cavity. An early incision would readily have revealed the difficulty and led to its safe relief. This is especially true where there is suspicion of obstruction.

108 *Gallia street.*

THE ANGIOTRIBE—ITS USE AND ABUSE.*

By JAMES N. ELLIS, M. D., Atlanta, Ga.,

Gynecologist to the Presbyterian Hospital, Atlanta, etc.

Angiotribes, made after several designs, are now obtainable, notably those of Doyen and Tuffier, of Paris; Thumin, of Berlin; and Douglas Bissell, of New York.† The one with which

* Abstract of a paper read, by title, at the Richmond (Va.) meeting of the Southern Surgical and Gynecological Association, November 12th-14th, 1901. The original paper appears in the *American Gynecological and Obstetrical Journal*.

I am most familiar, and have found most satisfactory, is that of Dr. Doyen. He was the first to conceive a practical idea of this instrument, and submitted a design to Collin for manufacture in May, 1896. But it was not until the following year, and after many modifications of the original design, that it was perfected and given to the profession, practically as at present, and called by him a "progressive pressure forceps" (*pince a pression progressive*).‡

This powerful instrument is so constructed as to transmit the effort exerted by the hand, multiplied twenty times, to the tip of the shanks, enabling one to compress the most voluminous pedicles to the thinness of a sheet of paper. This great multiplication of the manual effort is effected through the medium of an extra lever, which can be utilized or not at the discretion of the operator. So long as this extra lever is attached, by its catch, to the main arm of the angiotribe, the instrument is used like an ordinary clamp, and the compressing force at the tip of the shank is equal to the effort of the hand multiplied by two. Applied, for example, to the pedicle of an ovarian cyst: The handles are progressively pressed together and held in position by the automatic, ratchet-like catch at the manual end of the main levers. This gives a compressing power at the tip of the shanks equal to twice the force exerted by the hand, and is sufficient for many of the purposes for which the instrument is designed. To increase this force, it is necessary to bring into play the extra lever, which, up to this time, has been idle. In order to do this, we release it from

† The instrument of Dr. Bissell, which he designates "écraseur," and which I have never used, has been recently modified, both in principle and shape, and is highly commended in a personal communication from Dr. Clement Cleveland, of New York. He says: "It can be used absolutely without fear in place of ligature." This is high commendation from a distinguished gynecologist, who has been constantly practicing angiotripsy for the past two and a half years.

Tuffier's instrument differs from that of Doyen, in that the blades, on their clamping surface, present a central longitudinal groove, and compression is effected by means of a wheel or windlass-like attachment, instead of the extra lever.

The instrument of Dr. Thumin, the assistant of my preceptor, Professor Leopold Landau, of Berlin, is but a modification of that of Dr. Doyen, consisting in the grafting of Tuffier's windlass upon Doyen's extra lever.

‡ Tuffier's instrument, which he called an "angiotribe" (vessel-crusher), followed one year later. Dr. Cleveland considers the name a misnomer, claiming that the microscope proves that the tissues, after the proper use of this instrument, are *compressed*, and not *crushed*.

the catch, which holds it in place, and lift it from the main lever. The distal end of the extra lever now engages beneath the crotchet of a transverse traction limb, attached midway of the opposing main lever, and the manual effort progressively exerted at the handles is now transmitted to the tip of the shank multiplied twenty times.

The levers and bolts of this instrument are so designed and executed as to permit of the exertion of great force without yielding at any point, being capable of safely sustaining a force, giving from two to three thousand pounds pressure at the tip of the shanks, which can be easily exerted without impairing the delicate tactile sense which it is necessary to preserve in the hand in order to properly estimate the degree of pressure appropriate to each case.

When sufficient pressure has been maintained for the requisite length of time, and it is desired to remove the instrument, the extra lever is first lifted and disengaged from the crotchet on the transverse bar and re-attached to the main lever by the catch at the manual extremity; the automatic catch of the main levers is depressed, the handles gently separated, and the instrument removed.

The portion of tissue which has been included between the jaws will now be found to have been compressed to the thinness of paper. The watery elements of the adipose, muscular, and elastic tissues in the track of the angiotribe have been pressed to the sides of the shank of the instrument, leaving only the fibro-serous and cellular coats of the vessels, and a thin, ribbon-like sheet of compact connective tissue in the channel of the instrument. The nerve cords and the middle and inner coats of the arteries and veins are completely severed—the latter retracting, incurvating, and occluding the lumen of the vessels, as when subjected to torsion. The lymphatics, in common with the outer coats of the arteries and veins, are firmly agglutinated and rendered impermeable.

According to Thumin, a microscopical examination of this compressed tissue shows that its integrity is not completely destroyed, but that it is simply compactly compressed; and observation proves that necrosis and sloughing do not result, but that a gradual process of revitalization takes place.

Thus it will be seen that the principle underlying angiotripsy is as old as the pile-clamp, the caesarean, and the practice of torsion. The

existence of the angiotribe, in fact, is the outcome of the efforts of French gynæcologists to find a substitute for the temporary clamp applied to the broad ligament in vaginal hysterectomy; and, just as the permanent silk ligature, with its occasional train of annoyances in this operation, yielded place to the temporary clamp, so, now, the clamp gives place to the angiotribe, which accomplishes in two or three minutes, with a minimum amount of pain, danger and discomfort, that for which twenty-four or forty-eight hours was required by its immediate predecessor.

This instrument, as now constructed, while doubtless susceptible of further modification and improvement, is such a valuable aid to the surgeon, and has such an extensive field of usefulness that I am surprised at the rarity of its presence in the instrument tray and the paucity of allusion to it in current surgical literature.

The practical application of this instrument will suggest itself to every thoughtful surgeon. It is useful wherever it would otherwise be necessary to ligate, *en masse*, a vascular pedicle, reducing its bulk to the least possible dimensions consistent with safety, and, by the action of the angiotribe alone, or with the aid of a supplementary ligature of very fine catgut, assuring perfect primary and permanent hæmostasis.

Some excellent surgeons, who have been using the angiotribe for years, express entire confidence in its unassisted power to insure perfect hæmostasis; while others, with less temerity or greater caution, habitually employ reinforcing ligatures. In this, as in most other controversies, the truth will be found to lie in a mean between the two extremes. In my opinion it is not safe to depend absolutely, in all cases, upon securing permanent hæmostasis by compression with the angiotribe alone. The possibility of secondary hemorrhage, after an apparently satisfactory compression of several minutes, though remote, is a danger that has occasionally materialized in the practice of those who have had an extensive experience in the use of this instrument, and have depended solely on it for permanent hæmostasis. Personally, such an accident has never occurred, but in vaginal hysterectomy I have occasionally seen a uterine artery, temporarily controlled by the application of the angiotribe, bleed freely at the moment of making the toilet of the field of operation. The friction of the gauze sponges had separated the compact,

fibrous-lamella produced by the action of the angiotribe, and the thus impaired obstruction to the artery permitted free hemorrhage, necessitating the application of a ligature. Consequently, when the pedicle contains voluminous vessels, and when subsequent hemorrhage would be very dangerous, I now habitually re-enforce the hæmostatic action of the angiotribe by placing a very fine ligature, preferably of catgut, in the channel made by the jaws of the instrument. This may seem an unnecessary precaution to many, but when it is estimated that without the re-enforcing ligature secondary hemorrhage will occur once in fifty times the danger becomes apparent, and the surgeon who would terminate an intra-peritoneal operation with this possibility unguarded seems inexcusably negligent.

It is impossible to formulate a fixed rule as to when it is necessary to supplement the action of the angiotribe by the precautionary ligature. This is a matter which will be determined by the judgment, observation and experience of the individual operator. A cautious surgeon will use the ligature when in doubt, gradually dispensing with it more and more as he gains confidence in the hæmostatic power of the angiotribe.

In spite of this uncertainty, which limits the use of the angiotribe, it still fulfills many important functions. By reducing the pedicle to the smallest possible dimensions it enables us to habitually use, with perfect safety, small, readily absorbable ligatures; or those who doubt their ability to secure sterile animal ligatures can substitute the finest silk ligature for the voluminous one it would otherwise be necessary to use. Those of us who have occasionally had to deal with the annoying consequences incident to the presence of a mass of irritating, unabsorbable silk in the intolerant tissues will appreciate that any method which permits of safely dispensing with their use is a real advantage. Personally, I have no hesitancy in using catgut, and believe that the smaller sizes can be easily and perfectly sterilized, the larger sizes, on account of the increased resistance to the penetration of the sterilizing agent, being more difficult of safe sterilization. The mere reduction of a large, resilient pedicle to an unresisting, ribbon-like mass of insignificant size, leaving a mere point or line for cicatrization, easily covered by peritoneum when intra-abdominal, and with the danger of post-operative adhesions diminished to the vanishing point, are some of the advantages, independent of its

hæmostatic power, incident to the employment of the angiotribe. Its intelligent use, however, insures practically bloodless surgery, thus greatly contributing, in common with the above factors, to the securing of comparative freedom from post-operative shock, a marked diminution of post-operative pain, and an almost uniformly rapid and uncomplicated convalescence.

The amount of force it will be necessary to exert, and the length of time it is desirable to apply it, will vary with the varying consistence of the tissues involved, the size of the pedicle and the object it is desired to attain. With a dense, resistant pedicle, such as is found in the lower segment of the broad ligament, for instance, when it is desired to effect permanent hæmostasis with the angiotribe alone, the maximum pressure of three thousand pounds, continued for three minutes, will be required to safely occlude the uterine vessels. If, however, a supplementary ligature is to be used the time of the application of this force may be materially shortened. The upper border of the broad ligament is more fragile, and should be compressed with caution, especially when the tubes and surrounding tissues are thickened and soddened by septic inflammation. Too energetic compression here, brusquely applied, will not only crush through the friable tissue composing the ligament proper, but completely sever the ovarian vessels as well.

Preliminary to section of hollow, serous-covered viscera, such as the intestine, compression should be moderate and progressive, stopping short of cutting through the serous coat. The omentum and mesentery also require to be cautiously compressed, but with sufficient force to displace the adipose and cellular elements without rupturing the fibrous connective tissue, reducing thickened, inflamed omentum to the thinness of normal peritoneum without cutting through the outer coats of the blood vessels. The arteries traversing such structures as the peritoneum and omentum are, apparently, immediately obliterated, but here, especially, it is essential to use a supplementary ligature if they are of considerable size. One soon learns, however, to correctly estimate the resistance of the tissues grasped in the jaws of the angiotribe and to accordingly moderate the pressure or increase it to the maximum; and in this, as in other surgical manipulations, the personal use of the instrument and the resulting practical knowledge of the varying resistance of different structures are essential to the best success.

The angiotribe is manifestly inapplicable to the control of hemorrhage in sections or wounds of the substance of such friable organs as the liver, spleen or kidney, the jaws of the instrument cutting through such fragile tissue instead of condensing it; but its utility in retro and transperitoneal nephrectomy and in splenectomy is evident. Its hæmostatic action is serviceable in the formidable operation of gastrectomy, and, in fact, can be utilized to advantage in nearly every operation of any magnitude which the surgeon is called upon to perform within the abdominal and pelvic cavities.

In vaginal hysterectomy angiotripsy is particularly advantageous, and I have entirely discarded the temporary clamp, which was left on for twenty-four or forty-eight hours, for the extemporaneous compression of the angiotribe, followed by the application of a number two catgut ligature. These ligatures are subsequently absorbed, or come away with the discharges, and require no further thought or care. The reduction of the tissues to be ligated in this operation to the least possible volume consistent with safety diminishes proportionally the amount of necrotic debris to be subsequently eliminated, and insures a more painless and prompt convalescence.

In supra-vaginal hysterectomy it serves a useful purpose, not only for compressing the broad ligament, but for crushing the cervix at the point of amputation, thus firmly agglutinating the opposing walls of the cervical canal, lessening the chances of immediate infection from that source, and precluding the possibility of subsequent ascending infection from the vagina. The uterine arteries may be grasped in the jaws of the angiotribe at the same time, and it is my habit to transfix the compressed cervix, antero-posteriorly, with a double number two chromicized catgut ligature, tying to either side, including the compressed uterine vessels and covering by approximating the peritoneal flaps with a continuous suture of number naught catgut.

The use of the angiotribe in hysterectomy for fibro-myoma robs the operation of much of its danger and difficulty. The management of the vascular, cavernous-like sinuses, coursing between the layers of the broad ligament, no longer causes anxiety and uneasiness. Permanent ligatures can be safely dispensed with, the vessels more securely disposed of, primary hemorrhage abolished, and the time of operation materially shortened.

For the removal of, approximately, normal adnexia, or the excision of comparatively small ovarian or intra-ligamentous cysts, the angiotribe alone may be absolutely depended upon for hæmostasis.

The application of the angiotribe to the appendix vermiformis, when the stump can be satisfactorily dealt with after some such method as that suggested by Dawbarn or McBurney, is unnecessary and unjustifiable, but it is frequently serviceable in the management of a redundant meso-appendix.

The use of the angiotribe, however, is, by no means, limited to operations upon the contents of the abdominal and pelvic cavities. Coupled with the precautions herein suggested, it may be safely depended upon to occlude arteries of any size, in any part of the body, up to that of the brachial.

In no surgical procedure has it rendered me better service than in the operation of thyroidectomy. If excision of one lobe only is contemplated the usual incision is made, the isthmus exposed and sectioned. The lobe to be excised is bluntly dissected from its attachment to the underlying trachea and lifted up. Compression is first applied above, where the superior thyroid vessels lie, the ligature tied securely in the groove made by the angiotribe, and the pedicle severed on the side next the tumor. Then the inferior thyroid vessels, at the back of the lower extremity of the lobe, are similarly treated, care being exercised not to include the recurrent laryngeal nerve, which, however, usually lies safely imbedded in the groove between the trachea and œsophagus. If, as has once happened to me, this nerve should accidentally be included in the grip of the angiotribe, respiratory disturbances would immediately sound the alarm. For complete thyroidectomy, the necessary modification in the technique will readily suggest itself; and it is especially in exophthalmic goitre, where hemorrhage, both primary and secondary, is so commonly a cause of disaster, that this instrument justifies the enthusiasm of its advocates.

In the removal of pedunculated kekeloids, or vascular surface growths of similar conformation, and for the compression of the spermatic cord and vessels in castration, it has done me good service.

In elephantiasis of the labium, clitoris, or scrotum, a comparatively rare but not unknown disease in this country, operation is safely sim-

plified by the use of the angiotribe. In the former condition the affected labium is grasped in the hand and pedunculated by traction. The incision through the integument is followed by sufficient retraction of the skin to permit of the application of the angiotribe to the denuded pedicle, which is bloodlessly severed after three minutes' application of maximum pressure. This procedure, in scrotal elephantiasis, should be preceded by segregation of the penis and testicles, the denuded organs being held safely aside by an assistant. Repeated successive applications of the angiotribe, when the pedicle is very large, will be necessary here, each subsequent compression being preceded by section of the previously compressed tissue with knife or scissors, until the entire pedicle is progressively compressed and severed. Hemorrhage, the greatest danger in this operation, is obviated and cicatrization takes place readily and rapidly along the margin of compactly compressed, parchment-like tissue, with a minimum amount of the offensive discharge and sloughing incident to the slow progress of granulation common to former methods.

As a substitute for the pile-clamp, in the operation for hemorrhoids, the angiotribe is a delight to work with. Dr. Robert T. Morris, in a personal communication on the subject, says that "it not only destroys the vessels, but also the nerves, so that the patient is unaware that an operation has been done." It is equally satisfactory, in rectal surgery, for extirpation of the redundant tissue which is incident to the operations for prolapse of the rectum, and is a useful adjuvant in the execution of any of the many methods of proctectomy and procto-sigmoidectomy now in vogue.

In the extirpation of enlarged cervical, axillary, or inguinal lymphatic glands, the communicating chains of afferent and efferent lymphatics may be forcibly compressed and rendered impermeable before section, making subsequent leakage of lymph impossible, and thus greatly facilitating primary union.

A smaller model of this instrument is obtainable, with sufficient power for the compression of the less resistant tissues. It is useful in the circumcision of infants, for compressing the frenum in the circumcision of adults, in appendectomy where it is desired to use the angiotribe, for the umbilical cord of the infant, the ductus choledochus in extirpation of the biliary bladder, small ovarian pedicles, and, in a word,

all-pedicles of insignificant resistance or dimensions.

It was my intention to report, in connection with the subject of this paper, some cases from a series of major operations performed in the past three years with the assistance of the angiotribe, illustrative of its use and value as attested by results in the shape of a zero mortality and a comparatively uncomplicated convalescence, but this would necessitate exceeding the limits assigned to this paper, and must be deferred.[§]

I hope I have said enough, however, to justify the enthusiasm of many of the advocates of angiotripsy, to interest others in a procedure which they may have condemned without a trial, and to indicate that the angiotribe, as now constructed, though doubtless susceptible to further modifications and improvement, has a wide field of usefulness, and is an invaluable addition to the armamentarium of the modern surgeon.

19 Forest avenue.

CATALEPSY DUE TO INGESTION OF MUSCADINES.

By LUCIEN LOFTON, A. B., M. D., Emporia, Va.,

Ex-President Seaboard Medical Association of Virginia and North Carolina.

Two weeks ago, November 3, 1901, the writer was called twelve miles distant to see a case of "trance," in which the patient had been nearly thirty-eight hours. The case, as presented briefly upon my first visit, was as follows:

Davy Stephens, a negro lad, age twelve years, of neurotic temperament, well nourished, and whose parents were below the average mental standard. The boy was subject to "fits" from the age of eight, the cause of which could not be learned, but as he grew older an occasional attack being noted, which invariably was precipitated by such causes as fright, indigestion, loss of sleep, exposure to heat or cold, and anger. His mind normally was sluggish, while physically he was inactive, and it was only through corpo-

[§] Dr. Hugh M. Taylor, in a paper read at the fifty-first annual meeting of the American Medical Association, says that his experience in angiotripsy, limited to twenty-five or thirty supra-pubic sections, fully sustains the advantages claimed for the angiotribe. He emphasizes the necessity of applying the jaws of the angiotribe at right angles to the vessels, the ruptured inner coats approximating more thoroughly and occluding the tumor of the vessels more efficiently than when compression is made obliquely.

ral persuasion administered by his parents *ad libitum* that he could be induced to work. No history of injury could be elicited, either by examination or otherwise. I found, upon close examination, that the body was cold, temperature per rectum 97° , skin dry and "doughy" to the touch, no perceptible radial or temporal circulation, pupils unevenly dilated and unresponsive to light, respiration imperceptible. Heart's action, upon consultation with phœnendoscope, extremely weak, intermittent and ranging from 46 to 62 per minute, and easily compressible. Both the sphincters of the bladder and rectum were found paralyzed, from which a goodly quantity of urine and feces had escaped.

Genitalia normal. Fingers and toes somewhat flexed. Muscles would not respond to stimulation, such as hot water, pin thrusts or vigorous slapping. Placing the right upper extremity in the horizontal position, it remained so seventeen minutes, gradually lowering itself to the bed. The left lower extremity, at an angle of 75° , remained motionless for over twenty minutes. The abdominal muscles were rigid, and little, if any, indentation could be made in them when force was used. The erector spinal muscles and those of mastication and deglutition were in a state of absolute rigidity at first, and it was only by repeated efforts could they be manipulated at all. It was learned, through the mother, that the boy had eaten very heartily for some days previously of muscadines, and at the time of the present attack was found near a muscadine vine, where he presumably had gorged himself with the fruit.

By way of experiment, I gave an eighth of a grain of apomorphine subcutaneously, followed by an additional tenth in seventeen minutes without the slightest reflex being aroused. In the mean time a half gallon enema of a 1 to 2,000 hot permanganate of potash solution was given, devoid of results. This was repeated, when muscadine skins and pulp began to descend by the pint, among which were many which had been swallowed whole. Altogether nearly eight solid pints came away within an hour. No evidence of digestion presented itself. A copious hot whiskey enema of a 50 per cent. strength was next used for stimulation, which was retained, with good results. After consciousness was restored, nine hours later, a generous calomel and soda purgation—i. e., 1-4 grain of calomel and soda every twenty

minutes until results followed, was ordered, which responded after twelve had been given, and which, by way of conclusion, completed the treatment, except a strict *regime* being then and there inaugurated upon his diet. Strange to say, the boy had never suffered with nausea. The boy is now well, as far as the acute attack is concerned, and eats moderately with relish.

The treatment in future will consist of all available digestible food stuffs, and at no time being allowed to eat like a gormand, especially at night.

Correspondence.

"Memoria in Eterna."

Mr. Editor,—As time flies by, amid the rush and bustle of this eminently practical work-a-day world, one unconsciously displaces from the mind of to-day the remembrances of the happenings of yesterday; there are, however, some things which should remain "in everlasting remembrance." The gentleness, strength and beauty of the personal character of William McKinley, and the inestimable value of his services to the nation and the world at large, should not be consigned to the mental dust heap of oblivion, but should be cherished as a precious heritage by every patriotic American, whether native or foreign-born. Feeling confident that their friends in the medical profession will appreciate at its proper worth a souvenir which shall serve as a constant reminder of the life, character and services of our third martyr President, The Arlington Chemical Company has prepared for gratuitous distribution a magnificent enlarged reproduction (17x13) of one of the finest and most faithful portraits in existence. Competent critics who have seen this reproduction have expressed themselves as surprised at the faithfulness with which the beautiful Rembrandt effect has been carried out, with its rich dark sepia tints, and with the general artistic worthiness of the portrait as a whole. The advertisement of Liquid Peptonoids is so unobtrusive as to be entirely unobjectionable. The Arlington Chemical Co., Yonkers, N. Y., will be pleased to send a copy to any physician who may have failed to receive one, together with suggestions for proper method of framing.

THE ARLINGTON CHEMICAL CO.

Vaccine, Not Virus, Is What Is Wanted.

Mr. Editor,—Let us “stand to the law and to the testimony” in this matter of medicine—the law given by Pasteur:

1. “Each fermentation is produced by the development of a specific microbe.”

2. “Each infectious disease is produced by the development of a specific microbe.”

3. “The microbe of an infectious disease, cultivated under certain detrimental conditions, can be converted from a virus into a vaccine.”

In view of the seeming reproach being cast upon the profession in this matter of vaccination by reason of the apparent or real testimony in the case, would it not be well for us to cease the application direct from the heifer and have this virus go through humanizing processes before use extensively, thus becoming what Pasteur intended to imply and what Jenner proved, as all old physicians will this day agree, I dare say, without a dissenting voice.

No harm ever came of vaccination in time back, and it was as thorough a protection as could be reasonably wished.

None can, with reason, deny that vaccination gives immunity in small-pox; neither can any one of “ye olden times” remember any harm coming from it, humanized as it used to be some years ago.

WM. S. STOAKLEY, M. D.

Cheriton, Va., November 25, 1901.

Proceedings of Societies, Etc.

BALTIMORE MEDICAL AND SURGICAL SOCIETY.

Regular Meeting, October 14, 1901, in Hall of Medical and Chirurgical Faculty, 847 north Eutaw street. Dr. Charles G. Hill, President; Dr. Eugene Lee Crutchfield, Secretary.

Prof. Henry E. Shepherd lectured on the *Relationship of Literature to the Medical Profession*, referring to the literature of the ancients. He mentioned their references to the plague. The Hippocratic oath and the history of medicine were described in detail. Chaucer and Shakespeare, from the days of Edward III to Edward VI and others, from Thomas a Becket and later, refer frequently to a “doctor”—this “doctor” being an astronomer and medical

ideal in sympathy with allied arts. All were gentlemen, who were well read. The great medical doctor Gatisden, in South Carolina, was referred to by Prof. Shepherd in regard to the doctor’s treatise on “Small-Pox, the Diet,” and his references to the Bible. In the Medieval ages, medical men were either monks or the like. In those days we read of, for instance, the “black death,” which was associated with religious superstition, but is now regarded as malignant scarlet fever. During the Elizabethan period, such men as Bacon and Shakespeare played prominent roles in the interpretation of the doings of men in the Æsculpien calling. In the plays of Hamlet and King Lear, we find the doctor not of minor consequence. In Macbeth, in the third scene of the fourth act, Shakespeare shows the acquaintance with the doctor of that day. Among the Jews, Dr. Lopez is noted in literature for his scholarly masterpieces, especially regarding “gunshot wounds.”

Strange as it may seem to relate, there is no reference made in Shakespeare to nervous diseases, yet he does refer to the pia-mater, and in King Lear, Prof. Shepherd found much association with the usual phenomena manifested in the average case of hysteria. Shakespeare also refers to “fever,” known then as the “sweating sickness,” and Dr. Kies, in 1552, refers to it in commenting on Shakespeare’s able work, King John.

John Locke, in 1668, notably writes on the subject of “fever,” and Sydenham, as early as 1689, in his oft-quoted writings refers to this subject.

In the seventeenth century Helmholtz and Kelvin notably referred to medicine and the healing art. Later we find the great Keats abandoning surgery, wherein he had become eminent, to become a devotee to poetry. The nineteenth century turned the current of medical thought by the views of Brownie, Watson and the familiar Darwin.

Prof. Shepherd’s very forcible, eloquent and interesting lecture met with usual appreciation.

Dr. Winslow offered a vote of thanks. Dr. Taneyhill, in seconding the motion, congratulated the Society on the great treat of the lecture, and complimented Prof. Shepherd. Carried.

The meeting was followed by a lunch and smoker, in which Prof. Charles G. Hill, the President, proved his adaptability in making comfortable all of the members and their guests. *Baltimore, Md., Meeting, October 28, 1901.*

Held at the Baltimore Medical College, the president, Dr. Hill, in the chair, Dr. Crutchfield, secretary.

The meeting was largely attended, and after the scientific proceedings a collation was served in the college building.

There were no committee reports.

Traumatic Epilepsy—Pianist's Neurosis—Writer's Palsy in Young.

Dr. Chas. G. Hill exhibited a patient who, two years ago, received an injury, causing depression of the skull, followed by epilepsy, and Dr. Blake removed the depressed bone. The question is, will the removal of depressed bone cure epilepsy? Frequently it does not. Dr. Hill believes epilepsy is not a disease of the nervous system entirely. It is a neurosis plus something. What that is he has been trying to find out. He believes that ammonium in excess may be the cause. The stomach, he thinks, is often at fault, and he believes he has discovered an epileptic stomach. The epileptic patient should have neurotic food—nitrogenous diet. This patient operated on three or four weeks ago has had one recurrence of the attacks since the operation. Want of digestion of starchy food is characteristic of epileptics. This patient before the operation used to have two attacks a week, but now he feels better, is possessed of better intellect, and is generally much improved since the operation.

Dr. Hill also exhibited a patient suffering from neuritis. He also referred to a case of "pianist's neurosis." He has quite recently seen a number of cases of writer's palsy in very young children. The patient exhibited was one of general multiple neuritis. He went away on a summer vacation in August, and became thoroughly chilled. The trouble dates from that, and to no other cause could it be assigned. Cases of idiopathic neuritis are thought to be infectious. Under the influence of cold the system is thought to be less able to resist the organism. Treatment consists of hygiene, iodides, strychnine, etc. Strychnine is dangerous in the congestive conditions of the spinal cord. It is useful in diseased states of peripheral nerves. In the case shown there was not much pain, as the motor nerves principally were affected.

Renal and Vesical Calculi.

Dr. John D. Blake exhibited a young man

upon whom he had operated last spring for removal of stone in the bladder and stone in the kidney, whose nutrition had been good. At first a supra-pubic cystotomy was performed, and later the operation was performed on the kidney. Dr. Blake showed the stones. The patient passed blood and pus in the urine, which speedily cleared up. The blood came chiefly from the bladder.

Tetanus—Cases and Treatment.

Dr. Blake also reported the case of a boy who, on June 23d, suffered an injury to his arm. He was caught in a cog-wheel, which tore away considerable tissue. Seven or eight days subsequently he developed tetanus.

He also showed a young man who came into contact with an electrical apparatus in the B. & O. tunnel, the patient being violently thrown down, and in this case also tetanus developed. Dr. Blake said that these two cases belong to a series of eight cases that he has treated, with seven recoveries. In all of these cases opisthotonos was marked. Antitoxin was given freely, or rather heroically—10 to 12 c.c. being administered every three hours until patient was thoroughly saturated. Until the convulsions ceased tincture cannabis indica and chloral were given, and later, tonics were administered.

Fractured Patella.

Dr. Blake next showed a patient upon whom he operated for a fractured patella. In his opinion it is not conducive to the best results to make a transverse incision over the site of injury, but under strict asepsis he makes a semi-circular incision with curvature downwards, then removes all fragments of tissue between the bone surfaces, but he does not wire the fragments.

Dr. Blake also showed specimens of two ovarian tumors that he had removed, which weighed 39 and 22 pounds, respectively. Both patients made early and uninterrupted recoveries.

Typhoid Fever.

Dr. David Streett exhibited patients suffering from typhoid fever. In all of the three cases rose spots were well marked. All were being treated by hydrotherapy. Egg albumin, whiskey and strychnia were employed as required, but Dr. Streett laid much stress on the importance of the cold pack and the Brandt

treatment, the last reports of which show a mortality of only 1 per cent.

Operation for Rectal Prolapse.

Dr. S. T. Earle exhibited a patient upon whom he had operated for the relief of rectal prolapse. He followed Dr. Tuttle's method, and found it much better than others. Kangaroo tendons were used and sutures brought above the sacrum, then held in position by a small holder—the assistant having two fingers in the rectum. The diet, semi-liquid. Sweet oil was given one week after operation. In this case the bowel had protruded 8 or 9 inches.

Dr. Chas. S. Potter gave a lantern exhibition of pathological specimens taken from his own and other cases.

RICHMOND ACADEMY OF MEDICINE AND SURGERY.

Regular Meeting, held November 26, 1901. Stuart McGuire, President, in the chair; Mark W. Peyser, M. D., Secretary and Reporter. Dr. Marvin E. Nuckols read a paper on "Angina Pectoris."

DISCUSSION.

Dr. M. D. Hoge, Jr., said that the diagnosis of a typical case of angina pectoris was not difficult. As to the pathology, in the majority of well marked cases, some obstruction of the coronary arteries was found; again, an atheromatous degeneration of the base of the aorta could be frequently detected. In some few cases post-mortems presented no pathological changes to the naked eye. But the practical part of this disease was the treatment. The nitrites were the remedies used to the best advantage. In one case in his own practice, where amyl nitrite and other remedies had been employed without benefit, nitro-glycerin, at regular intervals for several months, afforded marked relief. It was well to know that the continued use of nitro-glycerin required constant increase in the size of doses. One one-hundredth of a grain was sufficient for but two or three weeks. Patients could stand astonishingly large amounts. Dr. Hoge reported a case of pseudo angina pectoris in a young girl, due probably to hysteria.

Dr. J. S. Wellford said he had seen many cases of pseudo angina pectoris, but was satisfied that he had not seen more than three or four cases of the true form. In one patient, whom he had the opportunity of examining several times,

he could never detect any sign of heart disease; but she died suddenly while at stool, probably from straining. The most diagnostic symptom was pain radiating down the left arm only as far as the elbow. He always regarded the disease as nervous, and gave the nitrites or chloroform or ether, the latter two to their stimulating stage only. If there were any accompanying heart disease he treated that also.

Dr. J. Allison Hodges said he had come to the conclusion that all cases of angina pectoris were either nervous in origin or due to lesions of the aorta or aortic valves, the last two being the most frequent and important causes. Text-books would lead one to believe that the attack was spasmodic and evanescent, but he had seen cases in which it would last indefinitely. He agreed with Dr. Hoge regarding the value of nitro-glycerin. Amyl nitrite, chloroform or ether had never been of benefit in his hands. Morphine and atropine afforded the quickest relief, but were dangerous in that their use led to the formation of the morphine habit. Nearly all of his cases, when seen, were already habitues. It was of greatest importance in treatment to immediately and absolutely change the method of life and regulate the diet of the sufferer. He did not take stock in the diagnosis of coronary disease before death.

Dr. William S. Gordon said that in diagnosing angina pectoris the first thing to do was to not confound it with aortic disease. It was difficult to explain death from it by post-mortem. He referred to a case seen by Dr. H. M. Taylor and himself, which was thought to be disease of the liver, the patient having glucosuria and albuminuria. He had pain in the epigastrium, but never in the arm. Answering a hurried summons, he found the patient dead. The man was intemperate, and had arterio-sclerosis. In another case, every time there was undue exertion pain occurred at the pit of the stomach. There was a pericardial friction murmur at the tip of the sternum, which accounted for some of the pain; but the patient when lying down had a mitral systolic bruit, and the pain then came in the right place. Recurring to his first statement, Dr. Gordon said that the remarks of previous speakers did not wholly apply to the subject under discussion. Was the cardiac pain due to spasm and pressure on the sensory nerves? In aortic trouble death was usually due to dilatation of the left ventricle. If neuritis

were the cause of the pain, as argued by some, it would remain in the intervals between attacks; but in true angina the patients were then apparently well. It could not be due to dilatation and excess of pressure in cases in which the pulse was not affected. The sudden death must be due to dilatation and paralysis of the heart; mere pain did not kill.

The nitrites and iodides were the remedies to be used. Nitro-glycerin acted by producing arterial dilatation, the vessels during the attack being spasmodically contracted. The agent did not dilate the heart. If it did, the patient would die more quickly. He had seen several cases in which, owing to impaired nervous mechanism, the pulse became thready, and nitro-glycerin administered produced dilatation and saved life.

Dr. Hodges asked if *Dr. Gordon* did not, after all, come back to the point that the aorta was mainly at fault. Was there not an aortitis at the base of it all? Of course, the pains of aortic valve disease and angina pectoris were entirely different.

Dr. Gordon, in reply, said that it depended upon the definition of the disease. If this included aortic trouble he agreed with *Dr. Hodges*, but he believed the disease ought to be considered to exist only when the post-mortem showed no anatomical lesions. He thought there was to a slight extent a similarity between it and epilepsy, but that they were not identical.

Dr. Nuckols, in closing the discussion, said he did not believe in the pseudo form of the disease; but he thought there was a difference in degree in true angina; and that there was always some organic lesion, though it might escape detection. Regarding dilatation, a person suffering and having mitral regurgitation was relieved when compensation failed.

REPORT OF CASES.

Dr. Hugh M. Taylor reported a case operated upon because of three interesting features it presented. The patient's face looked as though she had taken large amounts of nitrate of silver, the body, however, being naturally jaundiced. Her attending physician had given bichloride of mercury. The gall-bladder was enormously distended, reaching three inches below *McBurney's* point, and being perceptible from a distance. It was difficult to tell whether it was the gall-bladder or cystic enlargement of

the kidney. Her physician had tapped it three weeks before, and had drawn off a quantity of limpid serum, which was difficult to understand. The case was also interesting because in the absence of jaundice and hypertrophic sclerosis he would have said it was an appendicular enlargement. Because of her age and appearance he expected to find cancer of the liver, but there was none. A quart or more of muco-serous fluid, with a little pus, and tinged with bile, was drawn off, and a large number of stones removed from the gall-bladder by a cholecystostomy. None were looked for in any of the tubes because of the age and precarious condition of the patient. He expected her to die from cholemia, but if she did not, he would operate further.

Analyses, Selections, Etc.

Indications of Treatment in the Case of Uterine Myomata.

George Tucker Harrison, M. A., M. D., Obstetrician to the New York Infant Asylum, etc., read a paper on this subject before the New York State Medical Association October 24, 1901, of which the following synopsis is made:

The attempt to define with precision the exact indications of treatment in the case of uterine myomata is attended with great difficulties, and the result is far from satisfactory. No hard and fast rules can be here laid down. It is absolutely necessary to individualize. Large size of the tumor and rapid growth are usually assumed to be positive indications for radical measures, and yet this cannot be admitted without qualification. If a woman has reached the age of fifty years, then if she has a large tumor there is no indication for an operation, because the menopause will soon cause retrogressive changes and a cessation of the annoying symptoms. Notwithstanding the statement to the contrary of *Muller* and *J. Taber Johnson*, it is absolutely true that at the time of the menopause retrogressive changes do occur, according to the opinion of the vast and preponderating majority of clinical observers. This error is due to two facts that are overlooked—first is the circumstance that the menopause is postponed when

a woman has a myoma, and does not show until the fifty-second or fifty-sixth year, or any intermediate time; and the second is the fact, which Hofmeier and Schröder long ago pointed out, that even after the menopause adhesions may take place between omentum, intestines and the myoma and increased growth occur from the new nutritive supply. The younger the patient the subject of myoma the more earnest the danger, and the more often the necessity for operative intervention. Hemorrhage one of the most important symptoms calling for treatment. Before having recourse to a radical procedure, the use of curettage of the endometrium recommended. This often supersedes the necessity of myomectomy. The importance of controlling the hemorrhage cannot be overstated. If unchecked, it leads to anemia, and, as a consequence, to thrombo-phlebitis and brouse atrophy of the heart. Thrombosis is a prominent factor in death due to myoma. Hence hemorrhage occurring in a young woman with a myoma, in whose case palliative measures have proved inefficient, will imperatively demand myomectomy. The possibility that myoma may undergo degenerative changes into sarcoma or carcinoma cannot be allowed as a reason for operative intervention, as, after all, a very small percentage of myomata do undergo such transformations. One complication, however, prevents a positive indication for radical operative measures, and that is *cystic degeneration*, as it leads to rapid growth and many annoying symptoms. *Pressure symptoms* may demand an operation, especially when phenomena of incarceration in the pelvis occur, and the functions of the bladder are distended. Constantly recurring *ischuria* may, therefore, demand *myomectomy*. The pecuniary circumstances of the patient and her environment must be taken into account in determining the question of palliative measures or a radical operation. *Menni-myomata*, which exhibit no symptoms, should be left without treatment. *Ascites* may demand an operative procedure, especially when it is due to a subserous myoma, attached by a long and thin pedicle, which allows considerable mobility. In these circumstances the ascites is due to mechanical irritation, and with its removal the symptoms disappear.

Book Notices.

A Treatise on Surgery by American Authors. For Students and Practitioners of Medicine and Surgery. Edited by ROSWELL PARK, M. D., Professor of Surgery in the University of Buffalo, N. Y. *New (3d) Edition in one Royal Octavo Volume of 1,350 pages, with 692 Engravings and 64 full-page Plates in Colors and Monochrome. Cloth, \$7.00, net; leather, \$8.00, net.* Lea Brothers & Co., Philadelphia and New York.

A new edition of *Park's Surgery*, the third in five years, speaks well for the book and for the activity of American interest in its subject. This country is now abreast of the world in surgery, and it is owing to such men as Dr. Park and his fellow-collaborators, that this is a fact. He planned his book well, knowing the needs of student, general practitioner and surgeon, and he secured authorities of the highest standing for its various chapters. The result is that the work represents the best special knowledge on each subject. Surgeons can consult it as a reference book and a safe guide in the perplexities of practice, and they will appreciate the clearness which is such a boon to the student. It is logically built-up, first the principles, then the practice, in all departments. Thus it suits students of all ages, pre- and post-graduate. The illustrations deserve mention. Always liberal and elaborate, they have been further enriched in this edition, until the text is illuminated with nearly seven hundred pictures and no less than sixty-four full-page plates in colors and monochrome.

Americans love a comprehensive book, and have little time for referring from one volume to another. In *Park's Surgery* this national trait is gratified, for it contains surgery within one pair of covers and at a most moderate price, considering the size and beauty of the work. The revision has been most thorough, bringing the book to the latest date.

Public Health Reports (formerly, Abstract of Sanitary Reports). Issued by the Supervising Surgeon-General Marine Hospital Service. (Under Act of Congress approved February 15, 1893.) Vol. XV. *Part I*, Nos. 1 to 26 (January 1st to January 30, 1900). *Part II*, Nos. 27 to 52 (July 1st to December 31, 1900).

These two large bound volumes are the collection of the *Weekly Public Health Reports*, as

issued by the Surgeon-General, United States Marine Hospital Service. It is one of the most valuable publications of the government. We presume it can be secured by any reputable practitioner by application through his congressman.

Physician's Visiting List (Lindsay & Blakiston) for 1902. Fifty-first year of Publication. Philadelphia: P. Blakiston's Son & Co.

All styles contain the special memoranda page, pocket and pencil. The *regular edition* for twenty-five patients per week or day, \$1; for fifty patients, \$1.25; for fifty patients per week, two volumes, one from January through June, and one from July through December, \$2; for seventy-five patients, in like two volumes, \$2; for 100 patients per week, in like two volumes a year, \$2.25. The *perpetual edition*, same as the regular edition, *but without dates*, can be commenced at any time, and used until filled, for 1300 names, \$1.25; for 2,600 names, \$1.50. Then there is the *monthly edition*, which can be commenced at any time, in which the name of the patient need be written but once a month: plain binding, 75 cents; leather cover, pocket and pencil, \$1. This "List" is so well and favorably known that we doubt not that a copy can be seen in almost every community in the United States. It contains the metric or French decimal system of weights and measures; table for converting apothecaries' weights and measures into grams; dose table, giving doses in both English and metric systems to correspond with the new U. S. P.; how to manage cases of asphyxia and apnoea; comparison of thermometers; new complete table for calculating the period of utero-gestation; and blank leaves for visiting list, for memoranda, addresses of patients and nurses, accounts asked for, memoranda of wauts, obstetric engagements, vaccination engagements, record of births, deaths, etc., cash accounts, etc. This is an almost perfect list, containing practically all the information that could be put in a space so small.

Essentials of Obstetrics. By CHARLES JEWETT, A. M., M. D., Sc. D., Professor of Obstetrics and Gy-

neecology in Long Island College Hospital, and Obstetrician and Gynecologist to the Hospital, etc. Assisted by HAROLD F. JEWETT, M. D., Illustrated by 80 Wood Cuts and 5 Colored Plates. Lea Brothers & Co., New York and Philadelphia. 1901. Cloth, 12mo. Pp., 386.

Of the various hand-books on obstetrics, this is one of the very best. It is the second edition—although not so stated on title page. Most attention has been given to practical points, and has a distinct value to the practitioner as well as the student. The illustrations are all well selected and drawn. It is a good ready-reference book in a moment of need, and can be easily carried around in the usual gripsack of the doctor with his necessary instruments, etc. It has a good index. The few typographical errors should be changed in the text from the table of errata.

Diseases of the Intestines. *Their Special Pathology, Diagnosis and Treatment.* By JOHN C. HEMMETER, M. D., Philos. D., Professor in the Medical Department of the University of Maryland; Consultant to the University and Director of the Clinical Laboratory etc. In Two Volumes. Volume I—Anatomy, Physiology, Intestinal Bacteria, Methods of Diagnosis, Therapy and Materia Medica of Intestinal Diseases, Diarrhea, Constipation, Enteralgia and Enterodynia, Meteorism, Dyspepsia, Enteritis, Colitis, Dysentery, Intestinal Ulcers, Intestinal Neoplasms, etc. With many Original Illustrations, some of which are in colors. P. Blakiston's Sons & Co., 1012 Walnut Street, Philadelphia. 1901. Large octavo, 740 pages. Cloth, \$5.00 per volume.

Dr. Hemmeter established his authorship in his great work on *Diseases of the Stomach*, which has passed through two editions, the first of which was published in 1897, and the profession could not have wished a better writer for *Diseases of the Intestines*. The book before us is a great work—dealing as it does with diseases of organs essential to health and life. We find much of original research in this book; and both from a theoretic and practical standpoint it must take rank with the great books of to-day, and the best we know of on the diseases of which it treats. Furthermore, the language is plain, and the work is exhaustive in every essential particular. Volume I is divided into three parts.

Part I treats of Anatomy, Histology, Physiology, Bacteriology and Pathology of the Intestines and Physical Methods of Diagnosis. Part II treats of Therapy and Materia Medica of Intestinal Diseases, including Dietetic Treatment. Part III is on Intestinal Clinic—including the diseases named above in the title. We will not say there is no error in the book; but if there is, we have not been able to recognize it; and the advice given is such that any practitioner, it seems to us, should be willing to follow. We await the coming of the second volume with much interest, and we know it will be profitable. Every doctor should have this book.

Editorial.

Richmond Academy of Medicine and Surgery.

During the past year, Dr. Stuart McGuire has presided with marked success over the meetings of this Academy—bringing out papers and discussions of interest at nearly every semi-monthly meeting. The meetings are held on the second and fourth Tuesday nights of each month in the hall of the Travellers' Protective Association, corner of Main and Third streets, and members of the regular profession visiting the city are always welcome guests, with the privilege of participation in the discussions. The Academy has rented the hall for 1902, with the privileges of the library, the reading-room, the pool-room, etc. During the annual election of officers, held December 10th, Dr. Lewis C. Bosher was elected president for the term beginning January, 1902. It is needless to add that he will make a fine officer—continuing the good work so ably carried out by his predecessor. Drs. M. W. Peyser and William H. Parker were, respectively, re-elected secretary and assistant secretary. Dr. E. J. Moseley, Jr., is continued as treasurer, and Dr. Marvin W. Nichols as librarian. Dr. William

S. Gordon is chairman of the Judiciary Committee.

Surgeon-General U. S. Navy.

On December 9th the President sent the nomination to the Senate of Medical Director William K. Van Reyepen to be Surgeon-General and Chief of the Bureau of Medicine and Surgery of the United States Navy. Dr. Van Reyepen has made a good officer, and his promotion will be well received by the profession generally.

Degradation of the Medical Department of the United States Army.

Dr. Charles A. L. Reid, of Cincinnati, Ohio, ex-president of the American Medical Association, was given a banquet at Marion, Ohio, on the night of December 10th by the medical profession of Northern Ohio. In the course of his remarks on pending congressional topics, viewed from a medical standpoint, he said: "It seems, from evidence that has recently come from within the army itself, that the Medical Department has not only been degraded, but that it is practically without authority. This was strikingly, indeed tragically, illustrated during the recent war. A commandant was in charge of a quarter of the entire army. His command was made up of the flower of American manhood, and was encamped at a health resort. He, however, in violation of the precedent of the usually cultivated and competent gentlemen of the line, but acting under the permission of existing army regulations, not only set aside recommendations from his sanitary officers, but by personal example incited his men to violate the most necessary sanitary laws. The result was what might have been expected. Of the 50,000 men of his command, 12,000 were invalided, while nearly 1,000 died. If the commandant had disregarded the advice of his scouts and led his men into ambush with these results, he would have been court-martialed and dismissed from service. The regulations, I am advised, fix no responsibility for this unparalleled crime, the enormity of which is just beginning to be realized.

"An officer in the service who to-day agitates this unsavory subject is banished to the Philippines. No wonder the Surgeon-General cannot fill the sixty and more vacancies now existing in his corps. Self-respecting medical men are not offering themselves for a dread service that is dominated by gag-law and tyranny. But such methods must fail. The agitation cannot stop until responsibility is fixed for the enforcement of regulations. The bumptiousness of an incapable commander must deprive the medical officer of his authority."

The fact alluded to by Dr. Reid had escaped our attention. We are sorry we do not know the name of such a tyrant, that we might hold his name in the same contempt that belonged to Nero. Petitions must go in to Congress from every quarter asking relief from such tyranny. Do not wait until the next war; for then our brothers and sons may be exposed to the cruelties of such a beast.

She Liked the Hospital.—Not long ago at a provincial hospital an old woman, who was being discharged completely cured, was having a last interview with the house physician. "Well," he said, "you have to speak well of the hospital now, won't you?" And the old woman replied: "Ay, that I will, doctor. But, sure, I never spoke ill of it. My 'usband died here."

A Very Serious Case.—Late one evening a doctor received a note from a couple of fellow-practitioners, saying: "Pray, step across to the club; we are one short for a rubber." "Emily, dear," he then said to his wife, "I am called away again. It appears to be a very serious case, for there are two doctors already in attendance."

Heroic Measures Needed.—Doctor: Well, you got those leeches I sent for your husband, Mrs. Giles.

Mrs. Giles: Yes, zur; but what on earth be th' good o' sending the little things for a girt big chap like he? I jes' took an' elapped a ferret on 'un!—Punch.

"A Movin' Medsin."—A colored woman threw the odds and ends of medicine left after her husband's death into the fire. The explosion that followed carried the stove through one of the windows. "Mos' pow'ful movin' medsin I eveh saw'd," said she. "No wondah the ole man gone died."

That Wouldn't Do!—First Doctor: What makes you think the patient will die if we don't perform the operation?

Second Doctor: That isn't the point. This is a new disease, and if he should live without an operation it would establish a precedent.—*Life.*

How Does It Differ?—Newyorkitis is the title of a new work by Dr. John H. Girdner. Speculation is rife as to how this new disease differs from the old orchitis.—*N. Y. Med. Journal.*

"Qui Palmam Meruit Ferat."—It has been suggested by some one, who evidently harbors a kindly feeling for the medical profession that is scarcely to be expected, that a physician's name should monopolize a marble tablet made in the "Hall of Fame," inasmuch as the doctors have already been responsible for the erection of such a vast number of suitable inscribed marble slabs in the various cemeteries of the world.

How It's Done.—Medical Student: People don't want young doctors. How on earth do they get started?

Professor: It's simple enough. They just sit in their office and fret and worry over the rent until their hair turns gray, and then the patients come with a rush.

One On the Doctor.—"No, I am not a Christian Scientist," said Kandor.

"But you believe in throwing physic to the dogs," remarked Dr. Krabbed.

"Not if it happened to be your physic and my dogs."

Heard in the Butcher Shop.—Butcher: Come, John, be lively now. Break the bone in Mr. Williamson's chops, and put Mr. Smith's ribs in the basket for him.

John (briskly): All right, sir; just as soon as I've sawed off Mr. Murphy's leg!—*Tit-Bits.*

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GUNSHOT WOUND OF THE ABDOMEN.*

By WALLACE NEFF, A. M., M. D., Washington, D. C.

The most discouraging wounds the surgeon is called upon to treat are gunshot wounds of the abdomen. This is due to the fact that a large percentage of the cases have no chance of recovery, either with or without surgical intervention, on account of the nature of the injury inflicted. In the light of the experience in recent wars, a radically different mode of procedure must be followed in military service from that pursued in civil practice. This is due to the opposite conditions that prevail, the chief differences being in the composition and calibre of the bullets, the range, and the physical condition and environment of the patient at the time the injury is produced. The majority of the wounds of the abdomen now received in warfare are made by the small calibre, hard, steel-mantled, surgically, but not bacteriologically, aseptic bullet, of high velocity, flat trajectory, and usually at a range beyond the zone of explosive effect. The men wounded are young, strong and in the full vigor of health, and, in most instances, have been fasting when the wounds are received. Consequently the alimentary tract is practically empty, the explosive effect of a bullet entering a fluid organ is absent, there is little or no extravasation of the intestinal contents into the abdominal cavity, the danger from shock, peritonitis and septic infection being thereby greatly lessened. In civil life exactly the opposite conditions obtain. The wounds are made by bullets always infected, of large calibre, low velocity, and at short range. The force of impact is greater, the apertures larger, shock more severe, and the danger of infection from the skin and clothing greatly en-

hanced. The physical condition of the patient is usually bad. They are older, and frequently under the influence of alcohol. The alimentary tract is full, the explosive effect marked, and the danger from extravasation of the stomach and intestinal contents, and of hemorrhage largely increased.

Statistics.—Alcock states that before the days of modern surgery, out of 3,000 gunshot wounds of the stomach, only one recovered. (Henry Morris International Enc. of Surgery, Vol V, p. 512.)

During the civil war, of 3,475 penetrating abdominal wounds, 3,031, or 87.2 per cent., died. Not a single case of wound of the small intestine recovered. Fifty-nine of the large intestine got well. (Otis & Huntington Med. and Surg. History of the War of the Rebellion). In the English and French armies in the Crimea, the death rate was 92 per cent. and 91 per cent., respectively. (Col. Stevenson, Brit. Med. Jour., Aug., 1899.)

During the Franco-Prussian war the mortality was 76 per cent. In the Græco-Turkish war Dr. Abbott reports 6 cases; 3 were not operated on and died. Of the 3 operated on 2 recovered, the other died.

Col. Whitehead reports that during the Tirah campaign there were 8 cases. Five operated on and all died. The other 3 did not require operation, and recovered.

In our army during 1898, among the regular and volunteer troops, there were 56 cases, of which 40 were fatal. During 1899 there were 60, and 41 fatal. A total of 116 cases and 81 deaths. A mortality of 70 per cent. Of 10 operated on 9 were fatal. Of the 60 cases in 1899, 10 were able to return to duty, and 8 others survived the injury. (Surgeon-General's Report for 1900, p. 297.)

The following tables show the statistics in civil life: In Oliver's table of 58 cases, 22 were operated on, 5 recovered, and 17 died, or 22½ per cent. recoveries. Of 19 perforat-

* Read before the Medical and Surgical Society of the District of Columbia, November, 1901.

ing wounds, in which laparotomy was done, 2 recovered, or 10i% per cent. (J. C. Oliver, Lanat. Clinic, May 7, 1898.)

In Grant's table of 233 cases operated on, the mortality was 52 per cent. (H. H. Grant, Trans. South. Surg. and Gyn. Ass'n, 1899, p. 40.)

In Morton's table of 110 laparotomies, 62 per cent. died. (T. S. Morton, Jour. Am. Med. Ass'n, Jan. 4, 1900.)

Of 107 cases, in each of which a lesion existed, operated on by 15 different surgeons, there were 66 recoveries and 41 deaths. (Year Book of Surgery, 1901, p. 83.)

Coley gives a mortality from cases operated on in the first 12 hours of 53.9 per cent. At a later period of 77.3 per cent.

Reports of the Anglo-Boer war are incomplete as yet, the most recent and valuable contribution being "Makin's Surgical Experiences in South Africa." His observations are especially interesting and instructive. He found that wounds of the solid viscera proved to be of minor importance when produced by bullets of small calibre. Wounds of the intestinal tract showed themselves capable of spontaneous recovery in a certain proportion of cases, afforded but slight opportunity for surgical skill, and the results deviated but little from those of past experience. Failures were due to the severity of the local injury, or to operations being undertaken too late. Many fatalities were due to association of other injuries, especially of the thoracic cavity. Recoveries were limited to wounds caused by bullets of small calibre. There were a few recoveries from shell wounds of the viscera, none from the Martini-Henry, or large sporting bullet. "The sum of my experience," he says, "was to encourage the belief, that unless the intestine was struck in such a direction as to render lateral displacement an impossibility, the gut often escaped perforation."

Diagnosis.—Such a variety of abdominal wounds may be produced that the following comprehensive classification of Oliver commends itself, and is worthy of general adoption—viz.:

1. Non-penetrating wounds.
2. Penetrating, but not perforating any viscus.
3. Penetrating and perforating some hollow viscus.
4. Penetrating and perforating some solid organ.
5. Penetrating and perforating hollow and solid viscera.
6. Penetrating with wounds of blood vessels.

7. Penetrating with perforation of viscera and blood vessels.

8. Penetrating with other serious injuries, or diseases.

The first thing to determine is whether we have a penetrating or non-penetrating wound to deal with. If the bullet has traversed the body, and the wounds of entrance and exit are in a direct line, the viscera have necessarily been injured. Exploration of the wound under proper aseptic conditions is the only method of ascertaining whether penetration and perforation have occurred. A probe should never be used. The wound should be enlarged, and the finger introduced, rubber gloves being always worn. When a missile traverses the abdominal cavity we may be reasonably certain of having one, or both, of two grave conditions to deal with: Either extravasation of the intestinal contents, or a hemorrhage which cannot be controlled except by mechanical means. Perforating wounds of the stomach, bladder and intestines are very much alike, the size of the wound depending upon the amount of fluid present. The shape and position of the wound are determined by the course of the bullet, whether longitudinal, transverse, or oblique, to the direction of the intestinal coils. The openings of entrance are a little smaller than those of exit. The bullet usually punches out a piece of the bowel, and even when it strikes at a tangent, it makes an opening too large to be plugged by a hernia of mucous membrane, or to successfully prevent escape of the contents. Sir Wm. McCormac says: "The bowel is nearly always perforated, faeces are extravasated, and very frequently there is some other complication as well."

Perforations may number from 1 to 17, with recovery. The diagnosis of visceral lesion depends on three symptoms—shock, vomiting and pain. Not the extent, but the duration of these symptoms. When hemorrhage occurs the patient becomes blanched and pulseless, very restless, throwing himself about, sighing respiration, dullness on percussion on the dependent side, together with all the signs of constitutional shock. The hemorrhage may be due to a rupture of one of the solid organs, or to laceration of the arteries and veins. It seldom occurs to any extent from vessels of a ruptured intestine. When there is a rupture of the intestine, shock, vomiting and pain become more marked. If sufficient time elapses before operation, peritonitis develops. The pain becomes more general, and distention, tympanites and rigidity of

the abdominal walls make their appearance. It is impossible to distinguish between tympanites from air free in the abdominal cavity, and air still retained in the intestine. The escape of fæces, or intestinal gas, by the external wound is positive proof, but of rare occurrence. If the gas escapes in this way, it does so before the case comes under the observation of the surgeon. Escape of fæces is exceptional, and seldom occurs before 24 to 48 hours. McCormac only saw it in 1 case in 48. Bernard in 3 cases out of 36.

Obliteration of liver dullness, and blood in the stools, are signs of little value in diagnosis. Senn's hydrogen gas test for perforation consists in inflating the intestinal tube with hydrogen gas from pure zinc and sulphuric acid, collected in a rubber bag holding four gallons. The gas is forced into the rectum by a pressure of 2½ pounds to the square inch, sufficient to overcome the ileo-cæcal valve, and is harmless to the rest of the intestines. If there is no perforation, the whole tube from anus to stomach is inflated. If perforation exists, the gas escapes, and causes free tympanites in the abdominal cavity, or issues through the wound in the parietes.

E. M. Sutton (*Jour. Am. Med. Ass'n*, Dec. 30, 1899), inflates the bowel with ether. The apparatus consists of a rubber tube to insert into the rectum, a bicycle pump, and aspirating bottle, in which 2 grams of ether are placed. If vapor of ether escapes from the mouth, there is no perforation. These methods are useful for purposes of demonstration, and to those who are not willing to assume the existence of a visceral lesion on a diagnosis of penetration. Their employment consumes valuable time, and cannot fail to intensify the shock the patient is laboring under.

Treatment.—The success in the treatment of gunshot wounds of the abdomen is largely in the hands of whoever sees the case first. In military service it depends upon the prompt application of the first aid dressing. In civil practice, dirty fingers and probes, lack of a protective dressing to the wound, and the abuse of stimulants are largely responsible for many fatalities. The treatment is so essentially different in military and civil practice that it should be considered separately.

1. *Military.*—An expectant plan of treatment is to be followed. The first aid dressing, quick and easy transport to a field hospital, absolute rest and quiet, starvation for 24 to 48 hours.

After that hot water in teaspoonful doses, followed by milk. Rectal feeding and stimulation when the lower bowel is not injured. No morphia, but strychnia and salt solution. If the patient is dying of hemorrhage, laparotomy should be made, but never except in desperate cases in a field hospital. It is doubtful if it should be done even then, owing to the time required, number of assistants necessary, the absence of proper facilities for doing aseptic work, and the unfavorable atmospheric conditions. A surgeon cannot sacrifice a number of promising cases, where prompt attention is essential to recovery, for one apparently hopeless case, however commendable the effort might be. It is his duty to render "the greatest good to the greatest number." The class of cases that are suitable candidates for operation in a field hospital will probably die whether operated on or not. Until the conditions more nearly approach those of civil practice they had better be treated expectantly.

2. *Civil.*—An expectant plan is contra-indicated in penetrating wounds if seen early, and a laparotomy can be made under proper aseptic conditions. In cases of hemorrhage, intervention offers the only chance of recovery. With the smaller vessels hemorrhage is persistent and profuse into the peritoneal cavity. There is no tendency to the formation of clots in the severed ends of abdominal vessels. This may be due to the looseness of the tissues, preventing tension by the effused blood in the cut ends of the vessels, or it may be due to the absence of the effect of air. When the abdomen is opened a large amount of extravasated blood is found, even when the vessels are small. Extravasation of intestinal contents will produce peritonitis. Section is necessary to repair the damaged parts, to cleanse the peritoneum and prevent peritonitis.

Profound shock and collapse are contra-indications for operation, or at least it should be delayed until reaction occurs. If due to hemorrhage, an operation must be made, for the patient will not respond to warmth and stimulants, and death will follow if bleeding is not controlled. If not due to hemorrhage, when the patient recovers from shock, examine for penetration. An incision should be made upwards and downwards from the edge of the wound down to the peritoneum, and explored with the finger—not a probe—rubber gloves being worn. If penetration has occurred, proceed with the operation. In the majority of cases

the incision should be made in the median line, or a little to one side, through one of the recti muscles. The effused blood should be removed, and the bleeding vessels tied. Senn recommends compression of the abdominal aorta as an aid to this end. When the hemorrhage is controlled, the wounds in the intestine should be attended to. If one perforation is overlooked, the result may be fatal. Many authorities recommend that the bowel should be examined from the cæcum to the stomach, and to the rectum. The examination should certainly be as complete as the patient's condition will permit.

Each perforation should be closed by Lembert, or Czerny—Lembert sutures, fine silk, and a round needle being employed. Resections are necessary when loss of substance will diminish the calibre of the tube, when there are several perforations close together, and when the mesenteric edge is involved. When the injuries are within a foot of each other it will reduce the shock and save time to excise that portion of the bowel, and a single enterorrhaphy will then restore its continuity. Suturing at right angles to the long axis of the bowel will prevent a reduction of the calibre of the tube. Complete excisions render the prognosis grave, owing to the length of the operation, increased shock, and the difficulty in making a tight seam.

When an end-to-end anastomosis is necessary, and a Murphy's button is not at hand, Mannell's method is probably the best. Scum's plates and Mayo Robson's decalcified boue bobbins are not as easy of application, are more apt to obstruct the lumen of the bowel and do damage from the necessary handling of the intestine than Murphy's button, which can be employed with rapidity and ease, and is by far the best mechanical means that has yet been devised for the purpose. When there is contamination of the peritoneum from extravasation of the intestinal contents, many authorities recommend irrigation with sterile water, or salt solution, at a temperature of 105 degrees. It is far better to employ dry sponging, carefully wiping out the cavity and the bowels, and thus prevent the dissemination of the escaped contents, and avoid providing the necessary moisture for the development of bacilli.

In all cases of perforation of the stomach and intestines, drainage should be employed for at least 24 to 48 hours.

Lodged bullets should not be searched for, unless they give rise to trouble. They can be lo-

cated by the X-ray when the patient is convalescent, and removed, if necessary.

Prognosis.—When the diagnosis of penetration is made the viscera will not escape injury in more than 4 or 5 per cent. of the wounds. The death rate is about 90 per cent. in cases not treated by laparotomy. After 12 hours the chances are against recovery. After 48 hours the case is almost hopeless. When peritonitis is developed the apertures in the intestine, or viscus, may not be found, and, if found, the tissues will not stand suturing. If the alimentary canal is perforated, injuries in certain segments, even if perforated by small calibre bullets, may recover spontaneously. The prognosis is best in the following order: ascending colon, rectum, stomach, sigmoid flexure, descending colon, transverse colon, small intestine. Spontaneous recovery is very rare in perforating wounds of the transverse colon and small intestine. Wounds of the solid viscera usually heal spontaneously, and give no trouble, unless great vessels are injured. This includes all organs except the pancreas. Wounds of the kidney are the least likely to give trouble. Wounds of the bladder, if in the intra-peritoneal segment, often heal spontaneously.

These favorable results are due only to small calibre bullets. The prognosis in injuries of the viscera depends upon coexisting injury to other organs, especially of the thorax, which is quite common.

CONCLUSIONS.

1. *In Military Service* in the field, an expectant plan of treatment promises the best results. This is due to the small calibre bullet, long range, and prompt use of the first aid dressing.
2. Expectant treatment is necessary owing to the climatic conditions, the absence of the proper facilities for doing aseptic work and for carrying out the after treatment, and the inability of the surgeon to devote the *time* necessary to apparently hopeless cases.
3. *In civil practice*, laparotomy is indicated. When in doubt as to penetration, make an exploratory incision. When hemorrhage is suspected, or multiple injuries of the viscera possible, operate immediately.
4. The good results in civil practice are due to prompt surgical intervention.
5. If the conditions were reversed, and the wounds in warfare could be treated in the field as they are in civil hospitals, there would doubt-

less be a larger percentage of recoveries. On the other hand, if the wounds in military practice were of the variety found in civil life, there would be few, if any, recoveries from an expectant plan of treatment.

1730 Connecticut Avenue.

DISCUSSION.

Dr. Kober said this is a subject in which all are interested. In the medical and surgical history of the war of the rebellion, Otis recommended and advised operation, but in this he was opposed by Ashhurst. In a paper Dr. Kober had disagreed with Ashhurst. Field hospitals are not always conducive to aseptic operations, yet he advocates timely interference in gunshot wounds of the abdomen, on account of the hopeless character; and with reasonable antiseptic precautions in young and otherwise healthy subjects the results ought to be more satisfactory.

Major LaGarde, U. S. A., said the paper of Dr. Neff was thoroughly in accord with the military surgery of the day. Coley's statistics show a mortality of 57 per cent. if operation is done within twelve hours. After the expiration of twenty-four hours the mortality is greater. In military surgery in the field aseptic operating is impossible, the surrounding conditions are bad. He said gunshot wounds of the abdomen should be let alone, unless an operation can be performed immediately behind the firing line, if such a thing were possible under suitable conditions. Operating in a tent, exposed to heat, dust, etc., is difficult. Referring to the report of one of Dr. Calhoun's contract surgeons, U. S. A., he stated that nine men had died during one night from wounds of this character, and suggested that a few of the military surgeons should be specially trained and equipped for abdominal wounds, to operate when environments were suitable.

Major Hoff, U. S. A., said at a recent meeting of the Association of Military Surgeons it was the almost unanimous opinion that laparotomy on the battle-field was unjustifiable. A diagnosis of actual conditions in gunshot wounds of the abdomen is most times a matter of difficulty, and perforation is not invariable. He related a case of a man who had ten bullet wounds in the left hypo-chondriac region from apparently the same ball, but no communication between the two wounds could be established. The following morning, urine not having been pass-

ed, a catheter was introduced. The urine drawn contained about 50 per cent. of blood; the patient was in a state of collapse, saline infusion used. The man rallied, there was entire absence of tenderness over abdomen, the blood disappeared from the urine in a few days; in four or five days the wounds healed, and the man recovered. A clear diagnosis was never made. Subsequently the man developed gonorrhœa. The questions are, what viscus, if any, was injured by the bullet? What caused the blood in the wound, and what was the occasion of the collapse?

Surgeon-General Sternberg, U. S. A., was much pleased with the paper. In gunshot wounds of the abdomen, a thing very often overlooked is that a bullet is more dangerous after passing through an intestine than when simply passing through muscular structures. The missile becomes infected by the contents of the intestine and the bacteria present. Any saprophytic bacteria may cause trouble, such as necrosis along the track of the bullet. Related a case of wound of the abdomen, twenty-four hours after a piece of protruding omentum was removed, laparotomy was not performed, and the man recovered. In those cases of gunshot wounds of the abdomen not calling for immediate operation, all conditions being favorable, an expectant plan of treatment should be followed. By military surgery is meant that in the field. At army posts they are equipped with every appliance for aseptic work. Military surgeons do not hesitate for aseptic reasons, but they do not have the time to devote to the after treatment when in the field. The suggestion of Major LaGarde, as to having a few specially equipped abdominal operators, had called to mind a suggestion of a charitable lady, who, when learning the suffering of the men and nurses in Cuba, thought the government should have made provision for these by having hospitals established there before the army of invasion had landed.

Dr. Balloch said the distinction between civil and military surgery in the field should be insisted on. The mantled bullet, with high velocity, is now generally used in war, and the wound resulting is practically an incised wound; in civil life the bullet is softer, larger, and of lower velocity. The mortality after an operation should not be greater than 40 per cent. He advocates an early operation.

Dr. Hickling advocated early operation. He could see no reason for not operating on the

field. Bull, of New York, had first operated for gunshot wound of the intestine in 1885.

Dr. Köber said, in regard to the claim made for Dr. Bull, that this operation had been advocated in the Crimean war by Lequest, Bentley, Kinlock, and two or three other American surgeons had operated previously to Dr. Bull.

Dr. Reyburn said his experience in military surgery in this class of cases had been unfavorable. He had seen a great many cases of gunshot wounds of the abdomen, but this was before the days of aseptic surgery. He referred to a case operated upon by Dr. J. B. Hamilton, where sixteen wounds in the intestines had been sutured; the operation had been done immediately, and was successful. He advocated conservatism.

Dr. Neff, in closing, said that during the Cincinnati riots (1885) he saw a great many gunshot wounds, but did not recall a single case of recovery from gunshot of the abdomen, either with or without operation. The wounds were made with the Springfield rifle, 45 calibre, at short range. Dr. Conner, of Cincinnati was one of the first surgeons in this country to perform laparotomy for perforating gunshot wounds of the abdomen.

It was very gratifying to him to have his paper discussed in such a complimentary manner, and to receive the endorsement of such distinguished authorities on gunshot wounds.

ANGINA PECTORIS.*

BY MARVIN E. NUCKOLS, M. D., Richmond, Va.,

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In reviewing all accessible literature on the subject, I find that there is a diversity of opinion as to the exact nature of the condition, some contending that it is but a symptom of some more or less grave vascular lesion, while others claim that it is a disease in itself, always having a definite group of symptoms. No less an authority than William Osler states that it is nothing more than a symptom. Clifford Allbutt, a distinguished English physician, holds the exact opposite. When we find such authorities as the above holding opinions so entirely different, we should not wonder that the lesser lights have vague and indefinite ideas regarding angina pectoris.

In discussing this condition, I shall of necessity have to deal with a great deal that is now well known to you all; however, in doing so, I shall endeavor to present it in such a way as to arouse some interest and thus provoke a full discussion of the subject. I wish to be understood in the beginning as not believing in pseudo-angina pectoris; but believe that angina pectoris is angina pectoris, and that the only difference in the cases seen is one of degree; therefore, I eliminate such conditions as the agitations of neurotic women, generally due to hysteria, indigestion, or intercostal neuralgia, and also certain spasms of tobacco poisoning, which differs widely and fundamentally from angina pectoris.

Having, then, eliminated this, we will take up angina pectoris proper, and we shall find that it is characterized by a very definite group of symptoms. Pain is usually the most prominent, but it is the character of the pain which is of so much value. It cannot be likened to any other pain, being sharp and stabbing, located behind the sternum (not in the heart), radiating upward toward the left shoulder, neck and head, and down the left arm into the fingers, and sometimes into the testicles, which may swell. As I have mentioned, there is no pain in the heart, but there is a feeling of depression or of something lacking in this region. The peculiarity of this pain is that it is accompanied by a feeling of constriction about the chest and neck, likened to the pressure of a vise. Balfour describes it as a feeling as if a mailed hand grasped the chest and squirted through its fingers flashes of agony. This is often accompanied by convulsive movements of the muscles of the whole body, but particularly of the chest, neck and arm.

The expression is extremely anxious, manifesting an indescribable fear of impending dissolution. The attitude is one of terror-stricken stillness. The body is covered with beads of sweat, and the extremities are cold and clammy. Strange to say, the pulse is, as a rule, unchanged. We have no dyspnea like that so often seen in heart disease, though respiration may be increased in frequency, and during severe paroxysms, temporarily suppressed. Pain is sometimes entirely absent, or may begin in the hand and extend upward. In these cases the retrosternal pain is not so severe.

The indescribable fear of impending death is never absent. The preceding are the usual symptoms of an ordinary attack, which may last

* Read before the Richmond Academy of Medicine and Surgery, November 26, 1901.

only a few seconds or a few minutes, to be followed by others with increasing frequency.

The attacks are brought on by some unusual or violent exercise, though they may come on while in bed during the night, without any apparent cause. As to the actual cause of angina, very little is definitely known. It is certainly not always due to heart disease, as is abundantly proven at both the bedside and at post mortems. A fatal case is reported by T. E. Bullard, which he saw in one hundred and five paroxysms of true angina, during the last of which the patient died. There were no evidences during life or after death of any organic change. Whatever constitutes angina pectoris, this fact is very evident—that a heart organically diseased will fail under repeated attacks of angina, whereas one with no evidence of disease may partially or completely recover.

It is argued by some that a vaso-motor spasm is the immediate cause of angina, bringing on an increased arterial tension and throwing extra work upon the heart. In support of this theory, they lay great stress upon the good results derived from the administration of nitrites, but we must remember that the nitrites relax the heart as well as the arterioles, and that they possess certain anodyne and antispasmodic properties. The majority of cases of angina show but little, if any, increase in tension. If angina is due to increase in tension, why don't we always have it in all forms of heart disease accompanied by increase of tension? Is it not possible for pain to cause the increase in tension if there be any? We have abundant evidence that pain can cause increase in tension. As examples of this I might mention kidney colic, cramp in the abdomen, etc.

A theory held by many is that it is a cramp of the heart muscle. Osler states that we may have a localized cramp, or a cramp of some of the muscular fibres of the heart. This theory to me seems altogether untenable, for I cannot conceive of a muscle or some fibres of a muscle undergoing cramp and still being able to act. It seems to me the power of the muscle is temporarily lost. The quality of the heart muscle to undergo rhythmic contractions is too deeply implanted in its nature to give place to any change, save to either stop completely and permanently, or to prolong diastole. No drug or electrical stimulus can do more than increase force of systole or prolong diastole.

A third theory is that it is nervous in origin. This, to my mind, seems to explain some cases,

particularly those with pain beginning in the hand and extending upward, resembling the aura of epilepsy.

A theory accepted by many is that it is a neuritis of the cardiac plexus. In this case, pain should always be present, for it is hard to conceive of a neuritis without continuous pain.

A theory that will explain a great many cases is that the cause lies either in an acute or chronic aortitis near the root of the aorta, and as the cardiac plexus of nerves lies in close relation a neuralgia may be set up secondarily in this plexus. However, let the cause be what it may, we know that the condition is always characterized, with very little variation, by a definite group of symptoms, and that we do not always find manifest organic lesion either of the heart or blood vessels.

It is supposed that the pain is a referred pain, and that it is due in many cases to increased pressure on an inflamed aorta, manifested through the cardiac plexus. One proof of this is seen in mitral regurgitation; if angina has been present relief is afforded when the compensation fails.

As to how angina kills, there is a difference of opinion. Some say that it is a reflex from inhibition of the vagus. This inhibition is brought about by the violent pain, the weak and degenerated heart and blood vessels being unable to survive the shock.

The treatment may be divided into two parts: (1) During the attack. (2) During the interval. *During the attack*, inhalations of amyl-nitrite. If these fail, use chloroform or ether by inhalation, and, as a last resort, give morphia and atropia hypodermically. Use hot applications over the region of the heart.

During the intervals. (a) Hygienic and dietetic. Complete change in habits must be advised. Attention should be given to the bowels, to see that they act regularly. Avoid excesses of all kinds, particularly of eating and drinking. The diet should be regulated so that no digestive disturbances shall arise. Instructions should be given to avoid excitement and violent exercise.

(b) Medicinal. Nitroglycerin should be given in full and increasing doses. If degeneration of the arteries or any tendency toward rheumatism be evident iodides should be given in full doses, extending over long periods, but always with an eye to the condition of the stomach.

BLOOD EXAMINATION, FROM THE STAND-POINT OF THE GENERAL PRACTITIONER.*

By F. W. HIGGINS, M. D., Cortland, N. Y.

If we expect that in a modern hospital the examination of the blood should become a routine like urine analysis, and that important aid in diagnosis and prognosis and treatment will thus be obtained, is it possible for us, as general practitioners, to gain some benefit from undertaking such examinations? This is the problem which the writer of this paper has stated for himself. His object is to determine how much of all the mass of published observations on the physical, chemical, and microscopical examination of the blood may be utilized by us in general practice.

One limitation that must be recognized is the time element. The hackneyed "busy practitioner" has several spare half hours, if he will husband them, that might be utilized in the clinical examination of the blood of his patients. But it is manifestly impossible for him to give to the task more than fragments of time. Therefore he must choose the less complicated methods. It is necessary that he have a table especially devoted to such work; that he have a north light, and that his microscope always stands ready before the window; that his stains and instruments are all carefully labelled and at his elbow; that he have some one to clean up apparatus after him, and put them back in their places; that he have the steps of each examination tabulated and in front of him; that he keep everything scrupulously clean; and, lastly, that he does not undertake too much. Another precaution which Janeway tells us is not unnecessary even in larger laboratories, is to label each specimen and step immediately, that the final conclusion may be applied to the right patient.

The final side of the question is one which will occur to most of us, even when smitten by the scientific possibilities of each study. Something may be done with such an outfit as every physician should possess. A microscope with 1-5 objective will show the corpuscles, but satisfactory work can be done only with an immersion lens. The percentage of hemoglobin can be determined within 10 per cent. by letting a drop of blood fall on white paper, and comparing it with Tallquist's color scale. The Thomas-Zeiss blood count apparatus may be termed indispensable, and costs about fifteen dollars.

* Original abstract of a paper read before the New York State Medical Association, October, 1901.

Hardly necessities, the spectroscope and hematocrit are the luxuries to be obtained as the fad grows on one. It may be said that twenty-five dollars will start one at work, and one hundred dollars more will be spent if his interest increases.

The third question that will occur to the general practitioner who determines to know something about the condition of the blood in his own cases is that of obtaining the technique. The very recent graduate is supposed to have acquired it. But we who took our degree before Ehrlich's writings had aroused general interest must work out our own salvation with the myelocyte and megaloblast.

Fortunately some good text-books have been recently published. Cabot is the best known. There is certainly no better book in English than the recent fourth edition. Stengel has a fine article in the *Twentieth Century Practice of Medicine*, and will soon issue a text-book. Ewing's *Clinical Pathology of the Blood* is recent, and very helpful. For those who read German there is a large literature.

Personal instruction is most valuable and time-saving. But even for those who have neglected the subject altogether, patient labor will enable to master the necessary details. The essential features are soon demonstrated. Considerable practice is required to bring out all that careful staining may show.

As already intimated, the necessary apparatus is a twelfth objective, a blood count apparatus, a Tallquist hemoglobinometer, an ordinary urinometer, and a few stains. With these we are prepared to obtain the specific gravity of the blood, to count the red and white corpuscles, to arrive at the approximation of the hemoglobin, and to study smears.

For specific gravity the method of Hammar-schlag is accurate to one or two points, and much cheaper than any other. All that is required is a good urinometer. In it chloroform and benzine are mixed in such proportions that a drop of blood neither rises nor sinks, when the specific gravity of the mixture determines that of the single drop of blood. Care must be taken that no air mixes with the blood drop, and the determination must be made before it becomes altered by the media. The instrument must also be perfectly dry, that no water floats on top of the chloroform and is taken up by the blood. I have found the specific gravity varying from 1,032 to 1,062, so that a wide latitude exists. Excepting in dropsy, leukemia and pernicious

anemia, its variations correspond quite closely to the hemoglobin percentage.

In estimating hemoglobin a margin of at least 5 per cent. must be allowed. Two plain indications are obtained by its determination.

First, a surgical operation should not be undertaken if the hemoglobin is as low as 30 per cent. Deaver, in a recent paper, cited two cases operated on successfully in spite of this rule, but still the rule holds as good as any in our art.

Secondly, in diagnosis pernicious anemia is differentiated from cancerous cachexia by knowing that the hemoglobin ratio is higher than normal in the former, and lower in the case of cancer. The grade of chlorosis, and hence its chances of cure is determined by the hemoglobin test compared with the blood count.

The blood count is of importance in many ways. Extremely accurate work to be published requires the counting of a large number of fields, but practical results are obtained in fifteen minutes.

A great increase in the number of lymphocytes means leukemia, which can be diagnosed in no other way than by the assistance of a blood count. A leucocytosis of from 12,000 to 50,000 means an infection most often with formation of an abscess. Its importance in differential diagnosis is often second to no other symptom, but is never pathognomic. Marked examples of its usefulness are in distinguishing appendicitis from typhoid fever, intestinal perforation in the course of typhoid, and the onset of pneumonia when the physical signs are masked. The opposite condition, leukopenia, is found most markedly in fatal septicemia.

In general it may be said that suppurative, serious, and gangrenous inflammations produce marked leucocytosis. We must not forget that the leucocyte count falls when the abscess is walled off.

We are promised that the study of the leucocytes may be helpful in the prognosis of pneumonia. Absence of the usual leucocytosis looks to a fatal termination, while the return of the eosinophiles, absent at the height of the disease, foretells a favorable crisis.

A diminution of the number of red corpuscles is of great importance. It may be said that iron has frequently been given to a patient with white skin, who had no anemia, and derived no benefit from its use. The contrary is also true. A blood count furnishes the only rational data for the use of iron and arsenic.

Pernicious anemia would be found in many cases supposed to be cancer of the stomach if the blood examination were more common.

The study of the stained specimen is the most interesting of all the steps in the examination of the blood. It is here that the novice will feel most intensely his deficiencies. Now it is that his text-book directions fail him, and confusion, not wisdom, results from a multitude of counsellors. His troubles begin with making the smear. But after one learns just how, it is easy to prick the ear quickly and deeply, to wipe away the first drop, to resist somewhat the temptation to squeeze out the blood that is so loth to flow when you want it, to touch to a very small drop a cover glass that has been carefully washed in soap-suds and alcohol, and polished by rubbing. Upon this another is to be laid, and the two quickly drawn apart by sliding. After drying in the air, which requires but a few moments, we must employ one of the many staining methods recommended. For the amateur it is better to use no more than one or two, and thoroughly familiarize himself with these. Cabot says that he now uses no other than Ehrlich's triacid stain. He tells us the trick of success with it. The specimen must be thoroughly heated before it is used—heated until the blurred brown color of the reds, which you get in underheated specimens, is replaced by a golden yellow. Then the details within the leucocytes will be found delicately differentiated.

Goldhorn's polychrome stain, originally perfected for studying the malarial germ, has proved to be one of the best and most rapid for general work. Clear directions accompany it.

The study of stained specimens is eye destroying and time destroying work. Here it suffices to simply enumerate the details which a general practitioner may hope to see, and what they may indicate to him. The red corpuscles may be deformed, not the result of faulty technique. This poikilocytosis means very grave anemia. The centres may not take the eosin stain, indicating a deficiency of hemoglobin, which is chlorosis or grave secondary anemia. The malarial germ may be seen. Nucleated red cells may be present—the blasts. Normoblasts mean a too active proliferation of red corpuscles, the marrow throwing them out unfinished. Megaloblasts are of grave import, indicating a fatal type of anemia.

Turning now to the white corpuscles, we notice the relative proportion of polymorphonuclear, lymphocytes and eosinophiles. Leucocy-

tosis being already established by the blood, count an increase in the relative ratio of mononuclears would point to leukemia, in the polynuclears to the leucocytosis of infection. Two types of leukemia are determined by studying the greatly multiplied white cells. The presence of myelocytes indicates the spleno-myelogenous variety, while the lymphatic is shown by the great number of lymphocytes.

Iodophilia may reveal the presence of pus somewhere in the system. Eosinophilia may enable us to detect a case of trichinosis, which has been called rheumatism.

My endeavor has been to show that the routine examination of the blood may be profitably made by the general practitioner.

THE URIC ACID DIATHESIS AND ITS TREATMENT.*

By WM. S. GORDON, M. D., Richmond, Va.,

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In the treatment of the subject selected for discussion, I shall endeavor to be as brief and practical as possible.

From the chemical standpoint, uric acid is quite well known; from the physiological, it is quite well known; from the pathological, much has been established, while much remains to be ascertained. As regards the nature and treatment of morbid conditions in which uric acid is a factor, considerable additions to our knowledge have been made in recent years.

Avoiding conflicting theories and condensing established facts, I can only hope to present, in the time allotted for the reading of papers, a few thoughts for consideration.

In the first place, it may be stated that, while we know what uric acid is, and understand the definition of the term "diathesis," it is questionable whether the words placed side by side are capable of any intelligible construction. In other words, I am, for the most part, inclined to agree with Dr. Haig, who, in his remarkable book, says: "There seems to me in all this just nothing to necessitate the continued existence of the 'uric acid diathesis,' though doubtless many will regard it with some affection, because, for quite a large number of years, it has played

the part of a very respectable and convenient cloak for considerable ignorance." The words, as ordinarily understood, convey the idea that there exists in the body a condition responsible for the pathological manifestations of uric acid. I do not deny the laws of heredity—whatever the word means or implies; nor do I deny that certain individuals, the offspring of gouty forefathers yet apparently good regulators of their modes of life and careful observers of hygienic laws, become the victims of uric acid poisoning; but my study of this subject confirms me in the belief that of all so-called hereditary diseases, gout and its twin sister, lithaemia, are the least under the laws of heredity and the most under the direct personal control of the individual. The reasons for this statement will, I hope, be made clear.

Let us look for a moment into the chemistry and physiology of uric acid. Its formula is $C_5 H_8 N_4 O_3$. When pure it is colorless, odorless, and tasteless; very slightly soluble in cold water, a little more so in hot water; very insoluble in alcohol and ether; and freely soluble in solutions of the alkalis with the formation of neutral urates. It is dibasic. Its crystalline forms are familiar. So far as known, it is wholly of animal origin. Its salts consist, first, of neutral urates, which are decomposed by $H_2 CO_3$ or by carbonates, and which, consequently, cannot exist in the blood or urine; secondly, of acid or bi-urates, stable salts, less soluble than the neutral, but much more soluble than uric acid; and, thirdly, of hyper-acid urates, or quadriurates.

Urine, at the time of excretion, contains no free uric acid; but after standing for a time, reveals the crystalline form of the acid, freed from the metals. Sir William Roberts believes "that uric acid is excreted as a quadriurate; that, being in aqueous solution, the quadriurates are in a state of unstable equilibrium and tend at once to decompose according to" equations which, owing to their complexity, are omitted.

The amount of uric acid excreted by the human body in twenty-four hours on a mixed diet is stated by the authorities to be from seven to ten, or, possibly, fifteen grains. The proportion to urea would thus be about one to sixty. Haig claims that it is one to thirty-five. With a meat diet the ratio is increased, and with bread or vegetables, decreased. It is pretty well agreed that "the amount of uric acid excreted is a measure of the nucleoproteids ingested," and that excessive exercise increases, while rest di-

* Read before Medical Society of Virginia, November 6, 1901. The subject for General Discussion. Dr. Gordon was the leader. Dr. Pedigo followed with a paper on *Clinical Odds and Ends of Uric Acid*; after which the subject was open to "general discussion."

minishes, the absolute amount excreted. Personal differences must be taken into account.

The chemical composition of uric acid indicates that it is one of the means by which nitrogen is eliminated from the body. In the urine of granivorous birds, urea is practically absent, its place being supplied by uric acid, while, in all birds and in serpents, the salts of this acid constitute nearly the whole of the excrement. It appears, however, that at times uric acid is absent from the urine of the feline tribe of animals.

The interesting questions now arise, where, how, and why, in the human body, is uric acid formed? The blood, liver, spleen and other organs contain it. The spleen-pulp is especially rich in extractives; and it is remarkable that uric acid is formed in the spleen of certain herbivorous animals from whose urine it is absent. Comparative physiology teaches that when the livers of birds are extirpated, uric acid largely, if not wholly, disappears, while lactic acid and ammonia appear. This fact, in connection with others already stated, makes it probable that the human spleen and liver are both concerned in the formation of the product.

Is urea formed by oxidation and hydrolysis from uric acid, thus proving the latter to be an antecedent of the former? If so, the fact has never been established, despite the truth that uric acid can, by oxidation, be split up into urea and an organic acid. Nor can it be demonstrated that uric acid is the result of defective oxidation. Birds, whose oxidation processes are extremely active and whose bodily temperatures are high, excrete uric acid. On the other hand, frogs, which are cold-blooded animals with low oxidation, excrete urea. All that can be asserted is that there are substantial grounds for the belief that uric acid is the result of synthesis, and that the liver and spleen are the factories.

What purpose uric acid subserves in metabolism, and why the whole of nitrogenous elimination is not represented by urea, are questions which cannot be wholly answered.

Sir W. Roberts, quoted by Landois, surmises that uric acid is "a vestigial remnant in mammalian descent."

If, however, the evolution is from uric acid to urea, it is in order to explain the elimination of urea by frogs, and of uric acid by birds. Physiologists are well-nigh unanimous in attributing the acidity of human urine to the acid or bi-phosphate of sodium, which is produced by the

union of uric acid with a portion of the base of the neutral phosphate; and this combination is supposed to take place in the kidney. Exactly how the reaction is produced is unknown. Apart from these considerations we are left in the dark with regard to the physiological importance of uric acid; and not until more light is thrown upon this question shall we be able to deal satisfactorily with the pathological problems.

Bearing in mind what is known, however, we can approach, with some hope of success, the difficulties which beset us in the effort to explain and rectify the morbid processes produced by uric acid. In doing so, practical facts must be emphasized, and the results of observation and treatment duly credited. Physiological and chemical truths are often ascertained, wholly or in part, by reasoning backwards from pathology and therapeutics, and the truth holds good in the discussion of what may well be termed uric acid poisoning. If it be acknowledged that gout, whether acute or irregular, is caused by uric acid, it is reasonable to infer that other morbid manifestations should be ascribed to the same cause. In other words, a poison circulating at any time through the blood can hardly fail to exhibit its deleterious effects elsewhere than in the great toe or in the fibrous tissues. This assertion will hardly have any opponents. As a matter of fact, it has been established that certain symptoms and diseases, hitherto attributed to supposedly known causes, are due directly or indirectly to uric acidemia. Such knowledge is the outcome of careful and prolonged examination of the blood, urine, and structures of the body. In a number of morbid conditions, uric acid has been found in excess. If in excess and imperfectly eliminated, its damage is as inevitable as that of any other retained excretion.

Now, let us take for a moment gout as a type of the manifestations of uric acidemia. The theories advanced to explain its causation are at present irreconcilable; but the observers and experimenters, who have investigated the subject with the greatest degree of thoroughness, are almost unanimous in the belief that uric acid is the offender. Further, it is an excess of this substance in the body. Again, as a matter of course, its elimination is not properly effected. The healthy kidney is competent to discharge the duty imposed upon it, but it cannot be expected to perform excessive work without sooner or later becoming the seat of disease. Uric acid accumulation may, consequently, take place when the renal epithelium is diseased; but is it

true that renal disease is the first step in the etiology of gout? Such a theory has been advocated, but there are many reasons for regarding it as untenable in the large majority of cases.

Is the accumulation due to over-production, the diet being normal or insufficient? If so, it must be assumed, as in the case of renal disease, with non-elimination, that a certain number of cases of gout, or allied diseases, are secondary and due to a previously diseased body. In some instances this is true, and excessive formation leads to defective elimination.

Again, is the accumulation due to excessive introduction either of uric acid or proteids into the body? This question can undoubtedly be answered in the affirmative. Moreover, the opinion expressed by Dr. Haig in his recent able work on this subject, that the large majority of patients suffering from uric acid poisoning have introduced into their bodies an excessive amount of this substance, is based upon actual demonstration.

If the time and occasion permitted, it would be interesting to enter fully into a discussion of the reasons and facts adduced by Dr. Haig; but all that I can do is to commend his writings and urge for them the close and prolonged study to which they are so justly entitled. I may remark that Dr. Haig believes that gout is due to diminished alkalinity of the blood and an excess of uric acid in the system, both of these conditions being due to the introduction of uric acid as such and of an excess of nitrogen in flesh food. He does not deny that excessive acidity of the blood may not be produced by dyspepsia and the fermentation of sugars and starches, as well as by an excess of acid and nitrogenous food; while due importance is attached to the deleterious effects of tea, coffee, and alcoholic beverages. The same author further believes that high pulse tension, headache, epilepsy, convulsions, hysteria, mental depression and fatigue, asthma, bronchitis, Raynaud's disease, Bright's disease, glycosuria, rheumatism and other disorders are in many instances directly attributable to an excess of uric acid, either circulating in the blood or deposited in the tissues. His reasons for thus believing are well-founded. At the same time, I do not agree with Dr. Haig in all of his conclusions; nor does he himself profess to have exhausted his subject or met all of the objections of those who entertain different views. The obvious, natural, easiest way in which to account for uric acid poisoning is by an excessive introduction of nitrogen into the

body, rather than by excessive formation or defective elimination due to an already diseased body. I shall only state that, while the nervous system may play a part in the problem, and while the tissue-necrosis theory may have its advocates, the preponderance of testimony is in favor of the production of gout and allied diseases in the manner above mentioned.

But it must not be forgotten that an excess of nitrogenous food, independently of flesh food, may be injurious; and I am not so sure that uric acid may be formed not only in excess under these circumstances, but also disproportionately to the amount of urea produced. Furthermore, until convinced by proof, I shall continue to harbor a lurking suspicion that diminished oxidation is partly, at least, responsible for the acid accumulation.

In order to obtain a more comprehensive and practical view of this subject, let us lay aside for the moment the theories of physiology, and the results of technical examinations, and study the clinical phases of the subject. Some months ago a lady applied to me for relief from a severe and long-standing headache. Her pain had been attributed by several competent medical men to a mal-position of the uterus, which was only rectified by an operation. Marked relief followed; but, after getting out of bed and resuming her duties, the headache returned with all of its intensity. The uterus had been examined and found in normal position. Uric acid poisoning was suspected, and the mitigation of the headache attributed to the restriction of diet subsequent to the operation. This was my surmise. An examination of the urine showed a specific gravity of 1040, a yellowish-red color, marked acidity, as revealed by litmus paper, a good deal of pigment, and a deposit of uric acid and calcium oxalate crystals. The patient acknowledged that she indulged freely in meat, sweets and acids. These articles, with coffee, were prohibited, the bowels regulated, citrate of lithia administered, and out-door exercise enjoined. In two weeks the abnormal condition of the urine had disappeared, and the headache was practically gone. At last accounts, this lady had compromised on her diet, and, of course, was the possessor of a compromise headache. One of two methods had to be adopted in this case; either the diet had to be adapted to her environment and mode of life, or else these had to be adapted to her diet; and this, in my opinion, sums up the medical philosophy of the situation in all cases of uric acid poisoning.

Another case illustrates a point of some interest. This lady had been operated on for supposed ovarian trouble. When she first came under my care she was suffering from melancholia. The specific gravity of the urine was 1034. It contained neither sugar, albumin nor casts; and was more acid in the morning than at night. Uric acid was deposited in the morning and calcium oxalate at night. This patient grew steadily worse after leaving the city, and has since died. She had experienced a great deal of mental distress and worry, had lost a good deal of flesh, had no appetite, and was living on her own tissues. Now, it is possible that disordered nerve function was the cause of the disturbed metabolism, but how far uric acid poisoning was responsible for her condition it is difficult to say. The case is cited, however, mainly for the purpose of calling attention to the alterations of uric acid and calcium oxalate. This I have frequently observed.

Again, I bring to mind two patients who have suffered from decided attacks of uric acid pain after eating rice. In one case there was marked flatulence. The dietetic conditions were such that rice was the only article to blame. Another patient will surely suffer from gout after the ingestion of sweets or acids.

It makes no difference, as far as the treatment is concerned, whether we know how or where the uric acid and calcium oxalate were formed. The important facts are that these compounds have been excreted in urine after imprudence in eating; and whether they have been introduced into the body or formed in excess by the body, they are the direct or indirect result of dietetic errors, and illustrate clearly and forcibly the relation of cause and effect. As a rule, a healthy, vigorous man, working in the open air, can eat, assimilate, metabolize and excrete on a diet of meat, acids, sweets, coffee, tea and, perhaps, alcohol, without impairing the normal relation of urea and uric acid; whereas, a delicate woman, confined in a close room and taking no exercise, would probably suffer from uric acidemia on a diet far below her qualitative and quantitative physiological allowance. This truth conflicts in no way with the well-known fact that fever, leucocythæmia, and other morbid states of the body are attended with an increase of uric acid in the system. Here the condition is transient, leaving no traces, provided the subject observes the laws of hygiene after his convalescence.

A few days ago a gentleman consulted me

for a bronchitis of some standing. On being informed that his trouble was probably due to uric acid, he gave me a surprised look and said, "I believe you are right, for it cannot be explained merely by taking cold." He knew that there must be some underlying cause. I knew that his father died of gouty bronchitis, and that uric acid had been stinging the son for the past ten years in various portions of his body. The joint pains had disappeared, but bronchitis had taken their place. Such are the cases that hoard up uric acid, letting it accumulate day by day, month by month, year by year; overlooking its warnings or attributing them to the wrong cause; failing from ignorance or neglect to revert to first causes; and refusing, when informed, to practice prudence and self-denial; until, sooner or later, the venomous reptile, long hidden, but gathering strength and energy each day, fastens its fangs upon some organ or tissue in the body and makes its victim howl in agony or sink swiftly into death.

Said a gentleman to me on one occasion, when gout was the subject of conversation, "Well, that is a thing I have never had." I replied, "You have been trying to sneeze it out for the past five years." This individual is one of the loudest and most constant sneezers I have ever encountered. The respiratory center is not only warning him, but every one else within a radius of a hundred yards; but he is still sneezing and indulging in too much meat and alcohol, not realizing that he must reckon at last with his enemy.

The foregoing facts and observations, however imperfectly expressed or deduced, and the conclusions of men like Garrod, Roberts, Haig, and others who have worked so long and faithfully upon the subject of uric acidemia, convince me that gout and its congeners are due to uric acid accumulation; and that, in the large majority of cases, it is not necessary, in order to explain such accumulation, to presuppose or assert the existence of previous disease. Considering the known imprudence and frailty of human nature, realizing that over-indulgence in food producing acid is a thing of common occurrence, and believing that the long continued operation of a cause will inevitably bring about certain effects, we are justified in the opinion that uric acidemia is far more the cause than it is the result of morbid bodily conditions. And it is not only uric acid under its own form, but any compound of nitrogen introduced in excess of the physical requirements.

Coming now to the subject of treatment, some

one may exclaim that vegetarianism is the only outcome of the argument. By no means; although it is my honest belief that, if the human race could practically discard meat and subsist on cereals, vegetables, fruits, fat, and sugar, the physicians would be compelled to look around anxiously for some legitimate way in which to lessen their own numbers. We must avoid narrow-mindedness in therapeutics. As before stated, the whole principle in the prevention and treatment of uric acid poisoning consists in maintaining the normal output of urea, and providing against the abnormal intake or production of uric acid. All patients cannot be treated alike. A man who works out of doors and sweats cannot be subjected to the same restrictions applying to the one who leads a sedentary life. A certain amount of urea must be formed, consequently a certain amount of nitrogen must be introduced. Dr. Haig very clearly demonstrates how, in the beginning of his experiments, he began to lose flesh and strength from a disregard of this important law. He soon realized the mistake, applied the remedy, and reaped the benefit. Discontinuing nitrogen plus uric acid, and continuing nitrogen minus that substance, he accomplished his results by adopting a diet furnishing him with sufficient nitrogen to make his excretion of urea proportionate to his bodily weight and to the normal production of uric acid. The solution of the problem he had to solve is interesting and instructive reading. Since he has largely solved it, so can any other intelligent physician apply the truth. Nor is the application a matter of close mathematical calculation. Physiology teaches us what constitutes a normal diet scale, and it is our province to modify and adapt it to the condition of the patient. Nature will, for the most part, regulate the appetite and amount if we heed, instead of wilfully disregarding, her suggestions.

It is thus easy to understand how a given case may be advised to let meat preponderate in the diet and take exercise, when, for any reason, there is a faulty digestion of cereals or carbohydrates. Another will be advised to eschew meat entirely and live on vegetable food. Another will preserve his health simply by discontinuing alcohol, or tea, or coffee. A certain amount of experimentation will be needed, in many instances, until the idiosyncrasies of the patient are ascertained. Fresh air will be recommended; for it is beneficial, whether uric acid accumulation can or cannot be explained by defective oxidation processes. Open skin-

pores let out acids and favor the alkalinity of the blood. Sufficient sleep and the avoidance of over-work and anxiety promote the normal performance of the nervous functions. Properly applied knowledge on the physician's part, and perseverance on the patient's part will win the victory.

Colchicum, salicylic acid and alkalies are drugs of unquestionable value in the treatment of acute gout, and are often useful in the less pronounced manifestations of uric acid poisoning. The virtues of colchicum are supposed by some therapeutists to reside in its well-known power as a cholagogue. Whatever be its remedial action—and this is not definitely settled—it appears to possess properties that render it peculiarly efficacious in gout and kindred conditions. The salicylates are solvents of uric acid; but Dr. Haig makes the observation that it is unscientific to prescribe them with alkalies for the reason that the latter agents directly prevent the solvent action of the former. Alternation with acids is stated to be far more effective in certain cases than the use of salicylic acid alone. The value of both colchicum and salicylic acid in rheumatism is a strong argument in favor of a common cause for this disease and gout. Phosphate of soda, alone or combined with alkalies, is another excellent remedy. In sub-acute and chronic conditions, the iodides of sodium, mercury and other bases are oftentimes very effective. I recall a patient who had received surgical treatment at the hands of an able specialist for catarrh, and who applied to me subsequently to have his blood put in good order. Iodide of sodium produced a prompt change for the better in his nasal symptoms, and he added that a great deal of what he had not recognized as nervousness had also disappeared. I did not realize fully, at the time, that he was being relieved of uric acid accumulation. It would be entertaining to follow Dr. Haig in the painstaking experiments which he conducted to prove the physiological action of numerous drugs and their beneficial or injurious effects in uric acid conditions. One must study his book to appreciate its contributions to this department of medical science. I am inclined to think that, like most men who have discovered important truths, he allows the pendulum to swing a little too far on his own side, and does not attach sufficient importance to the primary or secondary causative influence of agents other than uric acid which produce functional disturbance or pathological changes in the organs and tissues of the body.

That he has opened up a wide and inviting field for continued thought and study; that he has proven the practical worth of his conclusions; and that he has made us and our patients his debtors cannot be doubted.

One word with regard to lithæmia. Our own people are not so prone to full-fledged gout as the English or Germans, for the reason that they do not indulge to the same extent in heavy meats and alcoholic beverages. The Scotch people have less gout than the English, although they have the reputation of not being over-modest in attesting the virtues of their own whiskey. The sweet wines, rich porters, ales and other drinks are more apt to lessen the alkalinity of the blood than Scotch rye. The Americans owe their acid blood, in a large measure, to an excess of sweets, acids and starches, meat being in the background, but in many instances building the foundation-work of uric acidemia. My own observation, and I dare say, that of the medical men present, is that oxaluria and its symptoms are more frequent in this country than typical gout, and represent another phase of the disease; but, notwithstanding the close chemical relations between oxalic acid, uric acid, and urea, we are not in a position to assert their connection with each other in the body. Lithæmia is a more manageable condition than gout, and it is either cured or held in abeyance, provided the patient is advised judiciously and perseveres in the measures recommended.

6 East Grace Street.

CLINICAL ODDS AND ENDS OF URIC ACID.*

By LEWIS G. PEDIGO, M. D., Leatherwood, Va.

Of all the infinitely varied manifestations of excessive uric acid, the rough clinical group known as muscular or fibrous rheumatism is perhaps most commonly seen by the general practitioner. Under this head may be included such maladies as lumbago, torticollis, sciatica, intercostal and other forms of local rheumatism. Practically we meet many cases that cannot be designated by a narrower or more definite term than fibrous rheumatism. We may find a certain degree of spinal tenderness radiating with more or less pain along the course of the spinal nerves, affecting various groups of muscles with pain and cramp and ultimately showing a tendency to local paralysis. In this clinical pic-

ture we cannot resist the conclusion that we have to deal with a rheumatic condition of the nerve sheath. These affections are especially prevalent as middle age approaches, and are progressive, recurrent and chronic, with no tendency to complete spontaneous recovery. For the curative treatment of these varied conditions, assuming that the liver has received due attention, the bowels relieved of constipation by appropriate methods, and errors of stomach digestion corrected, I have found few remedies of greater practical utility than sulphur. I am aware that this drug is included by Haig in a list of agents that merely throw the uric acid from the blood back upon the joints and other reservoirs or storage places. The details of the mode of action I am compelled to leave to investigators with laboratory facilities. I can only record the clinical fact borne out by years of practical experience, that sulphur, combined with potassium bitartrate in small doses, has yielded most satisfactory results in the treatment of these obstinate affections. In my own practice many cases of lumbago of the sudden or very agonizing type, approaching renal colic in the severity of the pain, and rendering life a burden by frequent recurrence of the attacks, have been permanently cured by the persistent use of this treatment.

Along with this and other measures of general medication, I desire especially to call attention to one *topical* use of sulphur which in my hands has supplanted all other forms of local treatment—viz., the application of bisulphide of carbon to the affected parts. The next bad case of lumbago or torticollis you have to deal with, pour out into your hand from a teaspoonful to a tablespoonful of carbon bisulphide and rub it quickly and vigorously on the skin over the affected muscles. The instantaneous relief will be a pleasant surprise to you and the patient, and you will remember the incident as one of the satisfactory practical experiences of your medical career. Not only do I find immediate relief from this measure, but the results of several applications, made by the patient, have seemed to be more permanent than I can secure by other forms of local treatment. In addition to the counterirritant and local anæsthetic properties of this drug, I am constrained to believe that a part of its remarkable influence is due to its absorption in form of vapor, and the exertion of the specific effects of sulphur on the subjacent rheumatic tissues. The two objections to the remedy are its very bad odor and its extremely

* Read before the Medical Society of Virginia, November 6, 1901—a part of the subject selected for general discussion.

poisonous properties. By reason of its volatile nature, however, the odor leaves the room in an incredibly short time, and the patient should always have verbal and written precautions that it is a deadly poison.

It is interesting in this connection to note the well-established reputation of sulphur waters used internally and in the warm and hot bath as a remedy for rheumatism in its various forms, and to observe that in this treatment the effective agent is hydrogen sulphide, the chemical analogue of carbon bisulphide, and that, conformably to the theory hinted above, this agent is absorbed by the skin in the warm or hot bath.

I pass now to the brief consideration of an old and valuable, but much neglected remedy, ammonium chloride. According to Haig, the same theoretical objection holds to this agent and other ammonium salts as to sulphur. In face of this high authority, I find it a useful remedy in a wide range of uric acid affections. I do not think Haig or other theoretical objectors estimate at its true value in this connection the influence of this drug on the hepatic circulation and consequently on some of the hepatic functions. Let us bear in mind that muriate of ammonia promotes osmosis in the tissues, increases the eliminative power of certain secretory organs, relieves from obstruction the return circulation from the intestines, and finally that it belongs to the great chloride group of antiseptics.

After whatever imperfect research I have ever been able to make into the varied relations of the subject of uric acid, I am convinced that the last word has not yet been said on the exact status of the uric acid function of the liver. Haig tells us in rather dogmatic fashion that in the various uric acid storms and crises, the *production* of uric acid in the system is to all practical purposes approximately constant, and that all uric acid malady is due to variation in the rate of ingestion and elimination. Nowhere, however, between the covers of his eight hundred page book on the subject does he tell us the details of experimentation by which he arrives at this very important conclusion. In absence of such evidence I cannot help believing that the uric acid synthesis by the liver may be modified by various deleterious influences, and may be corrected in its excesses and perversions by appropriate remedies. Awaiting the ultimate theoretical conclusions on this subject with great interest, I pause to recommend muriate of ammonia in certain acid conditions of old age,

characterized by frequently recurring "bilious attacks" not amenable to the usual measures of treatment and accompanied by persistent vertigo. Calomel with soda and salines, followed by bromides, give temporary relief, but much more permanent improvement in all the symptoms may be secured by the regular systematic use of muriate of ammonia. Less bromide will be required to control the vertigo, less calomel for the liver; and the mental condition and general tone of the patient will be strikingly improved. This last point is of interest because some of these cases do not bear the usual tonic treatment. I have now a case of this description in a female patient eighty years of age, in which the vertigo seems to be of the congestive or hyperæmic variety; and, notwithstanding the urgent need at times for sustaining treatment, I find that the use of alcohol in any form, or strychnia, or even the simple bitter tonics, aggravates the vertigo to such an extent as to alarm me for the integrity of the blood vessels of the brain. Muriate of ammonia is invaluable in this case and in all similar cases.

The iodides also are classed by Haig among the remedies that clear the blood of uric acid but throw it back on the joints and fibrous tissues by rendering the blood a bad solvent for uric acid. The question that forces itself on the mind of every clinician at this juncture is, Does this laboratory theory harmonize with the well-known clinical effects of iodide of potassium, for example, on rheumatism of the fibrous tissues? I would call especial attention just here to the uric acid or rheumatic condition as furnishing a strong predisposing cause of serous inflammations and exudations like Leaning's pleurisy, and inflammatory affections of mucous membranes of which bronchitis is a type. In this line of cases, the iodides (especially in form of hydriodic acid) are invaluable.

Haig's theory of the uric acid causation of diabetes is intensely interesting, and I am inclined to think is *partially* true; that is to say, applicable to a certain class of cases. But the old fallacy of attempting to find one single cause for all cases of diabetes is here repeated in all its logical viciousness and absurdity. We observe, for example, that Brown-Sequard's epoch-making researches into the pancreatic origin and treatment of diabetes is entirely ignored. Haig's theory, however, whether true or not, is interesting, in view of the well-established efficacy of the salicylates in diabetes. For years I have used sodium salicylate in this malady, but I did

not learn its use from Haig or Von Noorden, or any other English or European authority, but from some American physician of local prominence in Philadelphia, whose name, I am ashamed to say, I have forgotten, who wrote up the subject in the *Therapeutic Gazette* about seventeen years ago—at least three years before the notion ever occurred to Haig or Von Noorden. After my own use of this remedy in diabetes for years with very satisfactory results, my attention was attracted to *aspirin*—still a new remedy in uric acid conditions. When I had become practically familiar with the use of aspirin in the muscular rheumatisms, rheumatic neuralgias and the acute, subacute and chronic forms of articular rheumatism—in short, as a substitute for the salicylates in a wide range of uric acid affections—it occurred to me that the same remedy would also be superior to sodium salicylate in diabetes. Experience has amply confirmed this view, so far as I have had the opportunity of making the test. In December, 1900, I began its use in a case of diabetes complicated with valvular disease of the heart. The patient, a man, age 32 years, had been under treatment for about two years. At that time his urine registered 1035 and contained sixteen grains of sugar to the fluid ounce. I made no essential change in the treatment except to give him fifteen grains of aspirin three times a day before meals. In ten days specific gravity of urine was 1020, with not a trace of sugar. After that time the treatment was continued with intermissions of a few days, at intervals of two or three weeks for several months, with frequent examinations of urine. Occasionally the specific gravity would rise slightly and a very small percentage of sugar would be found, especially when the patient over-worked or over-worked for a time. But the case seemed well under control and the symptoms never approached their former degree of severity. Six weeks ago all treatment was discontinued except regulation of diet. Since that time four weekly examinations of urine have been made and the urine found to be normal. Recently I have relaxed the diet rules and expect to receive another specimen for examination in a few days. In ten months the patient has gained thirty-seven pounds in weight and proportionately in general tone and condition. The principle remedy has never exerted the slightest depressant influence on the action of the diseased heart or affected the patient unpleasantly in any way. In diabetes, as in rheumatism, we sometimes find the salicy-

lates contraindicated by some complication or idiosyncrasy. In these cases certainly aspirin should be tried. If it prove in diabetes to accomplish better results, more surely, in a shorter time and without the untoward effects of the salicylates, common sense would seem to dictate its general use in diabetes as well as in uric acid conditions as a step forward in rational and experimental practice.

After writing a report of the above case for publication, my attention was called to an article just published in the German language (and I think not even yet published in English) from the pen of that most eminent authority on diabetes, Dr. Von Noorden, of Frankfort. In reading this report I find that Dr. Von Noorden has used aspirin in diabetes in substantially the same manner as above reported, and that this treatment was suggested to him in precisely the same way—viz., by his previous use of sodium salicylate. His results are similar and his work has clearly preceded mine, so that, while I had not even an opportunity of deriving information from him, and my work was of the nature of independent research, it cannot be recorded here in the category of original discovery. My report is, therefore, intended to be merely corroborative in a small way of the original work of the great clinician. And, while I cannot hope to shed additional light on a field of research that has been illuminated by Von Noorden's genius, the subject is one of such deep practical and scientific interest that it will be my pleasure to continue my investigations and assist in a subordinate way in promoting a knowledge and general use of the treatment so far as it may prove worthy of the attention of the profession.

DISCUSSION ON URIC ACID DIATHESIS.

DR. GEO. W. DRAKE, *Hollins, Va.*, said that the uric acid diathesis is to-day one of the most prominent problems before the medical profession of England and America. Uric acid is on trial. It has been indicted for being the cause of nearly "all the ills that flesh is heir to." It must have been a beefsteak instead of an apple that our first parents ate, which brought sickness and death into the world.

In the discussion of this problem, we must take into consideration "the personal equation." All men are *not* born equal—the Declaration of Independence to the contrary, notwithstanding. Men are differently constituted on account of differences of heredity and environment. Idiosyncrasies as to foods as well as drugs are quite

common. "What is one man's meat is another man's poison." One man can eat alloxur-containing foods with impunity, while another is poisoned by even a small quantity of such foods.

I submit that it is not right for some people to eat meat, because they have good reason to believe that it hurts them; but, as it does me no harm, never causing an ache or pain, I continue to eat it. My instruction is, do as I tell you, and not as I do, for I cannot say as did Paul, "If eating meat doth make my brother to offend, I will eat no more meat."

It would be wrong for Dr. Haig to eat meat or other foods containing any member of the uric acid group of leucomaines, or their vegetable congeners, caffeine, thein, theobromin.

Vegetarianism is not a universal doctrine, but is only for those who can receive it, and they do not constitute a majority of mankind, but only a small minority.

Conservatism in matters of diet as well as medicine is the safest rule of conduct.

Nature has provided, along with the uric acid in our foods, certain bases to prevent its accumulation within our bodies.

Alkalescence of the blood inhibits the accumulation of uric acid, and acidescence of the blood favors the accumulation of uric acid and its deposition in certain tissues. There is a constant tide of bases and acids into the blood—anabolic products of the tissue cells and decomposition products of the ingested foods. The preservation of health depends on the maintenance of a proper balance between the bases and acids which enter the blood.

The ammonia of the cell proteids and of the food proteids attracts the acids, and combines with them to form soluble salts which pass out of the blood into the urine, and thus rid the blood of excess of acid. In this action ammonia turns aside from its accustomed role in the formation of urea and saves to the organism the two important bases, sodium and potassium. It thus shows itself to be a great equalizer of the balance between the bases and acids—so essential to the prevention of uric acid toxæmia. Ammonia is nature's safeguard against ordinary acidæmia, and so also against uric acidæmia. There is, however, a limit to its combining power, which may be exceeded by the presence of an overplus of acid in the blood.

If we select our foods, animal and vegetable, with reference to a proper proportion of acids and bases, we need have no fears of uric acid poisoning. A one-sided diet, whether vegetable

or animal, is not the most healthful. An exclusive vegetable diet has been known to introduce too much lime into the blood, and thus cause calcification of arteries.

When there is an overbalance of acids and an underbalance of bases—a condition of diminished alkaliscence so conducive to uratic intoxication—one of the best drugs to restore the balance of the bases is the new salt of lithia, thialion. Its action, in my opinion, is to assist the available ammonia and help to maintain the normal alkaliscence of the blood by protecting the sodium and potassium bases.

DR. STUART MCGUIRE, *Richmond, Va.*, said: I feel a personal, as well as profession, interest in the subject under discussion; for all of my life I have been a victim of uric acid diathesis. You have heard a great deal this morning in regard to diet and drugs. But I want to emphasize the necessity of *exercise*. When I first left college with my head full of all the official drugs, I experimented with drugs often, I fear, to the detriment of the patient. Becoming dissatisfied with these, I took myself to proprietary medicines. Afterwards I tried the springs, and for seven years I tried faithfully the Warm and Hot Springs of Virginia. After that time I saw that they, too, were a failure. I then read Hague's book, and became a crank on diet. Whenever I ran across a person suffering from uric acid I asked him who had been his doctor, and what had been his diet. I took notes from my interviews with these people—sufferers from all parts of the world, practically—and I found no one principle of dieting common to all. Some had interdicted alcohol; some cut out meats, and others advised the use of them; some positively forbade the use of sweets, and others said it made no difference; some said let coffee and tea alone. So I came to the conclusion that none of them knew anything about it.

In this state of mind, and suffering in every joint from gout, I received an invitation to the country and went out to hunt. I received the well-known ante-bellum hospitality, and sat down to a table literally groaning with its weight. It was a revelation to me. There were present twenty or more invited guests, and there was on that table hog of every species, floating in fat and grease; sweets, molasses, preserves, cakes and jellies; condiments of every kind; and tea, and coffee, and plenty of whiskey. And these men ate as only countrymen can eat, and they filled themselves full of what I had been led to

believe were the prime factors in the production of gout. I asked them if any of them had gout, and they said they didn't know what that was. So I came to the conclusion then and there that it was not the diet, but exercise, which is the preventive and cure for gout. Uric acid and exercise are in inverse ratio. Instead, then, of cutting out this kind of food, and that—restricting the diet—you had far better tell the patient to get out and walk a prescribed number of miles every day. A healthy out-door life is far better than any dieting or drugs.

I want to ask this question of the country doctors here: Do country doctors come in contact with gout as do the city doctors? I want to hear from the country practitioners what their experience is with gout.

Dr. J. H. NEFF, *Harrisonburg, Va.*: I don't believe I have ever seen a case of gout in my practice, unless it could be traced to heredity or unless it was some one who came from the city; and I most firmly endorse what Dr. McGuire has said. I believe the great causes of gout are, first, heredity; and, second, lack of the proper amount of exercise. In a great number of instances we must refer back certain conditions that are present in the offspring to ancestral indiscretions, and these conditions most certainly predispose to gout. And so we should see to it that we so shape the environment of the individual early life that it may escape the tendency which is his by heredity, and which he cannot otherwise escape in later life. In the second place, the individual in early life takes a great deal of exercise, which is a great factor in the elimination of an excess of uric acid. Later in life, under the stress of making a living, he takes less exercise, and the tendency is for this substance to accumulate in his system. I believe thoroughly that no dietary can be the rule that will apply in all cases of uric acidemia. In my own case, when I was a student at the University, and when the application to my studies required me to stop taking the great amount of animal exercise that I had been accustomed to, I soon became subject to uric acidemia. I consulted one of my professors at the University, and he advised me to walk two miles to a certain old spring near Charlottesville every morning before breakfast; and I believe that had more to do with my improvement than any dietary or drug that he could have prescribed. "He that would be healthy must obey the laws of health."

Dr. S. T. A. KENT, *Ingram, Va.*: In reply

to the question asked by Dr. McGuire, I wish to say that I have been practicing medicine in the country for about nineteen years, and during that period I have seen, as far as I can remember, only one case of gout and probably ten cases of lithæmia. There is, in my opinion, a very small proportion of this class of diseases in the country. I agree with Dr. McGuire, and believe that we find so little of these troubles because the country people lead such a healthy, active out-door life. They eat anything they want without any inconvenience.

I suffer myself from hay fever, and I find that I can bring on that trouble by eating a piece of ham. I can bring that on at any time of the year—not only in the fall, when those who have it are most apt to suffer—but in other seasons as well. If I eat even a little piece of ham I bring it on; so, of course, I leave it off.

However, I think the diet has a great deal to do with it. As Dr. Gordon says, rice has been known to bring it on. And so we have to be very careful about the diet as well.

Dr. S. W. DICKINSON, *Marion, Va.*: Neither of the papers has alluded sufficiently to the part the skin has to do with this subject; neither of them has had anything to say as to that manner of elimination; and I think the part the skin has to do in elimination is why we country practitioners have so much less of this trouble. Our patients make more use of their skins, and, as they are used more continuously and frequently, they are more developed than the skins of city people. Country people can eat more than city people, because they can eliminate more. Elimination altogether by the kidneys is not what we must look for; and we must not expect to put every one on the same diet and get the same results. The fact of the business about our mountain springs, which made their reputation long ago, is that the people who sit down to the tables are city people, who have filled themselves full of uric acid by high living and whiskey during the winter. They have filled their systems full of overflowing with urates; and they strike out, when hot weather comes, over the roughest of roads sometimes, and in vehicles with no springs, to get to the mountain springs. There they fill themselves full of water, flush out their systems, and then go back to the city for the winter, to again indulge in high living and a lot of whiskey drinking, with the consequence that when the summer comes around again they are in the same condition again.

DR. R. L. PAYNE, *Norfolk, Va.*, said: The subject under discussion is one of extreme interest to me, perhaps, because of a personal side of it, and, perhaps, because of the interest attaching to the investigation of a condition which I believe to be but little understood. A few years ago, when DaCosta and others described a condition due to the retention of uric acid in the system and styled this aggregation of symptoms as lithæmia, a long-felt want was filled for the profession at large, and straightway the new term found an abiding place in our nomenclature. All of us who formerly satisfied our patients by telling them they were "bilious" or that they suffered with "torpid liver," now found a convenient term. The patient was miserably delighted to know all his woes were due to the retention of a definite poison which could be eliminated, and we, the profession, sat still in contentment over this satisfactory solution of the true pathology of our old enemy, "biliousness."

But, sir, have we reached a perfect solution of this subject? For my mind, no.

What is the evidence of the excessive formation or retention of uric acid apart from the array of symptoms which we attach to such a possibility? The appearance of uric acid in the urine in what we regard excessive quantities. But this state of affairs is common to many other conditions in which the classical symptoms do not appear. Excess of uric acid is found in the urine in those who eat too much and take but little exercise; it is a common thing in leuthæmia, in enlarged spleen, in trepatic cirrhosis and in gastro-intestinal catarrh. On the other hand, the symptoms classed as lithæmia are found in intestinal indigestion and in other disturbances of the digestive organs not classed as lithæmic, while no less competent an observer than DaCosta has described a condition characterized by most of the classical symptoms of the so-called lithæmia, which is associated in some cases with increased elimination of uric acid, but in other cases the uric acid is not increased, but there is well-marked oxaluria. Again the fact is well established that uric acid is an end product of the metabolism of nitrogenous foods, and yet we find all the symptoms of lithæmia present in patients the subjects of chronic indigestion, where the special difficulty lies with the digestion of sugars and starches, and where the withdrawal of these principles from the dietary, or where suitable measures can be adopted to promote their digestion, all the lithæmic symp-

toms disappear. The truth of the whole matter is that the symptoms styled lithæmic are probably always due to auto-intoxication, and while in some cases the symptoms would seem fairly attributable to uric acid, in many others the symptoms present are probably due to the presence of other products of imperfect metabolism in the blood or to the absorption of poisonous ptomaines from the intestinal tract.

My own observation is that quite a number of these patients show a considerable percentage of indican in the urine, and there are other evidences of putrefactive changes going on in the intestines, and so one can easily believe in the possibility of the absorption of ptomaines. Again, all of us have observed how promptly all the symptoms of acute lithæmia disappear after the action of a mercurial prize. Certain it is that the man who contents himself with the idea that the so-called lithæmia symptoms are simply due to the excessive formation or deficient elimination of uric acid and who expects to cure all such cases by the withdrawal of protides from the dietary, the use of laxatives and the administration of lithia or one of the alkalies will meet with many disappointments.

On the other hand, he who most faithfully seeks to unravel the varying conditions of the digestive tract underlying the disturbed metabolism of each particular case will often succeed in relieving the patient the more superficial pathologist has consigned to hopeless invalidism.

DR. LIVIUS LANKFORD, *Norfolk, Va.*: My prescription to eliminate uric acid has been, in the city, to take physical exercise in a gymnasium; that in ninety days nine-tenths of the patients express themselves that they would not take one thousand dollars for their improved condition; with the wealthier patients my prescription is the suggestion that they take a little farm near the city, and, instead of a club life, to go out and take as much exercise as possible on that farm; that, as president of the Y. M. C. A. of Norfolk, I have noticed for several years that the gouty patients are almost invariably relieved when placed under the physical director, with the proper instructions as to what treatment I want the man to have in the gymnasium. The pale and poorly developed child is almost invariably improved after being placed under the physical director of the gymnasium.

It was my privilege a few years ago to be a private student of Augustin Martin, of Berlin. He told me that he nearly died of uric acid dia-

thesis, and only when he commenced horseback exercise for one hour every morning before breakfast was his health improved—Dr. Martin weighing 260 pounds. Also, when I was in London as a private student of Dr. Granville Bantock, I found him laboring every evening on a little farm near the city, trying to prolong his life from uric acid. He said that his health was almost perfect after he had adopted this method of treatment.

DR. W. H. BRAMBLETT, *Pulaski, Va.*: I have been a country practitioner for a good many years; in fact, ever since I graduated in medicine, and I have seen a good deal of men from the cradle to the grave, and I want to suggest to Dr. McGuire that my experience with such men as he speaks of has been—and I have observed the living of such men on the farm—that they die young, that is, about forty-five or fifty years of age, from heart disease, liver disease or kidney disease. My experience is that all who live as Dr. McGuire has described die young, or die before their time comes. If those men would live on one-half of the amount and would restrict their diet, they ought to live to be ninety or a hundred years old. My experience is that those men, in a few years, develop some disease which I attribute to uricacidæmia. I think a man ought to live to be eighty, ninety or a hundred years old, and these men live to be only forty-five or fifty or sixty.

DR. W. E. ANDERSON, *Farmville, Va.*: In my opinion the most important point in regard to gout and lithemia is to prevent a man from having them by attention to the causes. The primary cause I believe to be abnormal living. I have practiced for three years in the country, and found that these people do not have gout. Since then I have practiced in a small town, and in connection with town practice I do a good deal of country practice, and I find that those people who have gout are those who live abnormally. Of course, we can't order men as to how they shall live; we can only advise them as to how they should live when they come to us. So we are forced to consider the treatment of these diseases. I use alkalies and prescribe mineral water freely. I do not agree with Dr. McGuire that mineral waters have been proved a failure. I think there is no doubt that lithia water is beneficial in this class of disease when taken under the direction of a physician. Watch your patient closely, prescribe his manner of liv-

ing, prescribe alkalies and lithia water, and you will get good results.

DR. J. N. UPSHUR, *Richmond, Va.*: I want to call attention to the neurotic side of gout. It is frequently of nervous origin. I believe that the fact that we see so much lithæmia—and bear in mind that I draw a distinction between lithæmia and gout—in the city is because of the greater nervous tension to which city people are subject. There is back of it a difference in metabolism, and this is due to defective nervous condition—not an excessive condition, but a depressed condition of the nervous system, the result of a continuous strain. If you will simply remember for a moment the life of the average city man, how much faster is his life than the life of the country man, how much more perpetual is the strain, you can, I think, readily account for the greater occurrence of these disturbances in the man of the city.

The nervous condition results in an interference of metabolism and elimination of waste material from the system, and results in some form of lithæmia. I have seen this thing as a result of nervous tension in men exceedingly abstemious in their living; and I want to emphasize the point here that this condition is the result of nervous strain which the man in the country does not have. The country man keeps earlier hours, and his whole environment is such as to relieve him of excessive and continuous strain upon his nervous system. And this accounts for the fact that golfing, hunting and such forms of exercise do good. They put all the nervous forces of the man in a condition of rest, and diverts them into different channels and gives him rest and diversion.

In my opinion this difference in nervous strain has a great deal more to do with the greater frequency of these troubles in city people than the difference in the amount of exercise taken. The average woman in New York city walks many more miles in a day than her sister living in the country.

DR. PEDIGO, in closing his part of the discussion on uric acid, in answer to various criticisms of the two papers, explained that neither paper was intended to be comprehensive or exhaustive. His own paper was in its very title confessedly a fragmentary contribution to the discussion. Indeed, the subject is so broad and many-sided that a volume rather than a brief medical paper is required for its exhaustive treatment. For

example, he believes in exercise, fresh air, diet and various hygienic measures as fully, and emphasizes them as strongly in his practice as any of the gentlemen who have discussed the subject. But his own paper dealt chiefly with certain narrow lines of drug theopathy.

In answer to Dr. McGuire's question about relative frequency or prevalence of uric acid affections in city and country: in his experience uric acid conditions *generally* are extremely prevalent even in the country, though, perhaps, the *gouty* type of cases is more frequently seen among the wealthier people of the cities. He dissented from certain views that had been expressed, in which it was assumed that country people take more exercise than city people. He believes that women and girls in the cities walk more than they do in the country, and that in his observation the average of women on Fifth avenue, in New York, for example, are larger, plumper and healthier looking than in the mountains of Virginia.

The buxom country lassie is largely a tradition and a myth.

DR. GORDON, in closing the discussion, remarked that he was gratified that his own views had been corroborated by the various expressions of opinion. With regard to diabetes, he believed that injury of some kind to the nerve centres was frequently the direct cause of the disease, but that uric acid might be the starting point, especially when the disorder had its origin in the digestive system.

He had emphasized the importance of free skin action in the treatment of uric acidæmia, while open air exercise was equally important. As stated in his paper, it was not necessary to enjoin vegetarianism upon all subjects; but in certain persons leading sedentary and in-door lives, strict abstinence from meat would often be essential to a cure. Several of the strongest and healthiest men he had known rarely ate meat.

Coffee contained, not uric acid as such, but what had been proven to be convertible into that substance. Xanthin differed from uric acid in containing one atom less of oxygen.

He did not deny heredity, but the conditions in uric acid poisoning were such as to make it probable that the patient was more responsible than his parents or grandparents.

As to the diagnosis of gout, uranalysis would clear up all doubt in the absence of distinctive, subjective or objective symptoms.

Uric acid strikes all over the body; hence any one of its manifestations or secondary effects must not be mistaken for the cause of gout and allied disorders. In this connection, it was true that abnormal conditions of the nervous system would be partly a cause of gout, or even the first cause, inasmuch as defective nerve action, even with a normal diet, might retard metabolism.

Although people living in the country are, theoretically, less apt to have lithæmia and gout, still the comparative purity of the air they breathed did not always compensate for their indulgence in too much proteid food and their failure to take sufficient exercise.

NEPHRO-URETERECTOMY—A REPORT OF TWO CASES.*

By J. WESLEY BOVEE, M. D., Washington, D. C.

The number of reported cases of complete nephro-ureterectomy to date are but a dozen; and it is only by carefully reporting cases as they occur with thorough study of them that the proper indications and methods may be determined. It is with a view to assisting in this good work that I to-day report a successful case of partial, and one of complete nephro-ureterectomy, also successful.

Since reporting a case of complete ureterectomy to this Association two years ago, together with a resume of the literature on the subject, my interest in it has not lessened. In both of my cases I had to deal with idle kidneys, and in both the preliminary nephrotomy was as much as could have been done at the first attempt. Both patients are now perfectly well, which speaks volumes for the advisability of the operations.

Indications.—The principal reason for nephro-ureterectomy is tubercular disease of both these structures. Malignant disease and severe traumatic injury throughout most of the course of the ureter, multiple marked strictures from ureteritis and marked destruction of kidney and ureter from calculons and pus accumulations—especially the last—are other conditions indicating the operation. LeDentu removed them for a papillomatous growth of the

*Original abstract of paper read at the Fourteenth Annual Meeting of the Southern Surgical and Gynecological Association, at Richmond, Va., November 12-14, 1901.

bladder at the ureteral orifice. It is doubtful, however, if the average surgeon would be willing to sacrifice a kidney for that condition. After nephrectomy for pyonephrosis, from various causes, a sinus connecting with the ureter frequently continues to discharge for a long time, and requires a second partial or complete ureterectomy. In some cases like this, the whole has not been removed secondarily, and the surgeon has again been obliged to resort further to excision. When tubercular disease has descended from the kidney along the ureter, the actual extent of the progress along the duct is not easily demonstrated at the time of the operation, and removal of a large portion or all of the duct is advisable. When this disease has passed from the bladder through the ureter to the kidney and so involved the latter organ as to make its removal appear necessary, little hope of cure can be entertained with retention of the ureter. In fact, in this condition bladder extirpation will probably be required, though the condition of the opposite side must be excellent to justify any surgical intervention beyond emptying pus. Frequently in calculous pyonephrosis the ureter will be partially or completely obstructed by a calculus, and the condition of the duct above it materially altered. In such case, if the kidney must be sacrificed it is best to remove the ureter to below the calculus and to explore the remainder, which may be allowed to remain if not evidently diseased or obstructed. Otherwise this portion also had best be removed.

It happens in most cases of tubercular kidney the disease has spread along the ureter—usually by the mucosa, occasionally by the lymph channels, and manifests itself in the bladder mucosa about the ureteral orifice. This would seem particularly to indicate complete nephro-ureterectomy. But in many cases in which the involvement of the duct has been slight, no trouble has followed simple nephrectomy. I am inclined to believe further experience with nephro-ureterectomy will lead to complete removal of the ureter with the kidney in these cases. Whether resort to nephrotomy should not precede nephro-ureterectomy or even nephrectomy is an unsettled question, though the French surgeons have decided it in the negative. In tubercular or malignant disease the earliest possible removal of the organs should be done. In all other conditions, I am of the opinion that nephrotomy should be first tried, as often cure is brought about by it; and frequently the kidney is not all diseased, but is capable of good

work when the pus is removed. This is frequently proven in early pyonephrosis from ureteral calculi. It may even be in better condition than its fellow. It may be entirely destroyed, on the other hand, as demonstrated by absence of urine from the loin drainage. Of course, when such is the case, the opposite kidney has already adjusted itself to the extra work imposed upon it, and the surgeon need not fear on this account if removal of the functionless kidney and the ureter is deemed advisable.

Methods and Technique.—As reports of operations for removal of the kidney and ureter and of the ureter alone appear the modification of former methods are exhibited. Early in the history of the operation the two principal methods were the loin extraperitoneal and the transperitoneal. The former was considered preferable, as ureterectomy, and especially nephro-ureterectomy, was done nearly always for tubercular disease, pus being present in nearly every case. To avoid contamination of the peritoneum with these materials seemed strongly advisable.

Up to the time of preparation of my paper in 1889, eighteen cases of ureterectomy and nephro-ureterectomy had been done by this route as against one by a combined loin extra-peritoneal and vaginal, and one by the trans-peritoneal route. Since then the number has been about doubled. These make to date by the extra-peritoneal route five cases of complete nephro-ureterectomy, including my own; nine of incomplete nephro-ureterectomies; complete ureterectomy, twelve cases; and incomplete ureterectomy, four. By the loin extra-peritoneal, plus the vaginal, four complete nephro-ureterectomies and one complete ureterectomy. By the transperitoneal route complete nephro-ureterectomy has been done four times and incomplete nephro-ureterectomy once. Thus, of forty ureterectomies, thirty of them have been done by the loin extra-peritoneal route alone, by this plus the vaginal five, and by the trans-peritoneal five. Of the complete nephro-ureterectomies, five have been done by the loin extra-peritoneal route, by the loin extra-peritoneal plus the vaginal four and by the trans-peritoneal route four. This record shows that ureterectomy has been done without crossing the peritoneal cavity in 88 per cent. of the cases, and that total ureterectomy by the trans-peritoneal route has been done but four times of the eighteen operations. This demonstrates the trans-peritoneal route has not been adopted for this work.

It is scarcely allowable in this connection to

consider the mortality rate, as very likely all the fatal cases of nephro-ureterectomy were in individuals that had suffered with a tedious and devitalizing pathologic process calling for operation. But as a surgical proposition, *per se*, the trans-peritoneal route certainly has dangers of infection that do not belong to the extra-peritoneal. Baldwin is very emphatic in his advocacy of its superiority, and Pryor prefers it. Most operators prefer the extra-peritoneal route. I am sure Montgomery's and my three cases would have been very dangerous ones to have attacked from the peritoneal side, as pus was abundant and soiling the peritoneum could hardly have been avoided. Kelly, Noble, Montgomery, and Ill recommend the combined loin extra-peritoneal and vaginal plan for complete nephro-ureterectomy. This is probably due to their desire not to injure the broad ligament and their hope of avoiding it by the vaginal work, a desire to have vaginal drainage and a belief in the necessity of ligating the lower end of the ureter. The last is really not necessary, unless the uretero-vesical junction be involved, which is not usual, except in severe tubercular conditions. If this part be not involved, even ligation of the stump is not advisable. But two cases, those of Meyer and Hartmann, are reported in which reflux of urine into the stump of the severed ureter are reported. In both of these this junction was much thickened and prevented a proper pressure being exerted here to prevent outflow of the bladder contents. In such cases excision of that portion of the bladder is often advisable. The entire removal of the ureter may be done by the lumbo-ilio-inguinal route, as one of my cases demonstrates, though some injury to the broad ligament must necessarily attend it. The advantages of this over the combined routes mentioned are that the danger of infection and the duration of the operation are lessened. Following this procedure, the drainage is all in one direction and reaches the surface in a region in which it is most easily managed. The advantages of the vaginal incision are greater facility in dealing with the terminal end of the ureter, which may include partial excision of the bladder, as in LeDentu's case, and downward drainage, though some operators have not considered this latter an advantage, for they have promptly sutured the vaginal roof opening.

Most operators employing the combined routes have begun at the renal end, making the vaginal incision very late in the operation. Montgom-

ery made this opening first, having in view ligation and division of the bladder end of the ureter and facilitating upward removal by traction. Another modification he made was in employing the Konig incision in the loin. Removal of the kidney and ureter proved with him an operation of but a very few minutes. Ill removed the kidney through a loin incision, dissecting the ureter well down, and made a second incision in the semilunar line just above the pubes. Through this he pushed back the peritoneum until the iliac vessels were reached, continuing the dissection of the ureter to the iliac artery. He tied the uterine artery anterior to his finger and the internal iliac posteriorly, opening the vagina along the line of the ureter, which was completely loosened. The ureter was finally cut in two after ligation, and the lower part drawn into the vagina, where it was ligated next the bladder and severed. Meyer used Israel's incision. Noble removed the kidney and ureter in one piece, separating the kidney and upper portion of the ureter from the loin opening and, after severing the lower end through the vagina, pulled it upward and out of the loin wound. Tait, of Chicago, removed the lower end of the ureter through an anterior extra-peritoneal opening, the same as Kelly and Ill. Baldwin and Pryor prefer the trans-peritoneal route. The former makes button-hole openings in the peritoneum over the ureter long enough to insert two fingers, and closes them with suture after the ureter is removed. Pryor operates through the semilunar line, draws the ureter in front of the uterine artery, inverts three-quarter inch of the ureteral stump into the bladder by means of a probe passed through the urethra. In his case the probe was passed over the pubes, the ureter sloughed and the probe was withdrawn in the third week.

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SOME EXPERIENCES WITH BLOOD EXAMINATION.*

By JOHN B. DEEVER, M. D., Philadelphia, Pa.,
Surgeon-in-Chief to German Hospital, etc.,
and

EDWARD KEMP MOORE, M. D., Philadelphia, Pa.,
Assistant Pathologist to German Hospital.

To begin with, it is expected that this paper will not be favorably received by many of the profession. Nevertheless, as the popularity of a paper is the least of its merits, we feel justified in reording our experiences with blood examinations, even if they do not verify the extravagant claims that have been made by some of those who have made this subject more or less of a specialty.

During the last few years there have been made at the German Hospital several thousand blood examinations upon the surgical patients, and the views given you are based upon the results of these examinations, contrasted with the actual pathological findings at the operating table.

What is said may seem to have the object of discouraging what is sometimes called the scientific side of medicine, but this should not be the case; for if the practical benefits of the laboratory methods of diagnosis are not found as great as their originators hoped for, it is their duty to find the reasons for this and place their findings on the firm basis of fact that will make them of the greatest practical benefit to the profession. As an example, take the subject of albumen in the urine. When Bright first announced his discovery of this method of diagnosis, after the first wave of incredulity had passed, there was a period when every case with albumen in the urine was expected to die of acute nephritis within a year or so. How untrue that view was

we all know. But it was not to those who reported only the cases favorable to that theory to whom credit for advancement was due, but it is to those who reported the cases exactly as they found them, the papers of protest—to which we are indebted for the proper subjugation of this symptom, and its establishment as the valuable means of diagnosis that it undoubtedly is.

Just so with examinations of the blood, although not in years in its development, this subject is still in its infancy, and we believe that there must be many of the positive claims made for it greatly modified before it is placed on a stable basis and is in proper condition to be of the greatest usefulness to the practical physician and surgeon.

There is undoubtedly much to be learned from examination of the blood, and the faults found with its result should not be taken as an effort to hew down the tree, but rather as a pruning to make it take on new vigor and develop into greater usefulness.

With many of the diseases in which an examination of the blood is said to yield a most gratifying result our experience has been very limited, and also with some of the different examinations; so that this paper cannot be a complete review of this subject, but only of that part which has been called to notice in a general surgical practice.

PARASITES IN THE BLOOD.

Undoubtedly examinations of the blood for the *hematozoa malarie* are of the greatest value, and when found are absolutely diagnostic of the disease. If the only results achieved by the work done upon the blood had been the discovery of this parasite, the labors of the investigators would have been well repaid. There are certain manifestations of malaria that so closely simulate certain septic conditions that, without this means of diagnosis, their differentiation would be almost impossible. There are, for instance, irregular types of malaria that simulate gall-stone disease so identically, and were it not

* Read by title before the Medical Society of Virginia during its session in Lynchburg, November 5-7, 1901

for the presence of the hematozoa in the blood a prompt diagnosis would be impossible. However, it has been our experience that the more irregular and atypical the case of malaria, the harder are the organisms to find; and therefore in a case where malaria is suspected a single negative blood examination should not carry much weight.

The *filaria sanguinis hominis* is another of the parasites of the blood, the detection of which might be a valuable means of diagnosis; but since elephantiasis is quite rare in this locality, we have never met with a case which was confused with any more purely surgical affection. Indeed, at the German Hospital there is only one case in which the finding of this parasite is recorded.

With the *spirillum of relapsing fever* we have had no experience whatever.

In regard to the various *pyogenic bacteremias* we must say that we have received very little practical benefit from cultures taken from the blood. In the first place, the results of such cultures are usually negative, except in such advanced cases that this method was not needed to diagnose the condition. In the second place, a careful bacterial study takes such a long time, that by the time the surgeon receives it the patient has often passed on to the care of the Great Physician; and the only object achieved is to file the bacteriological along with the post-mortem to make the records of the case complete.

We have frequently had the blood examined for *micro-organisms* in cases in which malignant endocarditis was suspected, but usually with negative results; and even when successful it is hard to see with what benefit to the patient.

We should like to place ourselves on record as being bitterly opposed to painful or disturbing examinations of a patient that do not promise him, or her, any benefit, but are made merely because they are interesting. Often too much zeal in scientific examinations has a very disturbing mental effect on a patient, and acts very much to his detriment.

SERUM EXAMINATION.

The action of the blood serum of a patient suffering from a bacterial disease upon a culture of the specific micro-organism has received much attention lately. Of these, the Widal reaction for the diagnosis of typhoid fever is the only one with which we are at all familiar.

Undoubtedly a *positive Widal reaction* can be obtained after the seventh or tenth day of the disease in a very large percentage of cases of

typhoid fever; but as a diagnostic aid to a surgeon, its results are upon the whole disappointing. Sometimes in the first days of an enteric fever, the clinical picture very closely resembles that of acute appendicitis. At this early date the Widal reaction has not been established, and in practically all cases the clinical symptoms have made the diagnosis before the Widal reaction has become positive.

There are, too, a certain percentage of cases of typhoid fever in which the Widal is negative all through the disease until the third or fourth week, or is intermittent. In our experience, it is in the cases in which the clinical symptoms are the most perplexing that the Widal reaction most often fails.

Another source of error is that a few patients without definite typhoid give a positive Widal reaction. Our attention has been especially called to two cases of acute miliary tuberculosis and one of tubercular peritonitis—all three of which gave the Widal reaction and occasioned some confusion in the diagnosis. After an attack of typhoid fever the blood will give a positive Widal reaction for an indefinite number of years, a fact that should never be forgotten, as sometimes it is only with the most careful questioning that we can elicit a history of typhoid, if it is possible at all.

From the observations enumerated, we conclude that a positive Widal is rarely of much value to the surgeon, however valuable it may be to the medical man. A negative Widal reaction, especially after an illness of two or three weeks, seems more often of service; for if after two or three weeks the Widal is persistently negative, we can be almost certain that the case is not one of typhoid fever.

Value has been claimed for the serum reaction in colon, paracolon, protens and pyocyaneus infections and infectious tropical dysentery; but personally we have had no experience with these serum reactions, and so are not in a position to judge of their merits.

The subject of the *coagulability of the blood in jaundiced patients* is another of the serum examinations that has received attention lately. In jaundiced patients, the blood is certainly much slower in coagulating than is normal blood, and after the administration of calcium chloride or gelatine the length of time necessary for coagulation seems to be diminished, but yet at operation there seems to be very little difference in the amount of hemorrhage, whether these substances have been given or not. However, there

is no harm in their administration, if the operator should fancy them; but in our experience proper gauze packing at operation and full doses of opium afterward have given the best results in troublesome oozing in gall-bladder surgery.

Sugar in the blood can be quite easily demonstrated, but this examination is usually more interesting than valuable. For the urine of all surgical patients is examined for sugar, and tests for sugar in the urine are as reliable and easier of application than are the blood tests. However, in rare cases with dysuria of post-mortem, it might prove itself of value.

EXAMINATION OF HEMOGLOBIN.

Justi's hæmoglobin test for the diagnosis of syphilis has proved itself very satisfactory in the cases in which we have used it, and in a doubtful case is well worth a trial.

Oligochromæmia in surgery has been considered of great importance. Some surgeons have stated that they would not operate upon a case in which the hæmoglobin was reduced below 40 per cent.; others take 30 per cent. as the limit of safety. Our experience, however, does not bear out this view. For an acute suppurative condition or after acute or chronic hemorrhages, operation for the relief of the condition may be undertaken—no matter what the percentage of hæmoglobin; and we have records of several cases operated, with only from 10 to 20 per cent. of hæmoglobin that terminated favorably.

In *appendicitis*, there is a marked loss of hæmoglobin, usually from 20 to 35 per cent., and this occurs in both the acute and chronic cases. It, however, seems to have very little prognostic importance, for out of 118 cases two had a percentage of less than 40 per cent. of hæmoglobin, and both of these were operated successfully.

ERYTHROCYTE COUNT.

This gives the surgeon an index as to the powers of resistance of a patient, as well as a guide to the severity of the infection. In a case which appears to be only a moderate infection, if the hæmoglobin and erythrocytes fall rapidly and markedly, there are several points to be seriously considered. First, has the patient a very feeble power of resistance due to individual idiosyncrasy, or a complicating disease, such as nephritis, and must we, therefore, make our surgical procedures as limited as possible? Or, secondly, have we misjudged the severity of the infection?

In carcinoma in the advanced stages, there is

a marked fall in the number of erythrocytes, but this fall is in no way diagnostic, and in the less advanced cases with which the surgeon has usually to deal is either absent or insignificant.

There may be in *appendicitis* a very notable fall in the number of red blood cells, both in the chronic and acute forms; and this, although interesting, and often apparently out of proportion to the severity of the condition, we have not been able to make of any great diagnostic or prognostic use.

A chlorotic condition of the blood is often valuable in explaining the cause of amenorrhœa and leucorrhœa in young girls, as well as in other conditions.

LEUCOCYTOSIS.

This phase of our subject is both the most valuable and the most disappointing part of the examination of the blood. Dr. J. C. Da Costa, Jr., Hæmatologist to the German Hospital, took 118 cases of *appendicitis* and tried to define the rules governing the leucocyte count, with the following result:

"In simple catarrhal and interstitial forms the numbers of leucocytes, as a rule, did not exceed 10,000 per cubic millimeter. In a certain proportion of cases, however, exceptions to this rule were noted, for counts of 12,000 or 15,000, and even higher, were sometimes made. 36.8 per cent. of catarrhal or interstitial cases showed a leucocyte increase of from 10,000 to 17,100 per cubic millimeter, the latter being the maximum, while in 60.1 per cent. the counts were below 10,000, the minimum being 1,600. Most of these high counts were attributed to a local non-purulent inflammation limited to the peritoneal covering of the appendix, since a circumscribed peritonitis of this sort was very commonly found in this form of the disease. It was tentatively suggested that in some cases the increase represented simply a blood finding of the associated anæmia; or, perhaps, it resulted from blood concentration produced by vomiting or by purging.

"In cases with abscess, gangrene, or peritonitis, a well marked leucocytosis was found in the great majority of cases. In instances of thoroughly walled-off pus foci, from which little or no absorption occurred, leucocytosis was often absent; it was also absent in profoundly septic patients in whom the crippling effects of the poison had stifled reaction. Absence of leucocytosis under this latter circumstance was, however, comparatively rare, since in only 16.6 per cent. of fatal cases was a well defined leucocyto-

sis absent, the counts in these two cases being 6,000 and 11,200, respectively. In the other ten the leucocytes ranged from a minimum of 14,200 to a maximum of 58,200, and averaged 19,400 per cubic millimeter.

"In three cases, extension of the pus focus and general peritonitis was indicated by a progressive increase in the leucocytosis; this increase having been found to vary from 6,600 to 14,000 cells to the cubic millimeter in excess of the number previously counted. While absence of leucocytosis was observed in connection with small pus collections, it was by no means always true that low counts indicated small abscesses.

"Leucocyte counts ranging between 10,000 and 15,000 or 17,000 cannot be depended upon to reflect the nature of the local lesion, since this degree of increase may be found both in mild catarrhal and in purulent cases. Counts of 20,000 or more *invariably* indicate pus, gangrene, general peritonitis, one or all. Absence of leucocytosis means nothing definite.

"In operative cases complete evacuation of the abscess is followed within a few days by a decline to normal in the number of leucocytes, provided that the recovery of the patient is uneventful. Persistence of a leucocytosis after the third or fourth day following operation may usually be attributed either to an undrained pus pocket, or pockets, to general peritonitis, or to both.

"Attention is called to the fact that as a rule just those conditions which bear the closest clinical resemblance to appendicitis give rise to blood changes identical with those found in the latter disease, so that the blood count as a means of differential diagnosis is greatly limited. Thus, leucocytosis is the rule in such conditions as ovarian abscess, pyosalpinx, ectopic pregnancy, renal abscess, hepatic abscess, gall bladder empyema, and malignant disease of the cecum, all of which conditions have been confused with appendicitis. Since renal and hepatic colics are generally associated with inflammatory complications, which produce leucocytosis, neither of these conditions can be distinguished with confidence from appendicitis simply by the blood examination. Acute gastritis may or may not be accompanied by leucocytosis, so that the blood count cannot be relied upon as a clue in distinguishing this disease from appendicitis. The same is true of dysmenorrhea, in which disease inflammatory changes of the uterus may be the factor of a leucocyte increase. Should the diagnosis lie between appendicitis and enteric fever,

the former is suggested by the presence of leucocytosis, since in typhoid this sign is practically never observed, except in the event of such a complication as intestinal hemorrhage or perforation. In typical cases a leucocytosis is sufficient to exclude such non-inflammatory conditions as simple enteralgia, lead colic, ovarian neuralgia, ovarian cyst, and a movable kidney."

Irregular and inconclusive as these cases are, there are individual cases met with that are still more disappointing; for instance, a young man was admitted to the German Hospital with all the symptoms of a severe attack of appendicitis, the leucocytes on the day of admission numbered 20,000. Operation was refused by the patient, he was treated medically with improvement in all symptoms, the leucocytes gradually fell from day to day; after six days they numbered 7,500. At this time permission for operation was granted, and a large abscess was found in the pelvis, containing at least 500 cc. of pus. At the time of operation the temperature was normal, bowels moving freely, pain absent and stomach retentive, the only indication of the abscess being tenderness and rigidity of the right rectus and a mass discernible upon rectal examination.

In this case the blood examination proved itself entirely unreliable, and it does not take a very large number of such cases to severely shake our confidence in leucocytic counts.

In carcinoma there are no marked blood changes, except the anæmic and blood destruction of extreme cachexia, which is in no respect pathognomonic. Leucocytosis is absent unless due to the absorption of septic material from an ulcerating area or from some intercurrent conditions.

Our experience with the variations in the leucocyte count have been given in a paper published in the *Philadelphia Medical Journal* of June 1, 1901, and we will not infringe upon your time to repeat them here. But in summary will say that the leucocytic count, although at times very valuable, is often very disappointing.

Quite recently it has been announced that the way out of this difficulty lies in the differential count, in which an increase in the polymorphonuclear leucocytes will show the presence of pus without an absolute increase of the leucocytes. Let us hope that this statement will be verified and remove the discrepancies we have found, but as yet this theory has not been investigated fully enough to be conclusive.

The differential count is very valuable in the

diagnosis of pernicious anæmia and the various forms of leukemia, and these diseases cannot be positively diagnosed or eliminated without a differential count. It is said to be of value in the diagnosis of trichinosis, but with its value in this disease we have had no experience.

With the differential count in suppurative conditions the benefits received have been purely negative in character. The theory of the polymorphonuclear increase already mentioned has not as yet been of any practical benefit to us, yet we cannot say that in the future it will not prove of value.

Although we have made a few examinations of the alkalinity of specific gravity of the blood, their results were entirely inconclusive.

This paper, as we have already said, is in no way a complete review of the value of the blood examinations in surgery, but is only some of the more prominent experiences met with in a general surgical practice. There are many diseases in the diagnosis of which blood counts might be and are of value, and also many conditions not mentioned here that interfere with their usefulness.

We have no desire to belittle the real value of blood examinations, for the preceding pages show that they have very often been of greatest value to us. What we do object to is the unfounded claims that have been made for this procedure, which experience does not bear out and which are almost sure to deceive practitioners and lead them into errors likely to sacrifice valuable lives. For instance, the statement that hæmoglobin below 40 per cent. precludes successful operation, if followed out would cost many lives by denying to patients the benefits of operation. Then the statements concerning appendicitis that have appeared from time to time in the medical journals that certain operators depend upon the blood count alone to indicate the time and need for operation in this condition. And so with many other inaccurate, though rosy-hued, statements, which, unless protested against, are likely to deceive all but the most experienced.

We have mentioned in another communication the many artifacts that may interfere with and negate the value of the blood count, such as physiological and drug leucocytoses, errors in technique, etc., and will not repeat them here.

Therefore, let us make use of blood examinations, but not view the results through such rosy-hued glasses that we cannot see their inaccuracies and limits of usefulness.

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SPINA BIFIDA.*

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I have become very much interested in spina bifida for three reasons:

First, because so little has been done for it until recent years, which fact should make us feel the weight of a great responsibility for neglect of such a sad physical affliction.

Second, the praiseworthy effort, on the part of some surgeons of to-day, to alleviate or cure this affection, which effort and the goodly number of successes found in its wake promise that continued labor and thought will result in even greater developments in this line.

Third, because I have had the means of studying the subject objectively.

In order to discuss intelligently the treatment of spina bifida, it would be well to review its pathology and clinical manifestations. The arch of a vertebra develops by two primary centres of ossification, one for each lamina. By local arrest of development there may be non-union between these centres, resulting in spina bifida. There may be non-union posteriorly between the lateral halves of one or more of the spinal membranes. There may be a gap in the skin or in the spinal cord itself. There is usually in any case a protrusion of some of the spinal membranes through the gap in the bone, with or without a part of the cord or some of its nerves. The gap may occur in one or several vertebrae. It occurs more frequently in the lumbar or lumbo-sacral region.

Perhaps the best classification of the pathological findings is as follows:

I. *Spina Bifida Occulta*.—Here there is a cleft in the bone, but no protrusion. This condition is rare, and may be dismissed from consideration with the statement that, when it is complicated by paralytic disturbances, they are due to compression of the cord by fibrous bands, which should be freed by an operation.

II. *Meningocele*.—In this form there is a protrusion of spinal membranes with cerebrospinal fluid, but no nerve elements.

III. *Meningo-Myelocele*.—Here there is, in addition to membranes and fluid, a protrusion of nerve elements. The cord and nerves may be free in the cavity, or the cord may be adherent to the posterior wall of the sac, while the nerves are either free or run in the lateral walls.

*Read before the Medical Society of Virginia, a session in Lynchburg, Va., November 7, 1901.

IV. *Myelocoele*.—This is fortunately rare. In this case the fluid is in the central canal of the cord, the caudal being dilated and the cord ballooned out as the inner lining of the sac.

V. *Fistulous Spina Bifida*, for want of a better name.—Here there is a gap in the skin and some of the spinal membranes and the cerebrospinal fluid is constantly being discharged on the surface. The subjects live only a few days. This is also very rare, and may be dismissed with the feeble hope that some one may, in the future, suggest something for its relief.

There are now left for study three varieties—meningocele, meningo-myelocoele, and myelocoele.

With regard to these, the following clinical facts should be noted: The tumor may be very small, or as large as a cocoanut. It may be soft and covered by thick skin, or it may be very tense, with thin walls. As a result of stretching, the skin over the distal half of the tumor may be like parchment, while over the proximal half it may be thick, but so intimately adherent as to almost defy dissection. The skin may be absent and the surface covered with granulations, or there may be ulceration and perforation.

The tumor may be sessile or pedunculated (Young). The sessile tumor suggests a wide gap in the bones, a large neck to the sac, and the presence of nerve elements. The pedunculated tumor suggests a small gap in the bones, and that the sac is of the meningocele variety, with a small neck. The gap may be so small that communication between the sac and the spinal canal is quite cut off. It is impossible to diagnose positively the absence of nerve elements. It is well to remember that, in all varieties, the dura mater may or may not be one of the coverings of the sac.

Spina bifida is often complicated by some congenital malformation, such as talipes, hair-lip, hydrocephalus, or some nervous disorder, such as paralysis, trophic ulcerations, etc.

The treatment of spina bifida is palliative and radical. The former is employed when the latter is to be deferred or is declined. Its purpose is two-fold, to protect and to exercise compression. It may be employed in the form of a cup of some flexible material, fitted to the tumor, padded with cotton wool, and fastened on by adhesive strips and a roller bandage, with sufficient firmness to produce some compression. This may not only prevent the growth of the tumor, but actually lessen its size. It very occasionally results in a cure. An excellent dress-

ing is that employed by Dr. A. M. Phelps, of New York, who makes a plaster of Paris case to fit the tumor, pads this with absorbent cotton, and fastens it on by a band of plaster of Paris around the case and body. There are two plans of radical treatment—to inject an irritant or to excise the sac. Morton's fluid, consisting of 10 grains of iodine and 30 grains of potassium iodide to one ounce of glycerine, is the irritant now used. The plan is to draw off two drachms of fluid from the sac, and inject the same amount of Morton's fluid, repeating this every ten or twenty days until inflammation ceases or the sac is obliterated.

While this treatment has made some cures, yet I feel constrained to condemn it in no uncertain terms. It should be relegated to the plane of the injection treatment for hernia, than which it is more scientific and far more dangerous. In injecting for hernia, there are many chances of missing the peritoneal cavity, but in injecting the sac of spina bifida, the intraspinal structures can only avoid being injured in the very rare instances, in which the neck of the sac is imperforate.

I agree with Dr. Bayer, who has made a careful study of the subject of spina bifida, that there are many points of resemblance between this condition and hernia, and that practically the same treatment is indicated—viz., excision of the sac, with replacing the nerve elements, if there are any present, ligation or water-tight suturing of the stump and closure of the opening in each of the overlying tissues as far as practicable. Various methods have been used for closing the gap in the bones, such as attaching chips from the ribs, or a chip from the crest of the ilium (Robroff), cutting through the bases of the laminae and drawing them together by sutures, or springing into the gap a piece of celluloid or ivory (Park). All have been generally successful.

It seems eminently proper here to give the opinions of various authorities, on the excision treatment, as well as the results of its employment.

In 1892 Monod¹ reported a case treated by this means with perfect recovery. He also collected thirty cases similarly treated with success. Jalagnier,¹ Perier,¹ Rochet,² Robroff,² Marcy,³ Reid,³ Whitehead,⁴ and Clutton⁴ each report successful cases. Gardner¹ reports a death due to leakage of cerebro-spinal fluid, following the operation. Nicoll⁴ expresses a preference for excision, after observations upon a

series of thirty cases, though I do not find a report of the successes in these cases. Ryvter¹ analyzed twenty cases. Of eight operated upon, five died; twelve not operated upon, all died. Three of the deaths were caused by leakage of the cerebro-spinal fluid.

Hildebrand² analyzed thirteen cases operated upon, three of them myelocoles (myelo-cystocoles). Three died from the operation. One died shortly after leaving the hospital, and another died three months later, from recurrence and hydrocephalus. Two of the eight cured were myelocoles (myelo-cystocoles).

Powers² advocates excision, having collected statistics showing a mortality of 26 per cent. Dr. A. M. Phelps has operated upon five cases with three cures. Dr. Royall Whitman, of New York, favors excision. Dr. Roswell Park, of Buffalo, reports four cases, three completely successful. One recovered from the operation, but died four or five months later from some other disease. Dr. J. K. Young, of Philadelphia, reports a successful case. It seems needless to enter into any argument that excision should be practiced for the permanent cure of spina bifida. The method appeals to any surgeon of thought as the most scientific used, and results prove its practical superiority.

Two questions now suggest themselves: When shall the operation be done? And are there any cases to be excluded? I shall answer the second question first. Though Hildebrand² discards as hopeless all cases with extensive paralysis, I should give them the benefit of the doubt. As they would certainly die without the operation, they could not be harmed by it, and they might be helped. Robroff² reports amelioration of paralysis after the operation. Let us have in view the relief of human suffering and not making statistics.

Of the three varieties of spina bifida under consideration, I should exclude none from operation except possibly those cases complicated by hydrocephalus. The question of when to operate was discussed incidentally by the Orthopedic section at the last meeting of the American Medical Association. The consensus of opinion was that the operation should be delayed if possible until the child is six or seven years of age. There are good reasons for this; the best one, of course, being that an older child can better resist the shock of an operation. I endorse delay in favorable cases, but very large tumors, with extremely thin walls, tumors which grow

rapidly, in spite of proper palliative treatment, and tumors complicated by paralysis, should be operated upon at once. In the case of a tumor with a raw granulating surface, this should be healed, if possible, before operating, but if perforation is imminent from ulceration, operate promptly, rendering the surface as clean as possible by rubbing in carbolic acid, followed in one minute by alcohol—then a coat of collodion.

I have said that I agree with Dr. Bayer that there are many points of resemblance between spina bifida and hernia, but I do not agree with him that the analogy is complete, nor do I, by any means, endorse his statement that the open operation for the former is safer than the operation for the latter affection.

There are a number of conditions which make the operation of excision of the sac in spina bifida an exceedingly dangerous one. The best statistics show a discouraging mortality rate. At some time some one will find means to lessen the power of these deadly influences. I sincerely hope that if the suggestions I shall make along that line are worth little, in themselves, they will, at least, have the effect of arousing thought and action.

What are these dreaded conditions? First, the age of the patient and the length of time he is subjected to the shock of an anesthetic, and a traumatism of decided proportions.

One must see an operation to realize what a hole is made in an infant's back. The time occupied in working in this hole will influence the final result.

Second, the sudden removal of intracranial and intraspinal tension by loss of cerebro-spinal fluid during the operation. This sudden withdrawal of pressure will affect the central nervous system (chiefly, I think, the brain), not only directly, but indirectly through the local circulation, for the blood vessels, accustomed to a long continued and high degree of pressure upon their walls, will relax, become engorged with blood, and will not soon accommodate themselves to the new conditions.

Third, the danger of leakage of cerebro-spinal fluid following an operation, and consequent exhaustion.

Fourth, the shock from handling the cord or nerves when present. I don't recall having seen any reference to this in any writing on spina bifida except in the Manual of Surgical Treatment—Cheyne and Burghard—but it is worthy of a place in the list of dangers.

I made careful observations upon these conditions and their influence in a case I recently operated upon. When the infant first came under my care the tumor, which was in the lumbosacral region, was small, soft, and its walls were very thick, except at one point.

My advice was to defer the operation. Dr. Stuart McGuire saw the little girl with me, when she was three or four months old, and concurred in this opinion. When I saw her again, over two months later, the tumor had grown rapidly. Its walls were tense and alarmingly thin on top. I advised not deferring the operation any longer. Dr. George Ben Johnston saw the case with me a few days later, and gave the same advice.

As soon as arrangements could be made, I took the infant, then about six or seven months old, to the Virginia Hospital and operated.

After the usual careful preparation of the tumor and surrounding area, hot water bags were put under the little patient, and the unexposed parts wrapped in blankets. The usual elliptical incision was made around the tumor, where the skin appeared to be normal. The latter was healthy, but adherent to the sac. Dissection was so tedious that I made another incision as low down as the hope of afterwards uniting the flaps would permit. The same condition existed there. In fact, I found what is not infrequently true, that, over the proximal half of the tumor, the skin, while healthy and in good condition for a flap, was devoid of underlying connective tissue, and directly adherent to the sac.

After the latter was entirely freed, it was punctured and the opening carefully enlarged in order to examine the conditions present. Examination revealed the fact that I was dealing with a meningo-myelecele. The cord was lying in the posterior wall of the sac, but the nerves of the cauda equina were free for a short distance, finally re-entering the walls laterally. The infant did fairly well until the sac was punctured, but, a minute or two after this, shock was pronounced, and when I began to dissect the nerves from the walls, as recommended by most authorities, respiration stopped for half a minute and death seemed imminent.

As soon as it was possible to proceed, I declined to handle the cord and nerves, but separated the dura from the rest of the sac, clipped off the superfluous arachnoid with scissors, and replaced what was left of this membrane with

the cord and nerves in the spinal groove. The dura was then treated like the sac of hernia. The constricted part, close to the gap in the bones, was pierced by a needle carrying a double thread, and was securely ligated.

I am satisfied that the cord and nerves when present should not be disturbed. If the dura is intact the above treatment is indicated, but when it is absent, I should clip through the arachnoid on each side beyond the cord and nerves, replace the latter structures in the groove, and, after detaching the superfluous membrane on each side, stitch the edges together over the nerve elements as nearly water-tight as possible.

I wish to offer two more suggestions, one in regard to shortening the time required to dissect out the sac; and the second, in regard to combatting the loss of tension from escape of cerebro-spinal fluid.

Note the following points: The sac is formed by the protruded spinal membranes. The tumor is the whole mass above the level of the skin. There is always plenty of loose connective tissue between the neck of the sac and the skin up to, and sometimes a little beyond, the level of the base of the tumor, so that, if one could begin at the neck, it would be easy to dissect, with speed, up to the point at which the skin is adherent.

Again, if the dura is present, not only will time be saved by leaving it where it is adherent to the skin, but it will strengthen the flap.

Begin the operation by introducing, with a small needle and fine silk, a purse string suture, on the side of the tumor, as far from the base as the skin is healthy. Pass the suture through the skin only, enclosing a space about the size of a thumb-nail. Within this space dissect into the sac wall to ascertain the presence or absence of the dura. If it is present it will be easy to get between it and the arachnoid without entering the cavity of the sac. Pass a grooved director under the dura, and, cutting on it, carry an incision completely around the tumor, through the skin and dura.

With the finger separate the dura and the arachnoid down to the neck of the sac. Then, in the middle line of the back, make a short, longitudinal incision. Begin this an inch or less above the tumor and carry it down on to the same as far as the skin is thick. Through this incision carry the finger or a blunt instrument, down to the neck of the sac and rapidly dissect, on each side of it, up to where the skin is adherent to the dura. Along the line of this ad-

hesion cut the dura with scissors as fast as the dissection is brought up to it, on each side, leaving the adherent dura to strengthen the flap. In cases in which the dura is absent, the search inside the purse string suture will end in puncture of the sac, but no harm will be done and information will be gained. Tie the purse string quickly to stop leakage until the sac is isolated. The width of the flaps must, in this instance, be sacrificed to time. Make the same median incision described above. A finger in this incision will discover, instantly, the plane at which the skin becomes adherent. On this plane make an elliptical incision around the tumor. Through the median cut go down to the neck and dissect up to the elliptical incision all around. I feel that it would be no exaggeration to say that either plan would, in many cases, reduce the time of the dissection seventy-five per cent.

That which is the greatest menace to our efforts at cure of spina bifida, by the open operation, is the removal of tension incident to the loss of cerebro-spinal fluid.

It was the chief cause of the prolonged shock to which the little one I operated upon succumbed five hours after leaving the table. She aroused from chloroform in a short while. By the use of stimulants, and surrounding her with hot water bags, the surface became comfortably warm and the pulse improved, but the nervous system, or, at least, the brain, never really reacted. Her mother failed to attract her attention. Flicking the finger before the wide open eyes caused no reflex. More significant still, there was retraction of the head, and, at intervals, from the time she aroused from the anesthetic until death, there was that characteristic meningeal cry which we dread to hear, in exhausting ileo-colitis, announcing intracranial complication. Park and others advise lowering the head when the sac is opened. Reid, in his case, aspirated the tumor on several successive days before the operation, thus relieving the tension gradually.

Both these procedures I heartily endorse. I would have tried Reid's plan could I have gotten the case in the hospital several days ahead.

Whenever practicable, ligating the pedicle of the sac is preferable to closing it by sutures—first, because there would be less risk of leakage; second, because it favors carrying out the plan I will now suggest for restoring the intraspinal and intracranial tension. Of course, the

sac should be dealt with as rapidly as possible, in order to avoid waste of fluid. Then to restore pressure, inject with a small glass syringe a few drachms of warm normal salt solution into the cavity of the stump, as it is being closed. Put the nozzle of the syringe through the loop of the ligature or the last suture, as the case may be. Inject the solution slowly, palpating the stump the while to estimate the tension produced, and when the desired amount is introduced, withdraw the syringe carefully, tightening the loop of the ligature at the same time to prevent the escape of fluid.

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A REVIEW OF ECHINOCOCCUS DISEASE IN NORTH AMERICA.*

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From the paper which I have prepared for publication in your *Transactions*, I shall extract and present only the substance in as few words as may be compatible with clearness.

My aim has been to make available for reference and instruction the facts shown by a detailed review, individually, of all cases of echinococcus disease that have been reported from American sources in the United States and Canada—as similar statistical studies have been made for other countries. I have omitted all reference to the medical or surgical treatment of the disease, and to the result of such treatment, and have limited myself to the general study of the disease.

Two previous reviews, along these lines, have been made—the first by Osler, in 1882, and the second by Sommer, in 1895 and 1896. Osler and Sommer's combined statistics covered 110 cases from the United States and Canada. This number I have been able to more than double, and the brief notes that I shall now read are based upon 241 cases observed in North America, many of which have never previously been reported in print.

*Read at the annual meeting of the New York State Medical Association, held at New York, October 21st-24th, 1901.

I shall present notes, in order, under each of the following headings:

Age.

Sex.

Nationality.

Geographical Distribution—by States and Provinces.

Anatomical Location, by Organs Involved.

Diagnosis.

Is the Disease on the Increase in America?

The Distribution of the Disease in Animals in America.

*The Occurrence in Dogs of the Adult Tape-worm—*Tania and echinococcus.**

Prophylaxis.

Commercial Considerations.

Age.—Seventy-four per cent. of all the cases occur in young and middle-aged adults, 59 per cent. occurring in the third and fourth decades of life. Under the age of ten years, the disease is a rarity, in spite of the fact that young children are apparently more exposed to infection than adults. The disease is also rare after 60 years of age.

Sex.—The proportion of males to females was 3 to 2, a reversal of the sex ratio reported by most authorities. The fact that the great bulk of the American cases occurred in foreigners, among whom young adult males somewhat predominated, may, perhaps, in part, explain the unusual sex ratio in the American cases.

Nationality.—Forty per cent. of the American cases were in Icelanders, mostly in Manitoba, reported chiefly by Ferguson and Chown. Germany shows 15 per cent.; Italy, 14, and Great Britain, 9 per cent. Foreigners represent 91 per cent. of all the cases, and those of native birth only 9 per cent. The disease seems to have been directly imported into America in the great majority of cases by emigrants from foreign countries. The relative immunity of Americans is seen even among the American born children of the Icelandic immigrants of Manitoba, among whom the disease is very common. It is interesting to note that Ferguson saw no cases of the disease in the Canadian-born offspring of Icelandic emigrants. Chown, however, observed one such case in a young woman, aged twenty-three years. This case, therefore, gives ground for the apprehension that an endemic focus of the disease has already been established in Winnipeg by the Icelandic colony, and that further cases may occur in the children of Icelanders as they reach maturity, the period of life in which the disease is

most commonly observed. The disease prevails chiefly in the lower classes, and particularly among the ignorant and slovenly, but not exclusively, for instances of the disease are recorded in persons of rank and culture.

Geographical Distribution, by States and Provinces.—There seems to be nothing noteworthy in the geographical distribution shown except the fact that concentration of the disease in certain States is coincident with concentration of population, and especially foreign immigrant population in such States. Attention has already been called to the prevalence of the disease among the Icelandic immigrants of Manitoba. It is noticeable that so few cases are furnished by the great grazing and cattle-raising States of the West, where it would seem, *a priori*, that the conditions favorable to the spread of the disease might prevail.

The State of New York furnishes 59 cases, or about 25 per cent of all, thus heading the list of States.

The United States furnishes two-thirds, and Canada one-third of the cases.

Anatomical Location, by Organs.—The liver is the seat of election of the parasite, being involved in 73.7 per cent. of the cases—a high rate compared with other statistics. Davaine gives for the liver 44 per cent.; Neisser 50 per cent., and Finsen 69 per cent. Next to the liver the order of frequency of the organs involved by the disease as follows: Omentum, peritoneal cavity, peritoneum, and mesentery (combined), 10.8 per cent.; lung, 4.5 per cent.; spleen and kidney, each, 3.7 per cent.; bladder, 3.3 per cent., etc. Very unusual sites of the parasite are shown in our statistics in the case of an inguinal hernia, nasal septum, pericardium, head of the humerus, brain, eye, prostate, testicle, pancreas, and pleura (primary), in one case each. The multilocular type of cysts (*echinococcus multilocularis*) is mentioned in four cases—three times in the liver and once in the female breast. Two of these cases were in negroes, in the breast and in the liver. Rupture of cysts into the following organs is mentioned: intestine, stomach, bile-ducts, bladder, peritoneal cavity, and lung. Rupture through the chest wall externally took place in one case. Discharge of cysts, cyst membrane, or hooklets by the various natural outlets of the body was mentioned as follows: passed per rectum, 11 cases (4.5 per cent.); expectorated, 7 cases (2.9 per cent.); vomited, 4 cases (1.6 per cent.), and passed per urethram, 2 cases (0.8 per cent.).

Diagnosis.—The diagnosis of echinococcus disease in the American cases seems to have been based on the gross appearances of the cysts, the presence of daughter cysts, the site of the cysts, etc., in a majority of the cases. However, in a fair proportion of the more recently reported cases, such characteristic microscopical elements as brood capsules, scolices, hooklets, calcareous corpuscles, lamellated cyst membrane, etc., were mentioned in support of the diagnosis. The chemical tests of the cyst fluid for the absence of albumin and the presence of grape-sugar were commonly applied, and the specific gravity was tested in many cases. Succinic acid, said by Leuckart to be "found in hardly any other living organism," and pathognomonic of hydatid fluid, was looked for in only a few cases. The physical characteristic of the outward curling of the elastic cyst wall, when incised, was only rarely mentioned. In doubtful cases none of these points of diagnosis should be neglected, though any or all of them may be wanting in atypical or degenerated cysts.

It has been a difficult matter, in reviewing the literature, to decide what cases ought to be excluded because of insufficient evidence of the true cestode nature of the cysts, and perhaps an occasional case has been included in the summary of cases that might better have been omitted. Without being hypercritical, we have tried to be conservative in judging of cases. It is possible, also, that an occasional case may have been reported independently by different observers, and thus included more than once in our summary, though we have been on our guard against this source of error.

Is the Disease Increasing?—This important question, we believe, cannot be answered authoritatively at present. It is true that the great majority of cases in our statistics are accredited to recent years. This fact, however, cannot be accepted as evidence that the disease is more common now than formerly. It is only within recent years that the habit of reporting rare and interesting cases in the medical journals has become general. Probably more cases of pneumonia, typhoid fever, or any other disease that might be mentioned, have been reported in the medical literature in the last quarter of a century than in all previous time. This fact plainly does not argue that these diseases are increasing in prevalence, but merely that they are being better recognized, studied, and discussed than formerly. So we are not able to affirm that hydatid disease is increasing

in America. Still, one of the best authorities, Dr. C. W. Stiles, zoologist of the Bureau of Animal Industry, has stated that the disease in the domesticated animals in the United States is undoubtedly on the increase. If this be true, it is also probably true that the disease in man is on the increase in this country. Probably only a small portion of the cases occurring in the country are recognized and reported. However, the disease is still a rarity, and is considered a curiosity in medical circles.

Hydatid Disease in Animals.—With the exception of the records of the United States meat inspection service, published by Dr. D. E. Salmon, chief of the Bureau of Animal Industry, the evidence seems to indicate that hydatid cysts in our domesticated animals are not uncommon, different observers finding them in from 1 to 10 per cent. of animals examined. It is difficult to reconcile these various observations with the enormous statistics of the government meat inspection service, which indicate that the disease is a great rarity in the live stock of the United States. In the two years ending June 30, 1899, only six out of 8,831,927 cattle were condemned in whole or in part on account of hydatid disease, or one in 1,471,987; 209 out of 11,110,776 sheep, or one in 53,161, and 1,994 out of 44,841,779 hogs, or one in 22,488. The official authority of these figures, as well as their enormous scope, support them against the evidence of the other scattered observations recorded in Table VII, and we are, therefore, bound to assume that at present echinococcus disease is a very rare affection in the native herds and flocks of this country, as it is also among the native population.

The United States meat inspection service, however, gives only the aggregate for the whole country, and furnishes no facts on the special distribution of the disease in different parts of the country. It is quite likely that the disease is not evenly distributed throughout the country, but prevails in certain districts in greater proportion than in other districts, and that endemic foci of the disease exist, perhaps, here and there. Such a presumption is favored by the known facts of the distribution of the disease in Germany and other countries, and would help to explain the greater frequency of the disease in animals reported from certain parts of the country by various individual observers.

Occurrence of the Adult Tapeworm (Tœnia Echinococcus) in Dogs.—It would, therefore, appear, *a priori*, that the adult *tœnia echino-*

coccus, from whose eggs, when introduced into the gastro-intestinal tract, are developed the larval hydatid cysts, must be an exceedingly rare tapeworm in the dogs of North America. And this is shown to be the case by the fact that this tapeworm in dogs has been discovered and confirmed by competent authority in only a single instance in the United States, by Curtice, in Washington, D. C. Osler failed to find it in "some scores of dogs" examined in Canada from 1867 to 1882. Osler and Clement, in 1883, from Montreal, wrote: "We have never met with a specimen in numerous dissections." Sommer examined fifty dogs in Washington, D. C., in 1896, without finding it. Ward did not discover it among twenty dogs examined in Lincoln, Neb., in 1897. Stiles and Hassall, of the Bureau of Animal Industry, Washington, D. C., have never in their large experience seen it from any American source, except the single specimen discovered by Curtice. Sommer, in 1900, wrote: "In numerous dogs examined since 1896 at Blackwell's Island, New York, and in the State of New York, I have never succeeded in finding the *tenia echinococcus*." More extensive investigations than heretofore made, however, are required for determining the distribution and rate of occurrence of this parasite in dogs on this continent. The minute size of the tapeworm makes its detection difficult, and throws the burden of investigating its occurrence on the few scientific zoologists, veterinarians, and physicians who have given special attention to the much-neglected study of helminthology.

Prophylaxis.—Echinococcus disease in man and animal is one and the same disease, derived from a common source—namely, the ingestion with food or drink of the eggs of the *tenia echinococcus*—a tiny tapeworm inhabiting the intestinal tract of dogs and wolves. The dog or wolf represents the determinate host of the parasite, and man and various animals the intermediary host, in which the larval or bladder stage of the parasite in its cycle of development is undergone. For human beings or animals to become infected with the larval stage or hydatid cysts, they must in some way receive the eggs of the adult tapeworm of dogs into their stomachs, where the capsule or shell of the egg is digested, and the embryo is released and enabled to penetrate the wall of the stomach or intestine, and be carried to its destination in the liver or elsewhere in the body, where it undergoes its metamorphosis into a bladder or hydatid cyst. For dogs to become infected with the adult tape-

worm it is necessary that they ingest the live scolices contained in hydatid cysts; in other words, that they eat the cysts or cyst contents of animals infected with the disease. The full cycle of development in the life history of the parasite is thus established.

This leads us to a consideration of the *means of controlling the spread of the disease*, which can be effected in two ways—viz., first, by carefully destroying, by burning, the larval cysts in slaughtered animals and thus preventing the infection of dogs; and, second, by guarding ourselves against infection from dogs by "recalling that the dog is not a human being and should not be treated as one. Too intimate association with dogs is sure to breed the disease in man." (Stiles.) Stray and ownerless dogs should be killed. But, though we can in a large measure protect *ourselves* against infection from dogs, we cannot equally guard our domesticated *animals* against such infection, except by first protecting our dogs against infection from diseased cattle, sheep, and swine. And this is the *key to the whole problem*. We can exterminate the disease by enforcing proper sanitary regulations at the slaughter-houses. Compel the destruction by burning of hydatid cysts found in slaughtered animals, and the infection of dogs and the subsequent infection of man or animals from dogs is prevented, except by remote possibilities hardly worthy of consideration. The practice of throwing out the offal of slaughtered animals should be interdicted by law, and dogs should be prohibited from entering the premises of slaughter-houses. The worst offender against these plain rules of public hygiene is the *country slaughter-house*, and against it our first and chief efforts for reform must be directed, as already insisted upon by Stiles.

"Hydatid disease is at present comparatively rare in this country, and now is the time to attack it. By proper precautions at the abattoirs and slaughter-houses this dangerous parasite can be totally eradicated from the country. If these precautions are not carried out, it will be only a question of time when this country will take its place with Germany and Australia in respect to the number of human lives sacrificed to a disease which has not yet gained much ground with us, and can now be easily controlled."

Commercial Considerations.—Finally, it may not be amiss to mention the possible commercial importance that this disease in our livestock may in the future assume if it is now neglected and allowed to gain a permanent place on

this continent. In view of our past experiences in the matter of international commercial jealousies and reprisals against American cattle by certain European nations, under the pretence of sanitary safeguards, the United States government may well give serious heed to the possibility of furnishing to countries commercially hostile to us a plausible pretext for the exclusion of American animals, if by its present negligence it allows hydatid disease to become endemic and widespread in this country, as it is in Germany, Australia, the Argentine Republic, and many other parts of the civilized world

STRANGULATED HERNIA.*

By SOUTHGATE LEIGH, M. D., Norfolk, Va.,
Surgeon St. Vincent Hospital, etc.

A strangulated hernia is one in which the blood supply has been more or less cut off, thus producing swelling and eventually gangrene of the contents of the hernial sac. It is very difficult to determine accurately from the patient's symptoms the extent of the strangulation, and as the condition is one of great danger to the patient's life, it permits of no delay in the necessary relief measures. While the conservative surgeon would decrie unnecessary operations in ordinary surgical cases, yet this belongs to a class in which, in case of doubt, the operation should be immediately performed. Symptoms are often so misleading that we must be cautious not to lay too much stress upon them. Pain, nausea and depression are usually present, and yet I have operated on cases in which these symptoms were but slightly manifested, and the gut was found, on opening the sac, to be in a most serious and uncertain condition. Obstruction of the bowels is a more constant and reliable symptom. And yet there are cases of strangulation of omentum without any interference with the bowels whatever. Simple omental cases are not so dangerous to life, and the strangulation may continue and be complete for several days without producing any depressing effects on the patient's general condition. We must bear in mind, however, that there is some risk of the strangulated piece of omentum

becoming infected and causing trouble when the operation is finally performed. A recent case of mine illustrates this point.

The patient, a man forty-five years old, had for years an irreducible inguinal hernia, but had experienced very little trouble from it. For a week before I operated on him it had been hard and tender, and had caused him some anxiety. He felt badly and stopped work, but was still able to walk. No stomach or intestinal symptoms were present. On examination I found a very slight temperature and a tender, rather tense, boggy mass in the inguinal region. On opening the sac I found a piece of omentum, adherent at one point and completely strangulated. There was no gut present. The surrounding tissues were so œdematous that I feared they were slightly infected. On that account I thoroughly disinfected before replacing the stump of the omentum and closed the wound only partially. On the second day on removing the dressings, the wound was found to be filled with pus.

In another case I found the omentum strangulated badly, and a piece of gut in the sac unjured. Here the strangulation was of shorter duration and the parts had not become infected, I therefore felt safe in doing an operation for radical cure. The result was good.

Most cases of strangulated hernia contain small intestine, and frequently it is accompanied by omentum. The latter is rarely strangulated, and yet it is usually best to tie it off and remove it. The constriction in a strangulated hernia is usually in the hernial ring, though not infrequently in the neck of the sac itself. This latter is sometimes the case in old hernia, where some undigested food has accumulated in the piece of gut and caused swelling of the whole loop intestine.

When we suspect strangulated hernia in one of our patients, we should elevate the foot of the bed, flex the thighs slightly, and make *very gentle manipulations* to reduce the hernia. The walls of a strangulated gut are friable and very susceptible to bruising or even rupture. Therefore *no force whatever* should be resorted to. If the symptoms are not very urgent it might be well to make cool, wet applications to the hernia for one or two hours, with the view of reducing any possible inflammatory swelling. Again taxis should be gently employed. I am little afraid of the ice bag, although I have employed it in a number of cases, and have seen no bad

* Read before the Thirty second Annual Session of the Virginia Medical Society, held at Lynchburg November 5-7, 1901.

result. Yet it seems to me that theoretically it is a bad practice, the *extreme* cold being apt to hasten the impending gangrenous condition.

It is difficult to decide how long it is safe to wait before operating. Each case must be judged by itself, and must be watched constantly. Some cases have to be operated on immediately, while others may be safely put off for a short while at least. The element of doubt comes from our inability to determine positively the condition of the hernial contents. If the gut has its circulation completely cut off it should be operated upon immediately. I think a good rule for the surgeon is to operate at once, unless he is *sure that the gut is not being harmed*. I recall a case in which the gut was completely strangulated in two hours, and yet I remember another in which severe symptoms of strangulation had existed for six days before I saw the patient. Both of these cases recovered.

The danger of delay is great, and fortunately for our patients there is practically no risk in the simple operation to relieve the constriction. This is true even in the hands of inexperienced operators if they will but be strict with their aseptic precautions. Every physician, and especially those in the remote districts, should be prepared to do this operation. But I cannot advise the general practitioners to attempt the operation for radical cure. This should be done only in hospitals, or where hospital facilities may be obtained.

The surgical procedure necessary to relieve the dangerous condition is extremely simple. The *condition* is what causes the danger and not the operation.

I wish to lay some stress upon a *form of surgical shock* which is peculiar to cases of *strangulation and obstruction*, and often comes on so insidiously and suddenly that it may take the operator unawares. Whether this shock is purely nervous, or partly from absorption, I do not know. It is nevertheless dangerous, and must be borne constantly in mind during the operation. On account of it, the operation should be done with *great rapidity*, and the patient given as little of the anæsthetic as possible. *Rapidity of operation* is an important element in the success of all modern surgery, and operators should aim to perfect themselves in this important point. With the modern improvements in sterilizing and in rational surgical procedures, the dangers of operating have been reduced to a minimum. But the anæsthesia is

still a "bug-bear" to the surgeon, and often makes life miserable for him. Therefore I make this plea for quick operative work, because the shorter the operation the smaller the amount of anæsthetic administered to the patient.

A case sent me by Dr. J. E. Wood, of Elizabeth City, will illustrate the suddenness with which the peculiar shock comes on. The patient was a young man of good constitution, and had only been suffering with the attack about twenty-four hours. I operated immediately upon his arrival at the Protestant Hospital. His symptoms were not at all severe and his general condition was excellent. I fully expected to do a radical operation. He took the anæsthetic well, and although I did a rapid operation and found the gut in fairly good condition, yet he collapsed so suddenly and profoundly that it required the most active measures to pull him through. I had not even time to ligate the sac, but simply packed the wound and waited for another time to sew it together.

The patient should be well stimulated both hypodermically and by external heat, and the anæsthetic must not be administered until the parts are properly prepared and everything is in readiness for the operation. If the patient has been vomiting offensive material, it is wise to have the mouth thoroughly cleansed. Otherwise there is danger of septic matter being drawn into the lungs and causing trouble afterwards. Some authorities advise washing out the stomach. This is rarely necessary, and is liable to add to the depression. The skin should be closely shaved and washed with warm water and soap, then dried and washed with alcohol, and finally with 1-500 bichloride. The surrounding parts are then covered with aseptic towels and the anæsthesia begun. It is usually best to begin with chloroform, and change to ether if the patient's condition suggests it. Deep anæsthesia is not advisable and is unnecessary. The incision is made over the long axis of the tumor, and should be free. Rapid dissection is made through subcutaneous tissues down to the sac. This is easily recognized, as it is usually distended with a dark fluid. It is cautiously incised between two forceps to prevent injuring its contents. With the finger as a guide, the opening in the sac is enlarged with scissors up to the constriction. The *constriction should never be cut from within*. This is an unsurgical procedure, and is fraught with danger. There is risk of injuring the gut, and

also of causing hemorrhage. The simplest and safest method is as follows: The skin is well retracted by an assistant. The operator presses the finger nail of his left forefinger under the constriction, and dissects cautiously *from the surface* through the intervening tissues down to the nail. This is an *absolutely safe procedure*. In *inguinal hernia* it is usually best to cut the constriction at the *upper part* of the ring. In *femoral hernia* we prefer to incise the inner edge of the constricting band, the incision involving some fibres of Gimbernat's ligament. Though in at least four of these cases I found it necessary to make the incision from above downward, and cut freely through Poupart's ligament. The opening must be made large enough to permit a free restoration of the circulation in the affected parts. If necessary, the neck of the sac, as well as the edge of the ring, has to be incised.

In *umbilical hernia*, the constriction may be incised in any direction, but preferably above or below. The next step in the operation is to envelope the intestine in warm wet cloths, to facilitate the circulation, and then to carefully draw more of the gut into the wound and examine the point of pressure. The omentum, if present, is tied off in sections with small silk, and the stump returned to the abdominal cavity. If the intestine shows no bad injury, and the circulation returns, it may be promptly replaced also. A sponge on a string is now inserted into the opening temporarily, to prevent its protruding. At this point the patient's condition should be carefully considered. If bad, the wound is packed with iodoform gauze, a plug being inserted in place of the sponge, and a firm compressing dressing applied. If, however, the condition permits of a few minutes more delay, the sac is peeled up from the cord and tied off with kangaroo tendon, carried double through its neck by a large smooth needle, crossed and tied on both sides. Then the wound may either be packed as before or radical measures to a smaller or greater extent may be taken to close the hernial opening. These measures depend entirely upon the condition of the patient, and may be stopped at any point. They may consist in simply a partial closing of the skin incision with packing of the deep parts, or may extend to a radical operation for the permanent cure of the hernia; or we may take a few deep sutures of kangaroo tendon simply to strengthen the wall. Let us remember that the *immediate danger* from the strangulation is over, and the

patient's life saved, and any further procedures are *not absolutely necessary*.

I shall not attempt in this paper to go into the details of the operation for the radical cure of hernia. I would refer to my paper on this subject published in the *North Carolina Medical Journal*, December, 1898. The Bassini method is by far the most satisfactory.

In strangulated cases the radical operation should not be done unless the patient is in a *perfectly good physical condition*, and not suffering from shock. The operation is not at all a difficult one, and yet it has to be done deliberately, which necessitates a prolonging of the anaesthesia for at least ten minutes. Without the radical operation, and with no additional anaesthetic, we can nearly always strengthen the weak abdominal wall by roughly closing the hernial opening with two or three kangaroo tendon sutures.

As an illustration, I would mention the case of a gentleman at Smithfield, Va., seventy years of age, on whom I recently operated for a large strangulated inguinal hernia of about thirty hours' standing. I was assisted by his physicians, Drs. Brock and Marshall. He was in pretty good condition, and took chloroform nicely, and yet I was afraid of his age and the size of the hernia. I made a free incision over the mass, dissected rapidly down to the sac, and incised the constriction. The intestine was in good condition, and I replaced it quickly. The operation up to this point had not consumed over four minutes. The anaesthetizer informed me that the patient's condition was as good as when we began. I therefore rapidly separated the sac and tied it off and put in three deep kangaroo tendon sutures to roughly close the ring. With a few catgut sutures I sewed up the skin except the middle of the incision, which I packed lightly. The patient made a beautiful recovery, the wound healing in about two weeks, and the abdominal wall now seems pretty strong.

We frequently meet with cases of prolonged strangulation, in which the gut is badly injured or looks suspicious. In these cases if moist heat does not clear up the circulation sufficiently, or if there is some previously constricted spot which looks threatening, it is wise to leave the affected part of the gut in the wound. To do this the abdominal opening must be made sufficiently large. The gut is carefully placed in the opening in such a position as to allow free passage of the intestinal

contents, and a layer of iodoform gauze gently packed around it. This causes adhesions, which shut off the peritoneal cavity, and thus prevent trouble if the gut should open or has to be opened later. The free portion of the gut is covered with rubber tissue, and then with iodoform gauze. The whole wound is packed lightly with gauze and a tea strainer applied to prevent pressure on the gut. Adhesive straps and a firm bandage are then put on. The patient must be kept very still and under morphia, if necessary. About twelve hours later the gut should be examined, and if it is all right, the packing removed and the gut pushed into the abdomen. Otherwise a fecal fistula may safely be formed, the adhesions protecting the peritoneum. Later an anastomosis may be done between the afferent and efferent pieces of gut, and the fistula will close spontaneously.

I have had one case of fecal fistula, which several months later I operated on with an oblong Murphy button, bringing together the sides of the gut. The abdominal incision was made in such a manner as to keep away from the fistula to prevent infection. The button was passed about the twelfth day, and the patient made an easy recovery. The fistulous opening closed entirely in about two months.

The method of leaving a suspicious piece of gut in the wound I think most highly of. I have used it in seven cases altogether, and in each have gotten a good result. In none have I had to make a fecal fistula. (The case of fecal fistula mentioned above was not in my care when the fistula was formed.) Nor would any of those cases have stood an excision of the intestine. They were all in a desperate condition, and but for the simplicity of the operative procedure would have died.

I have never excised the intestine for gangrene. Such a procedure is indicated where the gut is *unquestionably gangrenous*, and where the patient will stand the ordeal. The operation is naturally attended by considerable danger, owing to the difficulty in preventing contamination from the intestinal contents and the length of the anæsthesia. It is best done with a small, round Murphy button. I doubt its practicability. The method mentioned above is much safer. The excision method is indicated when a large piece of the gut is gangrenous.

Of the seven cases treated by the method under discussion five were cases of femoral hernia, and strange to say, three of these were men!

The other two were cases of strangulated inguinal hernia in men. The first case of this kind was that of a lady forty years old, who was sent to me at St. Vincent's Hospital by Dr. Moore, of Cape Charles. Her condition was wretched in the extreme, and she was able to take but little of the anæsthetic. The gut was very dark, and was cut almost through. I made a large incision entirely through Poupart's ligament, and left the gut in the wound. Twelve hours later I was surprised to find it a good color. I gently pushed it into the cavity. A few days later I closed the wound with kangaroo tendon, and she made a rapid and permanent recovery.

The next case was a patient of Dr. Parker's, of Suffolk, and was a most complicated and desperate one. The man was about forty-five years old, and for six days had had marked symptoms of intestinal obstruction, which every effort had failed to overcome. As a last resort, operation was decided upon, and I was called in to perform it. The patient was in a cold, clammy perspiration, with a weak and rapid pulse, and had been vomiting fecal matter for several hours. Further examination revealed a distended and tense abdomen, and a very small lump in the groin. This felt as if it might be an enlarged gland. The patient assured us that it had been there without change for two years. Although I suspected hernia, yet I thought it best to do an exploratory laparotomy to be sure. I quickly opened the abdomen in the median line, and, on passing my fingers down, found the gut caught in the femoral ring. I then closed the abdominal incision, and on incising the lump found a small piece of intestine almost gangrenous. I hurriedly enlarged the incision through Poupart's ligament, and placed the affected gut in the abdominal cavity, but just under the opening, and packed gauze around it. One side of this gut was as bad as a gut could be without actual perforation. The patient was in a serious condition for days, but finally made a good recovery. The wound healed up by granulation. His strength would not permit of a secondary operation to close the opening, and as we expected he has had a recurrence of the hernia and wears a truss until he can come to operation again.

The third case was a woman sixty-eight years old, with a femoral hernia. She made a good recovery.

The after treatment of the strangulated cases

consists chiefly in hypodermic stimulation to tide them over the dangerous period, together with saline infusion and stimulating enemata. The obstruction being removed, they, as a rule, rapidly recuperate. There is rarely any difficulty in moving the bowels, though in cases where the intestine has been injured it is best to use enemata and no cathartics.

A NEW SUPRA VAGINAL HYSTERECTOMY FORCEPS.

By JOHN W. DILLARD, M. D., Lynchburg, Va.

This device is what I call the supra vaginal hysterectomy forceps, or the uterine Esmarch. I will not enter into a description of the instrument in detail, as I have it here, and you can examine it for yourselves. I am now having the forceps made a little different from this. The new forceps will have three sharp teeth, one-quarter of an inch long, on each inner sur-



face of the blades, in addition to the longitudinal serrations, which are shown on the concave surface of each blade. These little spikes, or teeth, will be an additional guard against any slipping of the forceps after amputation of the cervix.

Uses.—In all cases of supra vaginal hysterectomy for fibroids or any other non-malignant disease.

Application.—After the bladder and peritoneum have been stripped from the growth, and the cervix exposed, the ovarian arteries and round ligaments having been tied off, the assistant holds the tumor up perpendicularly to the body, and the clamp is applied just below the point at which the operator wishes to amputate. Amputation having been done, each uterine artery is found securely held in the corresponding angles of the forceps, and can be tied as any exposed artery.

The downward curve in the blades of the forceps will allow the anterior and posterior surfaces of the cervix to be sewed together before the forceps are removed.

The use of this instrument does not in any respect injure the parts that the operator does not desire to remove, but facilitates and renders entirely bloodless the latter part of the operation.

CHRONIC MYOCARDITIS.*

By J. H. MUSSER, M. D., Philadelphia.

PART I.—MORBID ANATOMY AND PHYSICAL SIGNS.

The more recent studies of cardiac pathology impress one more and more with the force of the old term *morbus cordis*, employed in a generic sense to include the phenomena of chronic cardiac disease. Indeed, Lennec was not far from the truth, in a clinical sense, although not quite correct in his pathology, when he devoted six chapters of his work to hypertrophy and dilatation, five to atrophy, softening, induration and fatty degeneration, and one only to valvular disease. When you think of it, if the heart muscle is healthy, chronic valvulitis yields but few symptoms. If the former structure meets the physiological demands required by the valvulitis, in most lesions no symptoms arise. Valvulitis of the aortic leaflets, admitting regurgitation, is the only lesion which may cause symptoms independent of the state of the myocardium. While the chronic valvulitis may exist for a lifetime with a minimum symptomatology, yet in striking contrast we see chronic disease of the anatomically associated structure—the myocardium—with a most complex

* Read in parts before the Virginia State Medical Society, 1889, and the New York Academy of Medicine, 1900.

pathology and symptomatology. It is not common to have chronic myocarditis, without some hypertrophy, dilatation, atrophy, fatty degeneration or infiltration, singly or combined, or to have any of the latter conditions without myocarditis. In consequence the symptoms of myocarditis are intermingled with those due to other mural changes. Such mingling of pathological conditions must imply a common fundamental causation. Such we see in the state of the pericardium (local myocarditis) or of the coronary arteries (fibrous myocarditis), on the one hand, or, on the other hand, in varying conditions dependent upon intracardiac pressure (myocarditis with dilatation after valvulitis, emphysema or nephritis), or upon the nutritional value of the blood (myocarditis of anemia with fatty degeneration—the fatty heart), or upon the direct but general action of infectious or toxic agencies (parenchymatous myocarditis).

Myocarditis after pericarditis is exemplified in the case of A. E., aged sixty-three years. Heart enlarged; weight 19 ounces; enormous amount of pericardial fat, and distinct chronic pericarditis, there being firm adhesions, nearly obliterating the sac. Hypertrophy is general, the right ventricle being considerably thickened. Aortic valves thickened with dilatation approaching valvular aneurisms. Mitral valve also much thickened, stiffened and dilated. No calcification. Aorta normal. Tricuspid valve decidedly dilated. Heart muscle flabby, containing some white patches, suggestive of fatty metamorphosis. Cavities decidedly dilated.

Myocarditis with dilatation is frequently seen as the terminal event in cases of chronic lung disease, as emphysema (right heart), or of chronic nephritis, or of arteriosclerosis. It was typically seen in the case from which the specimens to be described were removed.

Dilatation of Heart.—A. L., aged fifty-nine years. Heart, in pericardium, extended in fourth interspace from nipple line on right to two inches beyond left nipple in fifth interspace. Pericardial sac contained about the normal amount of fluid. Heart weighed 28 ounces. There was enlargement of both sides. The veins over surface were distended. The cavities were filled with autemortem clots extending into the vessels. Over the right ventricle there was a milky-white patch about three inches in diameter; over the apex another similar patch the size of a quarter of a dollar. The left ventricle was more than one inch in thickness. The muscle

was pale red, quite soft and fatty. The papillary muscle was hypertrophied. The anterior muscle was fully half an inch in breadth at base. Tips were fibroid. Chordæ tendineæ thickened and contracted. The cavity was dilated, four fingers being admitted into valves. The right cavity was enormously dilated. The tricuspid admitted four fingers. The muscles were soft, pale and fatty. The fatty degeneration was not uniform, but in various areas. All the papillary muscles were hypertrophied. The mitral valves were thickened at edges. The bases were surrounded by a ring of atheroma (calcareous) of irregular thickness in continuity. The aortic valves were extensively diseased; the inter-coronary leaflets thickened along edges and at base. The coronary arteries were free from atheroma, except at the mouths, which were dilated.

The remarkable changes in the heart muscle seen in pernicious anemia are too well known to require description, as also are the appearances of parenchymatous myocarditis.

Fibroid Heart.—Far more frequently we find myocarditis, either local or general, the result of coronary artery disease. It was well seen in a case which presented the typical fibroid heart. T. L., aged eighty-one years. The heart was large, without much subpericardial fat. Recent patch of pericardial thickening was seen over apex. Right ventricle enlarged and contained autemortem clot. Muscles very hard, red and firm. Left ventricle hypertrophied at base, 1 1-4 inches thick; at apex 1-2 inch thick, tapering. Papillary muscle of anterior cusp thickened, hypertrophied and fibroid at tip. Fibrous substance extends far up the chordæ tendineæ. Papillary muscle of posterior cusp short, thick and fibroid. Mitral valves slightly thickened and atheromatous. Muscles of left ventricle pale, firm and not fatty. Aortic valves thickened at edges, but competent. Aorta the seat of extreme atheroma lined by calcareous flakes. Both coronary arteries atheromatous. Valves of right heart normal. Aorta extremely dilated in ascending portion.

Local Myocarditis.—In the following the appearances were even more striking. R. B., aged fifty-eight years. Heart was enlarged and weighed 20 ounces. Cavities were dilated. In left ventricle, old thrombi were adherent to walls, and there was a recent clot. Papillary muscles enlarged. Slightly fibrous tips, otherwise presenting but little degeneration. Vessels

in papillary muscles very distinct, undoubtedly enlarged in calibre. Underneath papillary tip in substance of muscle was a dark-red area. Muscle at left apex pale red, mottled yellow, rather firm material. These areas of yellow fibrous matter in the ventricle were next to the cavity, and usually most pronounced when opposite thrombi. Anterior ventricular septum much thickened, very firm and on section presented yellowish areas, alternating with dark red, with normal muscle interwoven. The papillary muscle of the anterior cusp presented the greatest change. Left auricle dilated moderately. Mitral valve admitted three fingers. Some areas of atheroma. The tricuspid orifice was enormously dilated; valve normal. Papillary muscle presented some yellowish-white fibrous change. Muscle was firm, mottled in areas, presenting the most marked change below the pulmonary valves. Auricle much dilated; cavity enlarged and much hypertrophied. Some opacity at base of tricuspid and undoubted degenerative changes. Anterior coronary artery markedly atheromatous, presenting a recent an-temortem clot and an old thrombus, which evidently largely occluded the vessel about one inch from its origin. Surface of heart presented dark red or normal color and light red areas, alternating with yellowish mottling. This area was over the surface of the left ventricle, two inches wide, extending from the base to the apex. It appeared to include that portion supplied by the vessel which was the seat of thrombus. The auricular appendix presented marked areas of yellowish-white fibroid degeneration. Orifice of posterior coronary somewhat occluded, not, however, presenting so rigid and marked appearance. Fat along this artery was abundant, while along other branches, markedly lessened. No thrombi in the lumen of the large veins. Marked and most prominent degenerative changes were seen in the muscles, independent of the fat. Aortic valves normal. Aorta atheromatous throughout entire course.

Local Fibrous Myocarditis.—Or again we see in arteriosclerosis the following appearances of local fibrous myocarditis. J. H., aged eighty-six years. Heart weighed 16 ounces. Left ventricle three-quarters inch in thickness, and apex one-eighth inch thick. Color red, with soft sub-endocardial staining. Papillary muscle rather small. Fibrous at the tops; yellowish color at points. Areas quite marked on section of the muscle. No "tabby-cat" striations of

muscles. Chordæ tendineæ short and thick. Mitral leaflets thick. Edges indurated, but not calcareous. Competent valves. Aortic valve thickened. Corpora not enlarged. Some thickening across middle valve. Base of valves atheromatous. Coronary pouch quite dilated; valves apparently dilated. Aorta dilated, with some atheroma. Coronary artery (right) dilated; walls thickened. In the middle of the artery there is a patch of atheroma (calcareous) half an inch long. Artery seems to be wider below than above. Left coronary artery walls thickened. No atheromatous patches. Right ventricle walls thin and soft. On section from the middle of the cavity to apex in center of muscle is seen a buff-colored leathery line averaging one sixteenth inch in thickness, more marked toward the apex. A number of the papillary muscles in apex are yellow in color, and on section show fatty appearance. The left ventricle is one-eighth inch in thickness. The cavity is dilated.

Leaflets of posterior coronary valve are thickened at margin and are atheromatous; more on the anterior. The muscles are not dilated. The muscle is fatty and fibrous on section. Left auricular endocardium is thick and dull. The muscle is pale yellow in color. In appearance the walls are leathery, being wrinkled and tough. Chicken-fat clots were found in the ventricles and extended into the vessels. The cavity of the left ventricle was dilated. Atheroma of aorta extended throughout its course. It was observed in internal mammary, renal and colon areas. Further examination not made.

Myocarditis and Valvulitis.—The degenerative changes seen in the heart with valvulitis were well exemplified in the following case: W. H., aged twenty-four years. Heart enlarged; left ventricle hypertrophied. Muscle firm. Same appearance in intraventricular septum of fibroid change, as just described. Papillary muscle small. Fibroid at left. Chordæ tendineæ contracted. Mitral orifice admits two fingers very readily. Mitral valves are thickened, atheromatous. The aortic valves contain a few atheromatous patches, particularly at the base. The coronary arteries are atheromatous, elongated and twisted. The aorta is dilated in ascending portion throughout the seat of extensive atheroma.

Local Myocarditis was found in the following cases:

Local Myocarditis and Valvulitis.—J. P.,

aged seventy-six years. Heart weighed twenty-five and one-half ounces. Right side flaccid. Right auricle contained about three ounces of pure blood. Left side flaccid. Auricle contained about three ounces of blood, ventricle about four ounces of fluid blood. The walls of right ventricle slightly thickened. Ventricle contained about five ounces of fluid blood. The walls of left ventricle were somewhat thickened, and in the lower posterior portion, near the apex, an area one inch in diameter and extending nearly through the thickness of the wall was white and fibroid. The pericardium, particularly in left side, was thickened and showed scattered white spots, about one-quarter to three-eighths inch in diameter. The aortic valve, calcareous and slightly incompetent. Atheroma of coronary arteries. Aorta atheromatous, containing calcareous particles.

Local Myocarditis.—J. R., aged forty-nine years. Left cavities filled with soft black clots. Left ventricle firmly contracted and hard. Right auricle contains yellow clot, some black clot and fluid blood, and is distinctly enlarged. The valves of the right side of the heart are normal. The Eustachian valve shows distinctly. The coronary sinus will easily admit a small finger, and does not show any valves. There is no opening through the fossa ovalis. The muscle of the right heart is unusually firm, 12 mm. thick, pale in color; papillary muscles are mottled. The left auricle is normal. The mitral valve is somewhat thickened along the edge, but not retracted. The anterior surface of the anterior leaflet of the mitral valve shows several patches of atheromatous infiltration. The left aortic valve shows a patch of calcareous infiltration at its base. The other aortic leaflets are normal. There are many small patches of atheromatous infiltration around the sinus of Valsalva and around the coronary arteries. The muscle of the left ventricle is about 23 mm. in thickness. The color of the outer portion of the muscle is brown; the deeper layers are yellow. The papillary muscles are mottled and very pale at tip. The muscle of the left ventricle is not enlarged. The coronary arteries are extremely atheromatous. Weight eighteen ounces.

Time forbids allusion to the clinical course of the various forms of myocarditis just referred to. What has just been said of the complexity of the phenomena can be appreciated by noting the following: (a) Myocarditis secondary to pericarditis has the symptoms of dilatation or

of dilated hypertrophy and sometimes of that curious group of symptoms associated with mediastinitis, hepatitis and splenitis, in which the predominant and unequivocal symptoms are hepatic and splenic, with ascites; (b) myocarditis following valvulitis or peripheral obstructions (lung or kidneys) is associated with symptoms of dilatation; herewith are intertwined, on the one hand, the symptoms of emphysema or nephritis; or, on the other hand, those of valvulitis; the physical signs of the latter condition obtain; it is most difficult often to go beyond the diagnosis of dilatation of the heart; (c) myocarditis of toxic and anemic origin; the fatty heart is associated with symptoms of grave secondary or pernicious anemia or of toxemias, as from tobacco or mineral poisoning or from chronic infections; (d) fibrous myocarditis—coronary artery disease.

It is to the clinical expressions of this form of myocarditis I beg leave to call your attention. In the description of the lesions it may have been observed that most of the patients were old subjects, and hence I gave to you an anatomical account of the senile heart—the fibroid heart. Clinically, cases of senile or fibroid heart are so mingled with the other phenomena of senility that we are not wont to ascribe the symptoms to the cardiac lesion more than to the associate degenerative lesions of other organs of the body. Moreover, the vegetative, inactive life led, especially those who become inmates of infirmaries, dulls the sensibilities, reduces the vascular strain or tension to a minimum, and hence effaces or obliterates most of the phenomena of myocarditis.

The form of chronic myocarditis which comes home to us more forcefully is the one seen in subjects just past the prime of life—mostly in males. Their career has been one of active strife, of the surmounting of difficulties. They have usually been accustomed to the good things of the earth, and perhaps have been victims of early syphilitic infection.

March 9, 1898, I was consulted by T. W., manufacturer, aged fifty-eight years; married; has children. Uses tobacco and stimulants moderately. Father died of old age at ninety-three, mother died at eighty-seven, brother died four years ago. Patient's general health always good until present trouble. Never had rheumatism or gout. Prior to six years ago worked very hard. One year ago began to suffer from oppression or accumulation of mucus, requiring

cough; gradual increase in difficulty of breathing, and past few months oppression or weight on heart. At present, smothering at night, necessitating sitting up in bed. Past year, swelling about ankles at night. Coughs in morning to raise mucus (sticky). Appetite good; no indigestion; gaining in weight, now 240 pounds, but is losing strength. Bowels regular. Feels languid, and has dyspnea on slight exertion. Is prematurely old. High-tension pulse. Artery elongated. Marked accentuated aortic second sound; uncertain murmur at second aortic. Heart's impulse not seen or felt. Apex sound loudest at fifth interspace. Both tricuspid and mitral are feeble. Color pale on exertion. Hands dusky.

March 14th: Tired in morning; wants to sleep on reading.

March 21st: Pain and weight better. Can breathe much more freely. *Sleeps without smothering at night. Pulse 96.

October 1, 1897. J. H. J., merchant; aged fifty-five years; married; no children. Until three years ago was an inveterate smoker. Uses no stimulants. Formerly used coffee; now none. No unusual hours of wakefulness. Meals regular. Fast eater and drinks much water. Syphilis in 1863, primary and secondary. Has not been South or exposed to malaria. No acute disease. Had bilious attacks. Father died of bilious trouble, aged seventy-two. Mother died as result of accident. One sister living and healthy. One brother died of consumption of bowels. Two and a half years ago continuous headache, which seemed to affect memory, partly occipital and partly frontal. This headache continued one and a half years. One dose of bromocaffeine would relieve. Irregular as to time of day in severity; not increased by any known cause. Nine months ago began to be short of breath. In July very bad, but now better. Dyspnea increased by walking and ascending stairs, but can ride wheel. The oppression occupies a circle about eight inches; not worse after food. Weight formerly 200, now 180; reduced by disease. Appetite fair; no nausea. Discomfort two hours after eating. No flatulency, but dull, heavy pain, with desire to sit up straight. Dyspnea not worse after eating. No palpitation; no fainting.

Physical examination showed patient to be somewhat pale, with sallowness; said to be natural. Flabby. No scars; no eruption. Heart a little to left. Apex feeble. Impulse feeble.

Fifth interspace inside nipple line. Not enlarged upward. Gallop rhythm and slight intermittency and irregularity. Accentuated second aortic greater when standing up. Gallop rhythm greater with recumbent posture. High arterial tension. No venous phenomena.

November 28, 1897. Until yesterday quite comfortable. Past twenty-four hours some shortness of breath and gastric disturbances. Color better; strength better. Occasionally some dyspnea, but not so frequently as formerly. Does not rise to pass water. Muscular sounds of heart better. No accentuation. Some muscular pain in chest. On talking or reading gets distress in chest; has to stop on account thereof.

December 8, 1897. More dyspnea past week. Last twenty-four hours pain and soreness in chest. On physical examination liver still large. Heart's action feeble and irregular, with high tension and gallop rhythm. Bowels irregular as to character. Some headache and oppression. No enlarged glands.

December 13, 1897. Liver not tender now.

December 27, 1897. Better.

January 19, 1898. Numbness in arms and feeling as if going to drop off, from elbows down; begins shortly after exertion, and stops as soon as walks.

February 2, 1898. Heart irregular. Dyspnea considerable.

February 16, 1898. Heart regular. Dyspnea continues. Some numbness. Apex outside middle clavicular line. Mitral and tricuspid murmur, and gallop rhythm at apex.

March 10, 1898. Death from apoplexy.

The form of chronic myocarditis that occurs at this period of life has some special clinical expressions too often not referred to the heart. Some of them have "pain" for their most prominent symptoms; in others, "dyspnea" is the most severe; in others, syncope or apoplectic attacks and the curious Stokes-Adams syndrome. In still others, distressing arrhythmia occurs. While more or less special symptoms pertain to each individual, the physical appearance and the physical signs are common to all.

Physical Signs.—Of these most common is the sallow pallid countenance. This is most striking. Rarely can you be wrong in the inference, when such persons present themselves, that the endarteritis has involved the coronary artery, and that the myocardium is off. A general endarteritis may be present for a long time

and yet no change occur in the complexion. Interstitial nephritis, I have seen, progress slowly, and yet no change in the complexion. The onset of this hue is generally synchronous with the degenerative cardiac lesion and usually cardiac symptoms or physical signs are found coincidentally; the endarteritis involving the coronary arteries.

With the sallow countenance and earthy complexion, a prematurely old appearance of the individual manifests itself, in the color of the hair, the baggy eyelids and the abundance of wrinkles.

With the external appearance common to most cases the results of physical examination usually tally. In the first place, there is evidence of endarteritis in the vessels. The palpable, often tortuous vessels show thick walls and high tension. The physical signs of the heart are those of (a) myocarditis alone, or those of (b) myocarditis plus some hypertrophy, or those of (c) myocarditis plus dilatation. The physical signs of myocarditis are those of feeble or absent impulse; or, if palpable, of apex impulse displaced to the left, of marked increase in the area of absolute cardiac dulness and of characteristic auscultatory phenomena. These phenomena are those either of a systolic shock, greater than the force of the impulse would lead us to believe to be present, or of feeble muscular sound. In the early stages the former exists, and it continues later if hypertrophy co-exists.

From the first, or at least, early, we have gallop rhythm, or reduplication of the systolic sounds. This reduplication may be heard over the right heart or more distinctly over the left heart; sometimes it is heard all over the precordia. My impression is it is more commonly heard about the fourth rib parasternal line. It may be more marked in the supine position and is generally more marked after exertion. It may disappear after a stimulant is taken or if the heart is stimulated by fever. Reduplication of the second sounds also obtains, but is less frequent in the myocarditis of coronary artery disease than that due to valvulitis or nephritis. In uncomplicated cases murmurs are not heard until late in the disease. Sometimes, however, we hear a systolic murmur at the fourth rib, greater in the recumbent posture. This murmur is soft, low in pitch, and so often heard in the parasternal line that it is my custom to call this line the myocardial line. Again, it is at the tricuspid or even may be in the pulmonary

area—when it is probably, although not necessarily, hemic.

My studies have not followed so closely and exhaustively as their importance demands the brilliant observations of Sewell. I cannot help but think with him the papillary muscles are the source of the auscultatory phenomena or myocarditis whereby leaflets do not coapt synchronously, or areas of the muscle synchronously contract.

The pulse is like that of endarteritis. The artery is readily palpable, isolated with ease, showing high tension, and, while apparently strong because of a quality of fullness which—with the hard vessel—gives a feeling of strength, it is actually feeble. The arteries are fibrous but not necessarily atheromatous. Indeed, the patient with pronounced atheroma will probably not have symptoms at least of endarteritis, and will die of cerebral thrombosis or of senility alone, or of intercurrent infections. Our middle-aged patient with endarteritis does not necessarily end with advanced atheroma, but dies of apoplexy, nephritis, angina or sudden heart asystole.

It is hardly necessary to state the temporal arteries are prominent and we have the other indication of degeneration, the *arcus senilis*.

When dilatation supervenes, if it does, the physical signs change in keeping with the physical condition of the heart. Here, however, the auscultatory signs of insufficiency at the mitral and tricuspid orifices are predominant, rarely at the aortic; accentuation of the pulmonary second sound is a frequent sign, with low tension pulse, and engorgement of the venous side of the circulation.

The myocarditic heart of fatty degeneration—the fatty heart—presents some similar signs. A visible impulse is wanting and any palpable impulse is felt as a slap against the chest wall. The area of dulness is normal or slightly increased; a loud hemic murmur at any orifice, but most frequently at pulmonary and aortic valve, may be heard. Just as frequently the sounds are almost inaudible, the second sound at the base alone is conducted to the ear. There is pulsation of the vessels.

We may say, then, that myocarditis may exist (1) without definite physical signs—a rare occurrence, I believe; (2) with signs of moderate cardiac hypertrophy, marked reduplication being the only physical sign and of significance only when coupled with signs of endarteritis;

(3) with physical signs of dilatation; (4) with physical signs of fatty degeneration; (5) with the physical signs just mentioned, which in the aggregate are of great significance.

1927 Chestnut Street.

Correspondence.

A National Board of Medical Examiners.

To the Editor *Virginia Semi-Monthly*:

In December 28th issue of *American Medicine* there is an article by R. Stansbury Sutton, of Pittsburg, Pa., that should appeal to all medical men and enlist their hearty co-operation, not merely a passive co-operation, but an active, pushing, aggressive campaign, through the proper legislative channels till the result is accomplished.

Dr. Sutton's article deals with the establishment of a *National Board of Medical Examiners*, to replace the present several State Boards and make the examination uniform and practical throughout the Union. That such a result is to be devoutly hoped for few, if any, will dispute. That it is to be achieved, if the medical men of the country will shake off their cloth and work for it, admits of no doubt.

Dr. Sutton's plan of organization is to have a National Board of Examiners, composed of one member from each State, and one for the District of Columbia, and one each from the army and navy. To make the Board non-partisan, he also suggests that there be one member each from the American Institute of Homeopathy and the American Institute of Eclecticism. This, to my mind, is an admirable feature, and vouches for the practicability of the scheme. Personally, I do not favor the idea of the army and navy departments being associated with any board of lay examiners. They have, as a class, always maintained a "holier-than-thou" attitude to the rank and file of the profession, and their persuasion on a board of lay examiners would be apt to create friction; and there are plenty of good men to serve on such a board, without assistance from army or navy.

Dr. Sutton's idea is that such a board should be self-sustaining from fees of applicants. From personal experience, I should say that, charging such a high fee as he suggests (\$50 to \$100), would work a great hardship to many

young graduates. There are hundreds of students who haven't fifty dollars to their names when they graduate. Then there would be the expense of railway travel and board during the examination. The National Government appropriates hundreds of thousands of dollars annually for experiments with new grains and plants; so surely the national health should be worth looking after; and I don't think there would be any difficulty along this line, if properly looked after.

Another function of the Board should be to shut out all graduates of foreign countries from license to practice here, unless the country from which the applicant came recognized our colleges and licenses. Every year there comes pouring over the line from Canada a number of graduates of Canadian schools. They are eligible to take any State Board examination; but let the graduate of any American college go over there, and he will be debarred from the examinations. It is a poor rule that won't work both ways. So I am in favor of shutting off countries that are not reciprocated.

The details of Dr. Sutton's plans are well and carefully worked out, and his article should be copied in every medical journal. Every State society should take up the matter. The American Medical Association should endorse it, and enough pressure brought to bear on our representatives in Congress to push the bill through with speed; for it is not a Democratic or Republican measure, but a measure for the good of all.

After the National Board, what? Nothing less than a new portfolio in the Cabinet—a Minister of Public Health. Roosevelt has recommended a new chair in his Cabinet—a Minister of Commerce—so why not of Public Health? It has been due to the untiring efforts of physicians and sanitarians (many of them laboring under the greatest of handicaps) that the commerce of the world is what it is, and it will be the sanitarian who will lead the way to new fields of commercial endeavor in the opening century. Let us all, then, get together as a unit, for in union there is strength, and in two years our National Board of Examiners will be an accomplished fact, and in 1905, let us hope, there will be sitting in Washington a new adviser of the President—a Minister of Public Health of the United States.

W. H. WALLACE, M. D.

Disputanta, Va., Dec. 29, 1901.

[That such a Board—a National Board of

Examiners—would be useful, if properly offered and conducted, there can be no doubt. But too great centralization of power is dangerous—for instance, the Schley trial. All people are not Deweys.—*Editors.*]

Book Notices.

Progressive Medicine. *A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical Sciences.* Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College, of Philadelphia, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to the Out-Patient Department of the Jefferson Medical College Hospital. *Volume III. September, 1901. Diseases of the Thorax and its Viscera, including the Heart, Lungs, and Blood Vessels.—Dermatology and Syphilis.—Diseases of the Nervous System—Obstetrics.* Lea Brothers & Co., Philadelphia and New York. 1901. Cloth. 8vo. Pp., 428.

The authors of the articles referred to in the title are William Ewart, M. D., F. R. C. P., Senior Physician to St. George's Hospital, and to the Belgrave Hospital for Children; Wm. S. Gottheil, M. D., Professor of Dermatology and Syphilology in the New York School of Clinical Medicine; William G. Spiller, M. D., Professor of Diseases of the Nervous System in the Philadelphia Polyclinic; Richard C. Norris, M. D., Instructor in Obstetrics in the University of Pennsylvania, Philadelphia, etc. In every respect is this *Volume* in keeping with the excellence and usefulness of those issues that have preceded this.

Editorial.

Osteopathy is Practice of Medicine in Alabama.

On December 14, 1901, Judge Samuel C. Greene, of the Criminal Court of Birmingham, Ala., rendered an important decision in a case brought before his court. The defendant claimed that osteopathy was not the practice of medicine, as no drugs are used in such practice.

Judge Greene, however, declared that osteopathy is the practice of medicine—his decision being based on the definition of the term, which is that it is "a science relating to the cure, prevention or alleviation of disease." So that any person engaging in the practice of osteopathy for fee or reward in Alabama can be forced to procure a license for practicing medicine from the Board of Medical Examiners, as others who engage in the practice of medicine in that State. How any other view can be taken of this matter we do not understand.

Not Contagious.—A pretty teacher in a country school had a profound dread of smallpox. The mother of one of her pupils was confined to bed with a mysterious disease, and she at once jumped to the conclusion that it was smallpox. She put the pupil to a rigid cross-questioning, but without obtaining information as to the nature of the illness. She then sent the child home with positive instructions to find out the nature of the disease and equally positive orders to remain at home should the malady prove to be contagious. Next morning the little girl appeared among her classmates; the teacher observing her exclaimed: "Jenny Thomson, are you here again; hasn't your mother got the smallpox?" "If you please, ma'am," said Jenny, "ma mither says it's a boy, but it's no catchin' if you're careful."—*Exchange.*

Hard on the Throat.—"Throat trouble, eh? And you are a musician? Music is often very hard on the throat. What instrument do you play?"
"The bass-drum, doctor."

New Orleans Polyclinic.

Now in session. Fifteenth year. Closes May 31, 1902.

Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work.

For further information address Dr. Isadore Dyer, Secretary, New Orleans Polyclinic. Post-office Box 797, New Orleans, La.

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Original Communications.

REPEAL THE SPECIAL LICENSE TAX— REPORT OF COMMITTEE—ESSENTIALS FOR SUCCESS.*

By J. BEVERLY DESHAZO, M. D., Ridgeway, Va.

At our last meeting at Charlottesville, after a general discussion, this Society appointed a committee on "Repealing the Special License Tax on Physicians." As chairman of this committee, I wish to report that immediately after our adjournment our committee formulated plans, appointed county and city committees, and have issued irregular instructions up to the present time how to push the work. Owing to the small appropriation—only fifty dollars—given us, we were forced to direct our efforts to the next Legislature, which meets in December. Although we have had an extra session of the Legislature and a Constitutional Convention to meet during the year, yet our organization and cash was not sufficient to success before either of these bodies. We have about 500 petitions in the hands of the county and city committees, and these are being filled by the names of voters asking for the repeal of this law. In many counties, nearly every physician is carrying a petition, and hardly any opposition is reported in any part of the State. The work is doing well in over fifty counties, but of the cities Fredericksburg and Roanoke lead their larger sisters in effective work and organization. From answers to our last instructions recently issued, if our county committees are not deceived, we have a large number of members of the next Legislature already favorable to our cause, and all necessary for our success is to continue the work. The shrewdest politicians in the State say our plans are perfect, and that we can and deserve to succeed.

There are fifteen physicians in the State op-

* Read before the Medical Society of Virginia, November 6, 1901, at Lynchburg, Va.

posed to repealing the law—a small minority, when we know there are nearly two thousand anxious to secure its repeal. Many conservative ones fear that to abolish it will repeal our State medical laws. This idea is erroneous, for our best legal advisers assure us that to repeal the special taxes does not effect our medical laws in the least. As positive proof of this, you find medical laws in force in nearly every State in the Union; yet, outside of our State, North Carolina and Georgia, not one imposes a special tax on the profession. Remember, that our tax laws are separate and distinct, and that our medical laws are not contingent upon the payment of any taxes whatever.

For an easy victory, two essentials are necessary for our committee. If these are given, we can overwhelm every opposition. One is the co-operation of the medical profession; the other is an appropriation of cash.

CO-OPERATION.

It was by co-operation that our medical laws were written on the statutes of Virginia. It was, as stated at our last meeting, by co-operation that the physicians swept special license tax laws from Alabama and Mississippi. It is useless to argue the importance of co-operation, for all history is its handiwork. From the construction of the rudest habitation to the building of the Pyramids, in the material world; from the election of a constable to that of a president of a nation, in the political world; and in the history of battles, from Marathon to Waterloo, it was co-operation and united effort that proved successful in the great theatre of life.

WHY CASH IS NEEDED.

The other essential to our success is an appropriation. It takes nearly twenty dollars for stationery, clerical work and postage to issue one circular of instructions to the sub-committees in the State. When our bill is pending, circulars should be issued every week to be effective. Besides, a general headquarters should

be maintained during this time at Richmond, with such a force as is usual in such offices, to present the facts before the legislative committee, and if need be, to the entire legislative assembly.

If the Society has not the means to give the required amount, a private subscription should be raised. If each physician would give an amount equal to one year's taxes, we would have about fifty thousand dollars—more than enough to pass any law; or, if each would give only five dollars, we would have a sufficient sum to get relief without the least doubt of it. From a financial standpoint, would it not be good policy to give this amount for five years, rather than to carry this unjust burden till time shall be no more? With every argument for our relief, with an appeal from our Society, with hundreds of letters to our legislators, and thousands of petitioners in our behalf, still, unless we have the finances to pay the legitimate expenses of the effort, we cannot hope to succeed; but, with this collection of influence properly directed, and sufficient cash, we will march to certain victory.

HOW TO WORK.

What is the best way to work? It is to carry out the instructions sent out by the State committee. These are mapped out along political lines. Why? Because not a law is made or repealed except by politicians. It is our duty to study these important individuals, and conform to their ways, and use on them all our private and political influence. If each physician will do this at the proper time, his work will count more than years of moralizing in our medical societies on the injustice of the law.

We must fortify our friends in the Legislature with letters and petitions. They may be personally favorable to our measure, but without these, many will be afraid to help us; but with a sentiment in our favor written in the form of letters and petitions, their political future will not be endangered, and they will be hearty in their co-operation. There is work on this line for all of us, and from the standpoint of practical politics it is imperative. We must work these echoes of public opinion, for they are the effective weapons to be used in our fight for the repeal of the law.

OUR POLITICAL POWER.

There is no class of citizens that wield a greater political influence than physicians. Politicians realize this, and wonder at our indifference. We have never yet failed to secure de-

sired legislation. The great trouble is to bring the profession to the asking point. Erroneous education has taught the false doctrine of neglecting self, when every sense of duty and justice bids us to arouse from this position of supine toleration, and ask for our rights, and no power on earth can defeat us.

Must the profession go into politics? By all means no; but we must learn to use tact in dealing with politicians. Create a wave of public opinion that this license tax law is unjust, an outrage; then watch the politicians. No flower that blushes to the morning skies is more sensitive to winter's chilling frost than the average politician to public opinion. We can effect this by the quiet home missionary work we have been doing. If we will continue it, soon we will have one hundred thousand voters recorded on our side. If, in addition, each physician obtains five letters from friends of his to their future legislators, we will have a leverage on the next Legislature that will sway a power unequalled in the politics of Virginia.

Last year the physicians of Iowa combined against a hostile politician and defeated his nomination to Congress. One of the leading editors of the State, in his editorial comment, truthfully said: "The friends of the general practitioner are numbered by the hundreds, yes, by thousands, and that same influence can be exerted for other things that he exerts in his every-day life. There is no class of men that have as many friends and acquaintances hanging on their words and opinions as the physicians; it only remains for him to use this influence with his members in the Legislature to bring about a better class of legislation."

NO MEDICAL TRUST.

A "medical trust" is not contemplated, but when we realize there is to-day one physician to every six hundred inhabitants, and thousands of others are being graduated yearly; and behind all these, the myriads of Osteopaths and Christian Scientists are marching; when we see every drug and every instrument we use hedged in by a trust; when we see our very bread given us by the biscuit trust; our clothing by the clothing trust; our shoes, by the leather trust; and, when life's labors are over, we must sleep through the long silent night in a casket from the coffin trust, has not the time arrived when the inflexible law of necessity will cause the physicians of Virginia to think of their real situation, and throw off at least this iniquitous special tax law?

TAXES WE PAY.

Across the line in North Carolina, great mills and factories are building, but few comparatively here in Virginia. Capitalists say our taxes are too high. A Constitutional Convention now labors to reduce State taxation. The watchword of the hour is, "Reduce taxation." From one boundary of the State to the other, the cry is reduce our State taxes. The great public groans under this tax burden; but if others groan, the medical profession has just cause to moan, for it carries this burden too heavy for capitalists, and in addition the special license tax, and on top of it, an income tax, if there is the income, and on top of it all, these slaves of the State give half of their professional services without any reward whatever outside of the great heavens above.

OTHERS PROTECT THEIR INTERESTS.

How do other classes of citizens protect themselves? Not many months ago, the wires flashed the news that Congress was about to levy a high internal revenue tax. Every congressman whose constituents were effected spread the alarm, and in a few hours committees, letters and lobbyists were hurried to Washington with such effect that soon the proposed measure was satisfactorily adjusted.

A few years ago the supervisors in several counties imposed a double tax on merchants' capital invested, similar to the taxes we pay. Every merchant in those counties, without any solicitation, went down into his pocket-book, the best legal talent in the State was obtained, and such force was brought to bear that soon the law was heard of no more. It has been frequently stated, and never denied, that one of our great railroads pays a lobbyist \$10,000 a year and expenses to watch the Legislature of Virginia, and there protect its interests.

Let the proposition be made to add to the taxes of any of the great corporations; what is the result? The political air around the Capitol will hum with the injustice of the measure. Day, night, and Sunday their agents and attorneys will work till the measure is consigned to obscurity. Can we not profit by the successful methods employed by others?

EXTRA FAVORS.

One prominent physician says we ought to pay extra taxes because we are exempt from jury duty. So are millers, soldiers, sailors, paupers, preachers and postmasters exempt from the same; yet, none of these pay extra taxes, but

many of them are rewarded with liberal pensions. Another doctor writes we should not ask the repeal because the State needs the money to maintain our schools and public charities. So do we need it to educate our children and keep up our private charities. Where does charity begin?

There is no charity in our giving extra to the dear old State of Virginia.

Our State debt has been settled. The resources of her forests, soil, mines and sea are unbounded. Scores of articles of wealth now go untaxed. It is high time this burden should be distributed on those able to bear it. The State Auditor reports for last year a million dollars more taxes collected than were collected ten years ago. In recent years, the State levy has been reduced from 50 to 40 cents on the hundred dollars' worth of property; yet the special license tax has not been reduced, but goes higher and higher on the medical profession.

We ask no exemption from regular taxes, but what we will have is a just and equal distribution of taxes, according to the great principle of equal rights to all, once, not twice; on what we have, not on possibilities, nor what we can be made to pay.

COMPARISON OF TAXATION.

A conservative estimate of our Treasurer gives our license tax, State and municipal, at \$50,000. If we pay as much on property, we give annually in taxes \$100,000. Compare this with the amount paid by our great bank and railroad corporations. Here is the Auditor's report, whose figures will astound you: The railroads paid \$250,000 last year. We paid nearly half as much as these gigantic corporations, with their millions of dollars' worth of valuable property; yet one of their trains of cars is worth more than all the doctors in nearly any county in Virginia. The banks paid less than \$50,000—not half the physicians paid. How many of you have money in bank? Still they pile up undivided profits, declare handsome dividends, and do you wonder at it? Where are your dividends? These corporations grow richer and richer as time rolls on, and build to themselves vast monuments of silver and gold with their great yearly dividends; yet the doctors of Virginia, while paying one-third as much taxes as both combined, declare not 10 per cent., frequently not 1 per cent., and when their untiring work is over, many sleep in graves unmarked save by the emblems of love and poverty.

OUR CONTRIBUTION TO THE STATE.

In addition to our direct taxes, consider what we give indirectly to the State. The Census Bureau for 1900 says that the average age at death was four years more than in 1890—all due to the effect of advances made in medical science and sanitation. This means four years more of taxes from the average tax-payer, a bountiful contribution to our State treasury. Again, if the average income of physicians is one thousand dollars, and we collect half of our labors, and there are two thousand doctors, here is two million dollars more received by the citizens of Virginia. Though this may be obtained by fraud or loving charity, yet the State gets it all the same from the medical profession of this great Commonwealth.

When we think of the hundred thousand dollars direct taxes, and the hundreds of thousands we enable others to pay, and the two millions of dollars of hard work annually contributed to the people of Virginia, has not the day arrived when we should plead for our rights in the sacred halls of justice till this special license tax law shall be banished from our State forever?

OUR POSITION.

As citizens, we are imposed upon more than any other class that labor for suffering humanity in all Christian civilization. Call the roll of States, and from Maine to Mexico only three—North Carolina, Georgia, and Virginia—impose a special tax on the profession; and think of it, the highest tax borne by either is carried by the doctors here in Virginia. Call the roll of nations, and only in France and America, the great bulwarks of human liberty, is the profession pressed down by the galling yoke of special taxation.

Who is responsible for this? The physicians themselves. They rush madly through life, saving others from pain and woe, forgetting their duty to themselves and their posterity, surrounded by a great halo of imaginary glory, and finally die in wretched poverty. Look at the daily papers; hardly a day passes without recording a union or combination of some class of citizens; yet the doctors of Virginia have stood still, pleaded guilty to this imposition, and carried this extra burden for nearly a hundred years.

The work of our relief has already begun; the inevitable law of necessity bids us to action; the political influence and every resource for successful legislation is at our command; the pro-

fession is being aroused, and only one combined effort is needed for its completion. The examples of other States beckon us on to victory. Every sense of right, every principle of justice appeals to us to co-operate in this work; the hour has been delayed too long already; slowly this tax monster has developed and wound its coils about us till patience is no longer virtue—mercy is dead. On every hand we are jostled from the pathways of life by the great multitude in the mad rush for sordid gain. The symbols of Shylock revolt the senses. Even ministers rant and vend their holy creeds in the gospel market places; and financiers reap rich harvests from the bounties of the world, and heartlessly sweep crumbs from our palid lips of want, and grow drunk with joy, while grim poverty saps pleasure from our brains, and binds us like chains of slavery.

Can we not be aroused up to our duty to ourselves and the inherent rights of our profession, and with one grand united effort throw off this unjust burden of class legislation, and thus show to the world that we are worthy sons of Virginia, and that great principle of equal rights to all, consecrated to us by the sacred blood of our fathers, shall not perish, but shall be honored and protected by our profession forever?

DISCUSSION.

DR. WM. S. GORDON, *Richmond, Va.*: Dr. Deshazo's report brings before us a question which I think is a most important one for us to consider. It is not a mere mercenary question; we don't want to ask for this repeal simply because some of our sister States relieve their physicians of this tax; but it is simply a question of the dignity and honor of our profession, and of giving to us what we merit. By relieving us of this unjust burden, the State not only gives us what we merit, but indirectly it will prove a blessing to a large class of the unfortunate ones that come under her care. To illustrate what I mean: Some years ago, being physician to the Hustings Court and the city jail of Richmond, I was called upon to sit on a commission of lunacy under the old law. When I took my place on this commission I found that I had been called upon to undertake the most responsible case that I had ever had, for upon my testimony to a large degree depended the verdict of the court. This gentleman who was there charged with insanity had one of the ablest lawyers in the State to defend him, and I have never been confronted with such a task as I had

in the squabble between that lawyer and myself for one whole afternoon. I was paid \$2.50 for my services. The law had me at its mercy, and I was forced to be there as physician to the court, and I had to serve. You are liable to be called upon to ride five, ten, fifteen, possibly twenty miles to serve on a commission of lunacy. You are paid \$2.50! You have an affidavit to file, and you pay a portion of that \$2.50 for the fee in connection with the filing of the affidavit. The outcome of this is that the insane people of the State are suffering from the want of care. The good doctors refuse to serve, and in consequence other doctors take the case and give verdicts very much "against the peace and dignity of the Commonwealth," as the lawyers would say. It behooves us to take a broad and liberal view of this matter. This question is simply the entrance wedge to a very broad question. It is but the stepping-stone leading toward the revision of many of the existing laws that touch our profession. A short while ago I talked with a prominent lawyer on this question. This gentleman said: "You doctors are not the only people who do the State a service. Lawyers do a great deal of charity work;" and he went on to show me that they, too, do charity work for the State, which I had not known before. "If you doctors are unanimous in the desire to carry out this measure to abolish the extra tax, we lawyers will help you." You all know that you can be summoned some distance away from home, and paid only a nominal fee as a witness, and unless you notify the clerk of the court previously, you must pay the mileage. This is not a mercenary question at all, but, as this lawyer remarked to me, "the whole question of taxing anybody for trying to make a living is wrong from the start." Nobody ought to be taxed for trying to make a living, oftentimes when he is hard put to it to get bread to put in his mouth. He further said: "You will never get it done in the cities and towns." I have had some experience along this line. Our Society in Richmond prepared a pretty formidable report, in which we showed the city how much charity work we did for the city. We carried this before the Council, and they absolutely refused to consider it. Now, this lawyer remarked to me: "If you doctors will take hold of this matter and will act in unison, then this thing is done. You will have no trouble in carrying it before the Legislature, and the thing will be done. It isn't a mere matter of dollars and cents, but one of justice." The old law required one magistrate and two

physicians—three if two disagreed—to act on a commission of lunacy. The two physicians were paid \$2.50 each, and the law doesn't state whether the third physician, if he is called in, gets anything at all! (Gavel.) I hope you will take it up.

DR. G. W. DRAKE, *Hollins, Va.*: I wish I could get stirred up on this question once, and all I lack to inspire me is the Legislature of Virginia before me. I am not speaking to the right crowd. Privilege tax upon doctors! "Privilege" to do what? What "privilege" are we paying for? A man sends for a doctor in the middle of the night to see his wife, who is in great distress, and the Legislature says we shall pay for the "privilege" of going to see her! A train runs into a man's buggy and smashes it to splinters. A doctor is sent for in all haste to attend the poor mangled man, and the Legislature says we must pay for the "privilege"! The Legislature says we must pay for the instruments we use in the cases referred to, for the apparatus we have in our offices, and for the saddle-bags we swing over our horses, and, in fact, everything we use. Now, gentlemen, it is not the mercenary side of the question that appeals to me, but it is the unjustness and the unreasonableness of the thing. It seems to me that the Legislature ought to blush with shame when they propose such things. "A privilege tax!" Privilege of caring for the sick, of sitting on boards of health to prevent the spread of epidemics which break out in communities, for the privilege of sitting on commissions of lunacy—for these "privileges" we are required to pay a special privilege tax. It isn't a mercenary consideration, it's the principle that's wrong. In order that we may be prepared to execute this work for which we are to pay a privilege tax, institutions are charged by the several States, our State especially, and a man has to go to college for four years to prepare himself for this work; and after he has thus prepared himself for this work, he must appear before the Medical Examining Board—and a wise provision is this. Then after all this service, we are required to pay a special privilege tax to practice. Now, if we did anything, if we advertised anything to sell, if we advertised ourselves as "pill-rollers," or offered our services in any way for money, the case might be different. But we sit quietly in our offices, and we never go seeking patronage. It is only when we are sent for that we go; and for this we are required to pay a

special privilege tax. "Equal rights to all and special favors to none." Why should we be required to pay a special tax when Osteopaths go through this State paying nothing? My face burns with shame when I think of the injustice of this "privilege tax" upon doctors! (Gavel.)

DR. J. H. NEFF, *Harrisonburg, Va.*: I didn't expect to say anything on this question, but the gentleman who has just taken his seat gave me a little inspiration. My opinion on this subject is well known. I know that I don't agree with the majority of the members of this Society. But I have heard ministers, legislators, and everybody abused by the speakers who have preceded me. "You can buy the Legislature for less than fifty thousand dollars!" It is a "privilege" that we are allowed! We don't pay the tax for the privilege of working, but it is because we live under this government, and we who have its protection should bear our part in defraying its expenses. But I say that there is something in the privilege of being a physician, and if you don't consider it a privilege, you are not a physician in the true sense of the word. To follow in the steps of Him who went about administering to the sick and suffering is a privilege. I heard a little child tell his father, who had administered the knife and had given a man relief from suffering and had received that man's thanks, and the little child said: "Father, when I am a man, I want to be a doctor!" That's an inspiration; that's a privilege, and one that we should be willing to pay for.

DR. STUART MCGUIRE, *Richmond, Va.*: You have heard this question discussed from both standpoints. You have heard the sentiments and aspersions of both sides. I have neither the desire nor the oratorical ability necessary to discuss this question in any other than a purely business way. I think the tax is imposed upon us for the privilege of charging for our services, and is used for the protection of the lives and property of the physicians. But if other remunerative professions are not to pay this tax, then we should not be made to do so; but if, on the other hand, they are to be taxed, then we should be taxed. I don't consider preachers and teachers in the same class of remunerative professions. We should compare classes which receive similar pay, such as lawyers, engineers, architects, etc. Are these taxed? If so, we should be; if they are not, then it is unjust to tax us. I would like to ask Dr. Deshazo the status of lawyers, engineers and architects before the law?

DR. HUGH T. NELSON, *Charlottesville, Va.*: At the last session of the Medical Society of Virginia, if you remember, I raised my voice in a feeble, though possibly a loud way, against the proposition of carrying this request to the Legislature as from the Medical Society of Virginia, asking the Legislature not to tax the physicians of this State. I want to express again my disapproval of any such action on our part. I simply reiterate the opinions I expressed then. In the first place, the taxes that the Legislature can relieve us of are not the corporation taxes, which are the burdensome part of the tax. The State places upon the country practitioner a tax ranging from \$10 to \$20. In the towns the tax is just whatever rate they choose. That part the Legislature can't rid us of. Though our petition to the Legislature be successful, it will not relieve us of the corporation tax of the town or city in which we reside, but only that part which is imposed by the State of Virginia. In the town in which I reside, \$25 is the tax, and that the Legislature can't take away. The Legislature can't take away the larger portion of the levy, that which the town imposes. If we expect to maintain our status as a body politic, if we expect our charter to remain supreme, I want to know by what right we can go before the Legislature and ask them to abrogate our taxes? We have got no right to do it. We go to ask them to enact laws for our protection—to make laws against quack doctors. The State of Virginia says that men of this kind are put under a great many restrictions; but they don't charge for prescriptions, and should not be required to pay a special privilege tax. The Legislature has been extremely liberal to us. Now, gentlemen, I want to ask you, the members of the Medical Society of Virginia, for what purpose did you enter upon the practice of medicine? Did you come into it simply to carry out a charitable purpose? If the majority of the members of this Society will give me their word that this was their purpose, then I will cheerfully sign a petition asking the Legislature to abrogate this tax and the corporations to relieve us of their taxes. But I don't believe that any one within the sound of my voice—not one of you—came into the profession for any other purpose than to make an honorable living. By what right can we ask this, when we ask the government to protect us? The State of Virginia is not as rich as a great many other States, and she is far less able to do without the money derived from the taxes of her physicians. If the State wants to give bounties, she has with-

in her boundaries much more worthy objects of charity. I say to the Medical Society of Virginia that those poor devils who lost their all in championing what they believed to be right in '61 (and I am one of those who still believe that we were right) are much more worthy objects of charity than her physicians; and I want to put this question: Are not the members of the Medical Society of Virginia willing to give their miserable pittance for the better support of the Confederate veterans of Virginia?

DR. L. B. EDWARDS, *Richmond, Va.*: I stand here as one willing to give the amount that this committee asks for; as one willing to do my part to get this special license tax removed. I am surprised when I hear Dr. Nelson making the remark that the State of Virginia has done so much for her physicians. She has not done one solitary thing for the Board of Medical Examiners; she has appropriated the paltry sum of \$2,500 to the Board of Health, with which small sum we are able to do scarcely anything. This question does not effect so much the older members of the profession, but it is a question which appeals forcibly to the younger men. Compare our profession with other professions, and you will see that after all we are not to be classed among the remunerative professions in contradistinction with preachers and teachers. We may charge a perfectly legitimate fee of one hundred dollars for professional services, and if we get one-half of that amount we are oftentimes to be congratulated. I am not opposed to the amount of the tax, but I am opposed to the principle of charging the medical profession an extra tax.

DR. EDWARD MCGUIRE, *Richmond, Va.*: I rise to a point of order. My point is that there is nothing before this body. I move that we proceed with the next paper, or the next order of business, whatever it is.

THE PRESIDENT ruled that the discussion of the report of this committee was in order, and, therefore, that Dr. McGuire's motion was out of order.

DR. A. P. BOWLES, *Scottsville, Va.*: I would like to say that I am standing here on the same old Jeffersonian platform, "Equal rights to all, special privileges to none!" If it is right to tax doctors, then why should not ministers be taxed for performing the marriage ceremony? If it

wasn't for the doctors, in a few years there wouldn't be anybody for the ministers to marry. I contend that the Legislature has the right, and can abrogate the tax imposed by a corporation; for the corporation gets its charter from the Legislature, and the Legislature could wipe out all corporations if it wanted to. If the Legislature repeals the special privilege tax, it can require the corporations to do so too.

DR. JESSE EWELL, *Ruckersville, Va.*: It seems that the town doctors don't mind this tax, but I assure you that the small sum of \$10 or \$20 is burdensome to the country doctor. I think we ought to have a motion on hand to appropriate so much money as may be needed, if we have it in the treasury; if not, we should raise the amount needed by private subscription. Adopt this report, and let our friends see the injustice of this tax, and they will insist upon the Legislature voting to repeal this special license tax. It is an unjust tax, and we ought to do everything we can to get rid of it.

DR. QUICK (*new Fellow*): I want to say that I have pushed the petition sent me by the general committee strenuously, and I have had only one man to refuse to sign it. He owned a piece of property which I tried to buy, and he charged me \$3,000 for it. I went to the clerk's office and found that he valued it for taxation at \$1,000. This shows what sort of man he is. Everybody in my town thinks that the doctors ought not to be taxed.

DR. STUART MCGUIRE, *Richmond, Va.*: I ask that this subject be postponed until to-morrow, when we will have more time, and give Dr. Bovee opportunity to read his paper.

THE PRESIDENT decided that it was not in order to close the discussion as long as members wanted to discuss it.

DR. E. T. BRADY, *Abingdon, Va.*: I rise to correct one statement that was made in regard to our ministers. They are not allowed to perform the marriage ceremony without paying a tax; ministers do pay a tax. If we are not willing to be taxed \$10 for the \$1,000 on our books collected as fees from our practice, then I think we value our profession very lightly; we certainly don't value it as highly as it deserves. I want also to repudiate the stigmas that have been cast upon our Legislature. They are not to be pur-

chased for \$50,000; they have been extremely partial to us, and don't deserve the aspersions that some of the speakers on this question have seen fit to cast upon them.

DR. J. B. DESHAZO, *in conclusion*: In answer to Dr. McGuire's question how do we class lawyers, engineers, architects, etc.? we would class them as individuals who are looking out for money. Doctors, on the other hand, are laborers, especially country doctors; and by every interpretation of the laws of right and equity we should be liberated from this tax. When I say \$50,000 is more than enough to secure the repeal of any law, I do not mean that with that amount we can purchase the Legislature or any part of it; but I simply mean that the influence that can be brought to bear by petitions, organizations, etc., accomplished by the expenditure of less than \$50,000, can bring about the repeal of any measure. In conclusion, we don't ask that we be excused from taxation. We wish to pay our just and proportionate share of the expenses of the government. But we wish to have an equal distribution of taxes, and to that end the committee asks you to appropriate the amount specified, and to give us your hearty co-operation.

DR. MARK W. PEYSER, *Richmond, Va.*: I wish to introduce the following resolution, and move its adoption:

"That the sum of three hundred dollars (\$300) be appropriated to defray the expenses of the Committee on Repealing the Special License Tax on Physicians."

THE PRESIDENT: We will take up this resolution the first thing in the morning, and will now proceed with the next paper.

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INTUBATION IN LARYNGEAL DIPHTHERIA, WITH SPECIAL REFERENCE TO THE INFLUENCE OF ANTITOXIN.*

By WALTER A. WELLS, M. D., Washington, D. C.,
Throat and Ear Surgeon Garfield Hospital; Demonstrator of
Laryngology Georgetown Medical College, etc.

The efficacy of antitoxin in the treatment of diphtheria has now become so firmly established in the minds of medical practitioners the world over, that to attempt to adduce further proofs of its value as a curative agent is but to perform what theologians call an act of supererogation. Never before in the history of medical progress has a remedy been offered to us whose very process of preparation has given, as in this case, ample *a priori* assurance of success, nor have we ever possessed one which has, by the agreement of all authorities, supported by the general concurrence of statistics, so well measured up to the expectations which were entertained for it.

If here and there a dissenting voice be heard, a croak from some obscure corner, it is powerless to cause alarm; we only place it in the same category with that which would cry down vaccination, overturn the germ theory, or deny the reality of rabies.

In addition to the fact that the Behring serum has reduced the mortality of diphtheria in general from 50 to 15 per cent., and of laryngeal diphtheria, or croup, including those operated on and those not, from 70 to 25 or 30 per cent. (according to statistics presented at the Twelfth International Congress at Moscow), and in addition to the fact that it has reduced the mortality of both tracheotomy and intubation, it has produced another result equally favorable and equally substantiated by statistics—namely, it has materially reduced the proportion of cases in which surgical intervention is necessary to relieve the obstructed breathing. Not over half as many cases require operation as formerly, and whereas in pre-antitoxic days 9 out of every 10 patients with outspoken laryngeal involvement would require to be tracheotomized or intubated, we can say to-day that out of 10 such cases at least 6 will escape operation.

It is evident, therefore, that the greatest value of antitoxin is in precisely those cases in which there may be question of operation—that is to say, in those in which the membrane has extended into the larynx and trachea, so as to narrow these passages and obstruct the free entrance of air.

* Read before the Medical Society of the District of Columbia, November 27, 1901.

Antitoxin is pre-eminently a membrane dissolving agent. The testimony of all clinical observers is to the effect that it brings about a dissolution of the membrane, and prevents its reformation or extension to neighboring parts. Some doubt might be plausibly raised of its actual antitoxic virtues, on the ground that paralyzes, which have always been attributed to the toxins, are as common now as they were before the introduction of the serum. This circumstance, taken in conjunction with its effect over, not only membranous exudation dependent upon Klebs-Löffler infection, but those as well of streptococic origin, or due to the pseudo-diphtheretic bacilli, might suggest the propriety of giving to Behring's serum the name of "*anti-membrane*," as being more truly descriptive of its nature and action than that of "antitoxin." But, however this may be, the important fact with which we are chiefly concerned in this paper remains, that since the introduction of the new therapy in the treatment of diphtheria, the course of the disease has become so modified, with respect to respiratory obstruction, that it is necessary to entirely rewrite the chapter on surgical intervention. How and when to operate are questions which are to be considered on different premises from those which formerly existed, and the old suit *Intubation versus Tracheotomy*, which has been ardently contested for several years, will have to be retried in the light of recent evidence.

The gain has certainly been upon the side of intubation, but tracheotomy still has its friends, and what is more important, it still has its rights, which it would be unfair to disregard in any consideration of the subject of the operative treatment of diphtheria. But the introduction of antitoxin has made necessary a readjudication of the claims of these two operations, and the best way to come to some conclusion will be to consider the objections that are raised against them by their respective opponents.

Against intubation, it has been urged:

(1) That the presence of the tube causes ulceration in the larynx or trachea.

(2) That intubation sometimes fails to give relief and the tube may even push the membrane before it, thus still further narrowing the lumen of the trachea.

(3) That the intubated patient breathes over surfaces covered with diseased exudation (which is not the case with tracheotomy).

(4) That feeding is rendered difficult by the presence of the tube in the throat.

(5) That membranes or secretions are less effectually expelled.

(6) That a severe irritating cough is sometimes induced; and

(7) That intubated cases have to be carefully watched, because (a) the larynx may be suddenly obstructed by membrane or secretions; (b) because the tube may be coughed up at any moment; or (c) because asphyxia may unexpectedly recur after extraction of the tube.

Let us review these complaints against intubation a little in detail:

1. The first objection—viz., that the tube causes ulceration, is one which, before antitoxin days, was proved by post-mortem examinations to have been well founded.

But, then, it will be remembered that it was customary to let the tube remain four or five days, or even longer, in the larynx, whereas at the present time the tube can generally be withdrawn at the end of forty-eight hours, occasionally at the end of twenty-four, and rarely needs to be retained longer than the third day.

It was formerly the custom of intubators also, before they had become thoroughly familiar with its technique, and were doubtful of their skill to remove the tube, to leave the string in place. There are few American operators, I believe, to-day who have this habit, which is a decided gain—since, no doubt, the presence of the string was often a factor which contributed somewhat to laryngeal ulceration.

It is possible that the more general use of the short tube of Bayeux, which in France is almost universally substituted for the O'Dwyer tube, would even further lessen the danger of ulceration. In this tube, the subventricular portion of the O'Dwyer tube is omitted, and it is so shaped that it can be expressed by the finger, and does away with the necessity of an extractor.

Ranchfuss, of St. Petersburg, who has had very extensive experience with intubation, has adopted this form of tube, and recommends it because, as he claims—firstly, secretions have less road to travel, and can thus be more easily expelled; and secondly, ulceration will less readily recur, inasmuch as the trachea, which is more sensitive and liable to ulceration than the larynx, is not subjected to pressure.

I have had no personal experience with this form of instrument, and know of no American operator who uses it, but I mention it because it is apropos in this connection, and I think, from the reports made of it, worthy of investigation.

2. The objection to intubation that it some-

times fails, ought not exactly to be considered as an objection, but rather as a limitation of its usefulness. Authors claim that the membrane may be pushed before the tube and obstruct the larynx; and never to have encountered such a case is no excuse for denying that the occurrence is possible.

I have at least had a case in which the dyspnea was not relieved, and in which I was ultimately led to perform a tracheotomy, with, unfortunately, a fatal result.

I do not think, however, O'Dwyer's dictum that, in every case in which intubation fails, tracheotomy will be likewise useless, is true. I think some cases can be, and are, saved after fruitless attempts at intubation, and I think that the operator should always provide himself with tracheotomy instruments to be used in such an emergency. But to object to tracheotomy because it is not applicable without exception is not logical. One might as well object to the operation of lithotripsy because it may have to be followed by lithocystotomy, or protest against the employment of forceps operation or symphyseotomy or podalic version in cases of difficult labor, because they have, at times, proved unsuccessful and embryotomy has become necessary after all.

Intubation and tracheotomy are not rivals in the proper sense, but intubation is rather to be regarded as being within the circle of tracheotomy, and it may be added, occupying by a great deal the larger part of the ground.

3. The objection to intubation, that the patient must breathe over surface covered with diseased membrane, is too trivial to require much discussion. It is what all patients do when no operation whatever has been performed, and it is incomparably more favorable than respiration through an artificial opening in the trachea, of air necessarily laden with germs, dust and other deleterious constituents.

4. The feeding of an intubated child occasionally gives rise to some inconvenience, but it is seldom absolutely impossible. In a short while the patient gets accustomed to the tube in the throat, and, at least, with a little care as to the manner of feeding, can be gotten to swallow sufficiently well to keep nourished.

5 and 6. Objections as regards the cough or expulsion of secretions, are not of any great importance, except they reach such degree as to be included in the objection which follows—viz.:

7. That the patients who are intubated have to be carefully watched. The dangers which

exist of a child coughing up the tube, or of the tube becoming plugged with secretions, or of asphyxia following extubation, are no doubt real dangers and constitute the most serious disadvantages of intubation. Though they occur but rarely at the present day, by virtue of the action of antitoxin, nevertheless the knowledge of the possibility of their occurrence should keep us ever on our guard to prevent disastrous results.

Very often when the patient coughs up the tube, it is an evidence that it is no longer needed, but not always so. The following case illustrates, so far as cough is concerned, about as unfavorable condition for intubation as can be imagined, yet the ultimate outcome was successful.

Case.—N. S., girl, aged about 8 years, began November 8, 1900, to be hoarse. Her brother and sister had just died of pertussis, and the patient herself was but recovering from an attack. Dr. Behrend saw the child at 12 o'clock Sunday, November 9th, when already symptoms of laryngeal stenosis were manifesting themselves. At 3 o'clock 3,000 units of antitoxin were given. There was naturally some doubt as to the availability to intubation on account of the paroxysmal cough; nevertheless by 8 o'clock the difficulty of breathing became so marked, accompanied by thoracic retraction, that delay was no longer possible. The tube was introduced, and gave satisfactory relief to the distressed breathing. The tube remained in place until Monday, November 10th, 6 o'clock, when it was coughed out. Dr. Behrend and myself arrived at the patient's home by 7:30 o'clock, and we found the dyspnea so extreme as to demand reintroduction of the tube. The dyspnea was again relieved and so remained until the tube was finally removed, Thursday, December 13th, the fourth day after first introduction. Even then there was a slight embarrassment in the respiration, but it gradually became better and disappeared.

As to the stoppage of the tube from exudation, I believe that can hardly occur with such suddenness as to cause asphyxia before the physician can be summoned. The cough is usually sufficient to keep the tube clear, but if there be signs of decreasing aëration of the lungs, it is the part of safety to remove the tube, and, if need be, clean it before reintroducing. Reference here may again be made to the short tube of Bayeux, which, it is said, can be expressed from the larynx by pressure of the fingers on the outside, in case of emergency of this kind.

The recurrence of dyspnea immediately or shortly after withdrawal of the tube is an accident, which has occurred in the practice of everyone who has had any experience with these cases. Last winter, in my service at the diphtheria ward at the Garfield Hospital, I had an experience of this kind myself, which made an indelible impression upon me of the commanding necessity of proceeding with caution in regard to extubation. Unfortunately I have no notes of the case, but I remember that the patient was a rather anemic girl of ten or twelve years of age, who was brought to the hospital late in the stage of the disease.

A large dose of autotoxin was given, and as the dyspnea, cyanosis and retraction at once reached an extreme degree, intubation was done without delay. I remember that the fauces were covered with an extensive ugly, dirty, grayish exudate, and that the case was regarded as a grave one. I withdrew the tube on the third day, but discovering that the dyspneic symptoms and retraction at once set in, I reintroduced the tube. On the day following the tube was removed with the same result, perhaps not quite so pronounced, and therefore was again replaced. On the next day, now the fifth day since its first introduction, I went again to the hospital, with plenty of confidence that this would be the final extubation. As no dyspnea manifested itself in the perhaps fifteen or twenty minutes that I was there succeeding the extraction of the tube, I left the hospital for home. Hardly an hour afterwards the telephone rang, and the hospital interne in charge at that time was at the other end. He said, somewhat excitedly, "That case is choking to death; I don't believe you can get here in time to save it."

Of course I went in all haste, and, on arriving, found the little patient in a state of collapse, deeply cyanosed and now almost completely apneic. In fact, before I was ready to introduce the tube the breathing ceased. It seemed useless to go ahead, but nevertheless I quickly put the tube in the larynx and began artificial respiration. To my great delight, respiratory movement was re-established, gradually improved and finally became perfect. A couple of days later the tube was again removed, and never had to be reintroduced. The child made a good recovery.

The causes of asphyxia thus coming on, when extubation is done at the apparent end of the acute stage of the disease, has been variously as-

signed by different authors. Is it due to a reformation of the membrane in the larynx, or to paralysis of the abductor of the vocal cords (as claimed by Fuchs), or to a spasm of the abductors (as held by Variot and others), or as O'Dwyer thought, to a suddenly occurring oedema? A matter of so great practical significance ought to be of scientific interest, but this is scarcely the place to enter into a discussion of it, and even if it were, I could not hope to decide it. This much, however, may be said: In some cases, at least, it cannot be the presence of the membrane which causes these attacks of suffocation late in the stage of diphtheria, because here and there the post-mortem examination in such a case has failed to detect even a trace of membrane in the larynx or trachea.

There is the case, for instance, reported by Ausset (*Gaz. Hebdom. de Med.*, Paris, 1898, n. s., III, 1312) of a child, in which he was obliged to keep the tube in the larynx 132 hours, because asphyxia followed every attempt at removal. The patient coughed up the tube, and death occurred from asphyxia before it could be reintroduced.

At the autopsy it was found that both larynx and trachea, which was opened to the bifurcation of the bronchi, were entirely free of membrane; but there was necrotic ulceration of the cricoid cartilage, at the point where the tube rested; and this, the author thought, caused spasm of the larynx, which explained the suffocation.

Likewise instructive is the case of Mislav (*Soc. Anat. Paris*, February 15, 1895, Reference in *Jour. of Surgery*, London, 1895, p. 424) of a child with croup, in which the tube had to be replaced five times on account of recurrence of dyspnea, and in which finally tracheotomy had to be done. The patient recovered from the attack, but died five months later, and there was found at the post-mortem, beside ulceration of the trachea, grave disease on the part of the lungs. There was pulmonary tuberculosis, accompanied with considerable bronchial adenopathy, which involved compression of the recurrent nerve. In this case the latter condition would better explain the laryngeal spasm than the ulcer, which was also present.

Such are the dangers, the drawbacks, and the disadvantages which attach to the operation of intubation. Let us see now how it stands with tracheotomy, which in some localities is even today performed to the total exclusion of O'Dwyer's operation.

In the first place, tracheotomy cannot be so quickly done as intubation. It may be, and sometimes is, done in haste, but the dangers of the operation are thereby certainly heightened, as you cannot provide antiseptic precautions, and must neglect control of hemorrhage.

If you give an anesthetic, you will require at least two assistants, for it is extremely important to have a good position of the neck, and that precision be attained in making the incision.

Also a very great disadvantage of tracheotomy, as compared with intubation, is that, for the former, a good light is required, a condition that often cannot be obtained, as the operation has to be performed in all sorts of homes and at any time, day or night.

Certain untoward accidents are regarded as objections to intubation, as though none occurred in tracheotomy. If the intubation tube sometimes pushed the membrane ahead of it, stopping up the trachea, it might be mentioned that it may, and sometimes has, happened that, in the performance of a tracheotomy, the tube, instead of entering the trachea, was pushed between it and the membrane; therefore, of course, falling short of its purpose. It may also be recalled that certain very unpleasant complications of the operation may occur, such as interstitial emphysema, adhesions, or a fistulous opening after removal of canula.

A decided objection to tracheotomy, and one that must not a little lessen the patient's chances of recovery, is the fact that an artificial manner of respiration has to be established. The air not being carried through the natural passages, in which this is normally warmed, moistened and freed of dust, germs, etc., an attempt has to be made to artificially bring about the same conditions. The warming and moistening of the air can be, in a measure, accomplished, but I think many germs and impurities present in the atmosphere will surely find their way to the lungs. The frequency of broncho-pneumonia in these cases must be sufficient proof of the deleterious influence of breathing through a tracheal opening.

Finally against tracheotomy, it has to be urged that it is a cutting operation, a fact that when contrasted with intubation, must be regarded as a serious objection, since to all the dangers of the disease itself are added those incident to a capital surgical operation.

As to statistics, I shall not dwell upon them, because I believe they have little value in a comparison between these two operations. My rea-

sons are that no two authors have based their figures upon, in all respects, identical premises. Different standards of diagnosis exist, some accepting only a bacteriological test, while others only a clinical, and others still a combination of the two. Some consider no cases diphtheria where a membrane cannot be found, while there are those who are satisfied to consider as such every case of croup. But the greatest factor which vitiates nearly all statistical efforts in this direction is the circumstance that in some cases they are based upon early operations, and in others upon an operation done late in the stage of the asphyxiation.

The mortality from tracheotomy at the present day is high in comparison with intubation, because it is generally performed only in the most desperate cases, and in cases in which intubation has failed.

Even then, if we had agreement upon other points, statistics would be of no value, unless the percentage of mortality or recovery be estimated from the total number of cases of diphtheria, not from the number of operations.

This I might illustrate by an example taken from Variot's excellent work "*La Diphtherie et la Serumtherapie*," in which the author fully records his experience on this subject at the Trousseau Children's Hospital at Paris during the years 1895 and 1896.

In the year 1895 Variot had 256 intubations, with 121 deaths, or a mortality of 47.26 per cent.; in the year 1896 he had 313, with 116 deaths, or a mortality of but 36 per cent.; that is apparently a reduction of 11 per cent. in 1896 over that of 1895. But actually the proportion of deaths to the whole number of cases was the same, 121 deaths to 1,203 cases in 1895, or 116 deaths to 1,087 patients in 1896, being approximately 10 per cent. for each year.

The disparity in the proportion of mortality of the operation itself for the two years was due to the fact that, in 1895, steam inhalations were used, and every precaution and care taken to avoid intubating as much as possible, while in 1896 the steam inhalations were omitted, and a less vigorous standard was maintained for the indications to operate.

The result was that the number of interventions was increased just fourteen per cent., at the same time that the mortality was lowered. I lay stress upon these figures, first, because they show the necessity of estimating mortality in relation to the whole number of cases, and not to the number of operations, and for the not less

important reason that it demonstrates that no advantage is gained by postponing the operation.

It was for neither of these two purposes that these facts were cited by Variot himself, but only because he desired to prove that by the judicious use of steam inhalations he could reduce the number of interventions. But what great advantage, I say, is gained in reducing the number of interventions, when, after all, the number of deaths from the operation, estimated as they should be to the whole number of cases, remained just the same, as when the interventions are proportionately more numerous?

This brings us face to face with the proposition upon which I wish to insist—namely, that intubation should be performed early, whenever the indications for the operation are present. You do not thereby in the least injure the patient's chance of recovery; and very often, by an early operation, you will forestall an unexpected exacerbation of the asphyxia, which might have led to a fatal result.

The occurrence of dyspnea, as all who have had any experience with diphtheria will appreciate, is an exceedingly uncertain factor; it may be very violent and in a short time completely subside, and, on the other hand, it may appear very mild, but quickly and without warning assume an exceedingly grave aspect. In the hospital, where close guard can be kept and an operator be within a minute's call, it is allowable to temporize; but in private practice, where such conditions do not exist, is it not safest and most expedient to put in the tube as soon as well marked dyspnea, accompanied with cyanosis and retraction of even a mild degree, has asserted itself?

Intubation is in itself a harmless operation, and is followed by no ill consequences to the general health. In the October number of the *Munchener Medizinische Wochenschrift* there is an article by Pfaundler, who has followed up 173 cases of intubation and tracheotomy performed at Escherich's clinic, and who found that, although such sequelae as permanent hoarseness, cicatricial trachea, stenosis and chronic cirrhotic pneumonia were not uncommon after tracheotomy, he could trace practically no relationship between subsequent casual disturbances on the part of the respiratory organs and intubation.

We are, therefore, in general, partisans of an early application of intubation and an application, in all cases in which we are in doubt, pre-

cisely as seem to be the growing policy at the present day, in regard to the administration of antitoxin. And now that this invaluable adjunct to the treatment is in our hands, and that the course of the disease has been, as we have pointed out, so advantageously modified as to laryngeal symptoms, and especially since the duration of the croup and consequently the retention of the tube has been so much shortened, the arguments for an early intervention have been proportionately strengthened.

In conclusion, then, let it be said that from a consideration of intubation in the light of the modern serum treatment, it must be admitted that the influence of this remedy has been decidedly to encourage, first, its earlier; and second, its more universal employment.

In addition to what has been said, which ought to be convincing of its superiority in general over tracheotomy, as an operation of choice and one which therefore ought, as a routine practice, to supersede it, I might mention just one other, which, though on its face may appear a little illogical, is not without the force: It is that intubation is better because it seems better. I mean by that, it is better operation for universal practice than is tracheotomy, because, not being a cutting operation, it has less terrors for the parents, relatives and friends of the suffering child, and therefore there is less difficulty in having it accepted when the need of some operation is urgent.

If the surgeon be prepared to offer but the operation of tracheotomy, many a time the little patient will die, as no doubt it often has, simply because the consent of those interested cannot be obtained.

We, as Americans, ought to feel proud that the progress of events has firmly re-established an operation that chiefly and practically, at least, is the offspring of the genius of one of our own countrymen. We do not need to forget Bouclint, who, way back in 1858, proposed a method of intubation in croup, which, owing to the violent attack of Trousseau, was condemned by the Academy of Paris, and for this reason and because of the cumbersome and imperfection of the instruments, gained no foothold in his own country.

In fact, so firmly rooted, owing to these influences, was the opposition to intubation in France, that it was slow to adopt the new and perfected operation of O'Dwyer; but since the introduction of the antitoxin treatment, largely, we may add, through the efforts of Roux, it

gradually grew in favor, until to-day there is no European country in which it is so universally practiced.

We are proud of O'Dwyer, I say, because he is an American, who has forged a necessary and important link in the chain that binds down this dread disease. But to use the words of the hero of Santiago, which prove him to be generous as well as brave, "There is glory enough to go around." Wherever intubation and diphtheria are mentioned, let these three names be grouped together in brilliant constellation, that of Bouchut, of France, who, in 1858, first proposed the operation; that of O'Dwyer, of the United States, who, in 1881, perfected it and made it practicable, and that of Behring, of Germany, whose serum has enlarged its scope, widened its usefulness, and made it more generally advantageous and successful.

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SARCOMA OF THE TESTICLE.*

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Owing to the meager literature upon this subject and the opposing views expressed by the writers, I have been tempted to present this paper without attempting to go exhaustively into the subject. I wish to place upon record data connected with four cases that I have recently seen and operated upon, with the hope that this may act as an incentive to others in reporting their experiences along the same line, and thus assist in clearing up a subject so illy understood at present.

Frequency.—Regarding the frequency of sarcoma of the testicle, exact data are almost impossible to secure. It may be said, in a general way, that, while not to be classed as a common affection, still it is exceedingly improbable that any surgeon in active private practice will go through life without being called upon to make a diagnosis in this affection. Even upon the more limited question of the relative frequency of sarcoma and carcinoma of the testicle, an exact statement cannot be made. Thus, Coley¹ has met with eight cases of sarcoma of the testicle to one of carcinoma, while Stonham² states that soft, glandular cancer is the most common

variety, but pure sarcoma, or mixed sarcoma, is sometimes met with. Gurll, quoted by Kober,³ reports out of 16,637 tumors occurring in the Vienna hospitals, from 1855 to 1878, 11,131 were carcinoma and 848 sarcoma. Of these 64 were carcinoma of the testicle and 45 were sarcoma. The cases of malignant neoplasms of the testicle coming under my personal observation have all been sarcomata.

Causes.—The etiology of neoplasms in general must still be regarded as one of the unsolved problems of medical science. In the special subject under discussion, however, while in many cases there has been no suggestion of a satisfactory explanation of the trouble, in quite a fair proportion certain factors have apparently been operative in the production of the lesion. The relation of trauma to the disease is more evident than in malignant tumors elsewhere. Rindfleisch⁴ says: "The glandular and other organs of generation are generally far more prone than other parts to exhibit a transition of simple inflammatory irritation, of abscess, operation wounds, catarrhal overgrowths (hyperplasia) into sarcomatous and ultimately into cancerous degenerations." Previous attacks of gonorrhoeal epididymitis are frequently reported. The disease is especially liable to occur in undescended testicles, the organ being in these cases subject to pressure and more exposed to injury. In the four cases coming under my personal observation, only one gave a history of traumatism. In three of these there had been repeated attacks of gonorrhoea, with epididymitis, and in two, syphilis.

Age.—The time of life at which sarcoma of the testicle is most prone to occur appears, like so many other points, to be by no means settled, but from the reports of cases, and according to the opinion of most authorities, the disease is most common between the ages of thirty-five and forty-five years. In early life the round-celled variety is by far most common, while in later years the tumor may be of the spindle-celled form. The writer's own cases occurred at the ages of twenty-four, twenty-seven, thirty-two, and fifty-two.

CLINICAL HISTORY AND GENERAL APPEARANCES.

The disease is usually unilateral, though both testicles may be involved, especially in the round-celled variety. The development of the tumor is frequently insidious at first, and, except where following directly upon an injury or an orchitis, its presence may be overlooked for a considerable time, owing to the facts that in

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the early stages there is ordinarily absence of pain, and the testicle retains its normal shape. Soon, however, the rapid increase in size, especially in the round-celled varieties, gives rise to a tumor, the presence of which can no longer be overlooked, and to a dragging sensation in the testicle, extending along the spermatic cord of the side involved. There is ordinarily no acute pain until the tunica albuginea is invaded. The general appearance of the tumor is at first simply that of an enlarged testicle, usually harder than normal, and strongly suggesting orchitis. The surface of the growth is smooth.

The rapidity of the enlargement varies according to the kind of sarcoma present, being usually exceedingly rapid in the round-celled variety, slower—at times very slow—in the spindle-celled. A fact admitted by every writer is that there seems to be in most cases no positive means of differentiating sarcoma from carcinoma, except by microscopic examination. There is early extension to the iliac and lumbar glands. The spermatic cord becomes thickened and involved, and this is a valuable diagnostic sign. Should this occur *very* early in the course of the disease, it is indicative of an inflammatory process rather than neoplasm. As the tumor enlarges, it becomes irregular in outline, and no longer offers uniform resistance on palpation. The veins of the scrotum may now become swollen, and, pressure from the enlarged glands interfering with the return circulation, edema of the lower extremities often arises. Later on, the skin over the tumor becomes adherent and involved (though somewhat later than in carcinoma), and finally gives way, causing sloughing and hemorrhages, with the formation of fungus hematodes. Cachexia is also noted as a later symptom. The disease unchecked ultimately invades the abdominal and thoracic viscera. Should recurrence take place, the disease is observed to attack the cord, the lymphatic glands of the abdomen.

Diagnosis.—The lesions with which sarcoma of the testicle is most apt to be confounded are: Carcinoma, or other neoplasms, syphilitic orchitis, tuberculosis of the testicle, hydrocele and hematocele.

Hematocele is, according to White,⁵ the condition with which sarcoma of the testicle is most likely to be confounded. In hematocele we have the history of an injury, with a tumor forming in the course of a few hours—or even minutes—or the history of an old hydrocele. Pain is an early symptom. The cord is not affected. The swelling does not enlarge continuously, and is

less irregular than sarcoma in the latter stages. Testicular sensation is not so completely lost. If the above points are not sufficient to establish a differential diagnosis, tapping will ordinarily settle the question. It must be remembered, however, that even aspiration is not without the possibility of error. In this connection may be mentioned the often-quoted case of Moullin, who “on one occasion tapped a blood cyst in the centre of a sarcoma.” Morton⁶ reports a similar case. In contrast to these cases, we have the equally puzzling class, such as reported by Horwitz,⁷ where an hematocele was complicated by an encysted omental hernia, closely resembling sarcoma.

Hydrocele, when recent, is readily recognized. Not so, however, in some of the chronic cases, where after aspiration of the fluid (which may be no more in quantity than is sometimes found associated with sarcoma), there still remains a decided tumor. This mass is composed of the thickened sac, often containing a considerable amount of fibro-cartilaginous material, is opaque, and has an uneven surface, thus presenting a group of signs so closely resembling sarcoma that only an exploratory incision will, in many instances, settle the diagnosis.

All authorities agree that only by means of the microscope can a positive differential diagnosis be made between *carcinoma* and *sarcoma* of the testicle. The following points, however, may occasionally be of value: Carcinoma scarcely ever occurs before the age of ten years, and is most frequently seen between the ages of thirty and forty-five, while sarcoma is met with in childhood and also in young adult and middle life. If the affection is bilateral, the diagnosis will be in favor of sarcoma. As a rule, the cord and serotum are earlier invaded in carcinoma than in sarcoma, and the skin becomes more quickly adherent to the growth. Practically, it is of no moment to distinguish between these two forms of neoplasm, prompt castration being equally indicated in either case.

Enchondroma is so frequently found associated with sarcoma, or prone to develop into this disease, that prompt castration is demanded. Hence a differential diagnosis is not essential.

Between *cystoma*, *cysto-sarcoma*, and *carcinoma*, the differential diagnosis is not of great practical importance, since early removal of the testicle is equally desirable in all cases.⁸

Fibroma, *myxoma* and *myoma* of the testicle are surgical rarities—less than a dozen cases being on record (White⁵).

Tuberculosis of the testicle is, according to

Coley,¹ the most difficult of all conditions to differentiate from malignant disease. This opinion is not shared by most writers. The following points will usually render the diagnosis certain: In tuberculosis of the testicle the epididymis is almost invariably primarily involved. The lesion is usually secondary to a tuberculous process of some other part, thus rendering a general physical examination exceedingly important. The seminal vesicles are nearly always involved, and this lesion can be detected by examination per rectum. The disease occurs most commonly between the ages of twenty and forty years. The tumor itself is distinctly nodular and very prone to undergo suppuration.

Syphilitic orchitis (sarcocele) at times very closely resembles malignant disease of the testicle. The history of the case is of great importance in arriving at a diagnosis. The affection is very commonly bilateral, the two sides being either simultaneously involved or consecutively. The progress of the disease is slow, and the cord and lymphatic glands are not usually involved. As a rule, there is no pain. In this respect syphilitic orchitis resembles sarcoma in its earlier stages, but in sarcoma pain appears later, while in syphilitic orchitis the sensibility of the organ is more and more lost as the disease progresses. The testicle never attains the size of malignant disease, seldom exceeding twice its normal diameter. Ricord is quoted by Bunstead and Taylor⁹ as saying: "Whenever you meet with a tumor of the testicle as large as your fist, and find that the swelling is not in a great measure due to effusion, you need not suspect syphilis." If these points are not sufficient, recourse may be had to anti-syphilitic treatment. But too much time must not be wasted in this manner. Coley does not believe in trying specific treatment for the purpose of differential diagnosis: *First*, because actual malignant disease may improve under this treatment; and, *second*, if there is no improvement, valuable time has been lost and the disease possibly progressed to a point where operation will be useless. He would prefer an incision where the diagnosis cannot be made along the above lines.

Treatment.—The diagnosis having been positively made, prompt and complete removal of the tissues involved offers the patient the only chance of relief. Where the conditions do not permit of a positive diagnosis, it is far better to err on the side of removal of the benign growth rather than to allow a malignant one to advance beyond surgical relief. A brief de-

lay for the purpose of exhibiting specific treatment is advocated by most authorities in cases presenting a syphilitic history, but the fact must not be overlooked that even malignant tumors themselves are at times temporarily benefited by anti-syphilitic treatment. The frequency of recurrence after simple castration points to the necessity of a more radical operation, as, for instance, the one recently advised by Stinson,¹⁰ who advocates the removal of: 1. The diseased testicle and its coverings; 2, the portion of the scrotum containing the diseased organ, also the raphe; 3, the spermatic cord, its vessels, etc., as high as the internal ring; 4, the inguinal glands, all fat, adhesions, etc.

Where the disease has extended to the retro-peritoneal glands, or the abdominal viscera, operation will prove futile. In this connection, however, attention must be called to the importance of the most painstaking diagnosis. Enlargement of the retro-peritoneal glands may be entirely independent of the testicular affection, and such a case might be put down as inoperable, while in reality the patient's life might be saved. Thus Duncan¹¹ reports a case where, eighteen months after operation for sarcoma of the testicle, there was "recurrence" in the retro-peritoneal glands, with the production of a tumor twice the size of a man's fist, and edema of the lower extremity. Under treatment this entirely disappeared, though the case had been regarded as hopeless, and the patient resumed his vocation as a school teacher. Had this tumor, which apparently was entirely independent of the previous trouble, been present at the time when the patient first presented himself for treatment, it is exceedingly probable that operation would have been discountenanced and the patient's life thus been sacrificed.

A brief history of the writer's four cases is hereto appended:

Case I.—White, aged 27 years. Admitted to Old Dominion Hospital January 17, 1900. Family history good. With the exception of venereal diseases, has enjoyed good health. Has had four attacks of gonorrhoea, with stricture as a sequel. Also suffered from an attack of syphilis about four years ago, for which he had received an eighteen months' course of treatment. In 1896 patient fell from a scaffold and sustained an injury to right testicle. Twelve months ago a swelling was noticed in right testicle, giving no pain until the enlargement had attained considerable size. Growth was slow at first, but enlarged rapidly later, when pain of a sharp, stabbing character was felt in the

groin. The physician attending patient, suspecting the presence of an abscess, made an incision, but failed to find pus. As a result of the incision, a fungous mass protruded, and the testicle became sore and inflamed. The inguinal glands were also involved. A protracted course of anti-syphilitic treatment, administered by his physician before he entered the hospital, produced no effect whatever upon the growth. January, 1900, the writer removed the testicle (which was as large as a small-sized cocoanut) and as much of the cord as possible. The inguinal glands were also dissected out. March 15, 1901, patient reported that there had been no recurrence. Microscopic examination showed the specimen to be a *round-celled sarcoma*.

Case II.—White, aged 32 years. First seen January 28, 1898. Family history good. Patient had always enjoyed good health. No history of injury could be elicited, but he had had gonorrhoea with epididymitis four years previously. He presented himself for treatment, stating that, some months before, a slight enlargement of right testicle was observed, which gradually increased until, at the time of examination, it had reached the size of a small orange. No pain was complained of, nor any discomfort experienced, save that resulting from the weight of the tumor. The swelling resembled so nearly a hydrocele that aspiration was resorted to, but with negative result. Castration was advised and later performed, and the specimen subjected to a microscopic examination, proved to be a *round-celled sarcoma*. In January, 1901, the patient reported that there had been no recurrence of the trouble.

Case III.—White, aged 52 years. Admitted to Old Dominion Hospital February 22, 1900. Family history good, and had himself enjoyed good health until eighteen months ago, when present trouble was first observed. A small nodule on lower end of right testicle was first noted. A dull, periodical pain was experienced as the swelling gradually increased in size. About six months ago pain became constant, being worse at night, with a continual sensation of weight upon the cord. At the time of patient's admission into hospital the growth had attained the size of a large orange, and extended up to the external abdominal ring. No history of traumatism or syphilis could be obtained. February 23, 1900, an incision was made over tumor, extending up to and opening the inguinal canal. The testicle, as much of the cord as possible, and the glands were removed. Micro-

scopic examination, *round-celled sarcoma*. Growth returned in a few months.

Case IV.—White, aged 24 years. First seen September 20, 1900. Absence of any tuberculosis or cancer in family. Has always been healthy, with the exception of venereal diseases. An attack of gonorrhoea was complicated with bilateral epididymitis. Received a protracted and thorough course of treatment for an attack of syphilis occurring four years previous. No history of injury. About four months ago right testicle began to enlarge, not painful at first, but later pain became so intense as to necessitate his going to bed. At the time of admission into the hospital the growth had reached the size of a croquet ball. September 26, 1900, castration was performed, and a hydrocele was found complicating the neoplasm. Microscopic examination, *round-celled sarcoma*. As soon as the tumor appeared his family physician prescribed anti-syphilitic treatment, without any effect upon the growth. Recurrence about eight months later in abdominal viscera, causing death.

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THE CREPITANT RALE.

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The crepitant rale is the finest of all rales, and though it is classified as *moist*, it possesses a *dry* quality. It is sometimes called "*vesicular rale*," and is also spoken of as "*crepitation*" or "*dry crepitation*."

It is a "very fine sound, or rather a series of very fine, uniform sounds, occurring in puffs," or "as a shower of fine crepitations" during the

latter part of inspiration. It is claimed by some that it is sometimes heard during expiration; but the weight of authority is against this view.

This rale resembles the sound made by "throwing salt on the fire, or by rubbing a lock of hair just above the ear between the thumb and forefinger."

It was at one time thought to be pathognomonic of pneumonia; but it is now known to occur in other diseases as well. The diseases in which it is found are:

1. Acute lobar pneumonia, first and third stages.

2. Pulmonary œdema.

3. Hemorrhagic infarction of the lung.

4. Localized atelectasis.

5. Hypostatic congestion of the lungs (base).

6. At the apex of the lungs in those who habitually under-inflate the lungs.

7. Pulmonary tuberculosis. In this disease it is generally known as "crackling" or "crackling rales" or "crackles."

There is a difference of opinion as to the manner in which the crepitant rale is produced. The vast majority of writers favors the view that it is caused by the forcible separation of the walls of the air cells, which have become agglutinated by inflammatory exudate, as in acute lobar pneumonia, or by the agitation of thin fluid in the air cells, as in pulmonary œdema, etc. The bronchioles are included along with the air cells in the production of the crepitant rale by Butler and Da Costa.

A minority still claims and insists that the crepitant rale is due entirely to pleuritic friction, the pleura being covered over in pneumonia with fibrinous exudate, or in tuberculosis studied underneath with miliary tubercles, and that the air cells have nothing to do with it.

Fine pleuritic friction sounds may certainly simulate and be mistaken for the crepitant rale, and the two sounds are sometimes so much alike that it is very difficult to distinguish the one from the other. "Indeed, it is a question whether the crepitant rale should not be defined as a fine crepitation of a dry quality produced either in the air cells or the pleura."

"The diagnosis or distinction between the two must be made by the preponderance of the associated signs and symptoms."

The *points of similarity* between the crepitant rale and fine pleuritic friction sound are:

1. The sounds made by the two are very much alike and are defined as a fine "crackling" or "crepitation."

2. Neither one is changed or affected by coughing or ever shifts its position.

3. They are both heard in the latter part of inspiration—the crepitant rale probably always, and the pleuritic friction sound generally; but the latter is sometimes heard in expiration.

The chief *points of difference* between these two sounds are:

The *crepitant rale* (1) is more strictly limited to inspiration, probably entirely so; (2) is more deeply seated and farther from the ear; (3) is more diffused, and may occur over a wider area of the chest; (4) is not affected by pressure on the chest; (5) may be heard over any portion of the chest—over the *base* generally in pneumonia and over the *apex* generally in tuberculosis.

The *fine pleuritic friction sound* (1) is not so strictly limited to inspiration, but may occur in expiration; (2) is more superficial, and gives the impression of nearness to the ear; (3) is limited to a smaller area of the chest; (4) is intensified by pressure on the chest wall; (5) is heard generally in the axilla or in the lateral portions of the chest.

RALE REDUX.

The *rale redux* is the rale that occurs in the third stage of acute lobar pneumonia, and is the same old crepitant rale that appears in the first stage before solidification; that disappears in the second stage, when the air cells become filled up and solidified, and that returns in the third stage after the solidified exudate begins to liquify and allow the air to again enter the vesicles.

The minority advocates of the pleuritic theory, mentioned above, however, claim that the "*rale redux*" is the fine pleuritic friction sound that appeared in the latter part of the first stage of pneumonia after the lung surface became coated over with fibrinous exudate, and while it still retained some movement, that disappeared in the second stage when the lung lost its movements on account of solidification, and that reappears in the third stage as soon as air begins again to enter the lung and expand it.

"CRACKLING RALES" OR "CRACKLING."

"Crackling" or "crackling rales" is "a sign closely connected with rales, and though its mechanism is undecided, it is regarded as a rale." It occurs in, and is considered as diagnostic of pulmonary tuberculosis, especially at the apex. The sound resembles very closely the

crepitant rale, and is considered as the same sound by some. The difference is chiefly in the number of sounds, location and pathology, thus:

Crackling or crackling rale consists of a few fine sounds limited to inspiration, heard commonly at the apex and due to the presence of tubercular infiltration of the air cells, or to softened tubercle in the latter, the condition of the tubercular deposit giving rise to *dry* or *moist crackling*. "Moist crackling" is a less liquid sound than the crepitant rale, as tubercle that is breaking down or softening is not very liquid.

Crepitant rale or crepitation consists of quite a number of fine sounds limited to inspiration, heard most frequently at the base, and due generally to the presence of tenacious exudate or thin fluid in the air cells.

TREATMENT OF PURPURA.*

By JOHN HERBERT CLAIBORNE, M. D., Petersburg, Va.,
Ex-President and Honorary Fellow of the Medical Society of Virginia, etc.

Purpura, like menorrhagia, dysmenorrhœa, dropsy, and some other affections, is really only a symptom of a pathological condition, and should not be considered as a disease itself, in its own entity.

It has been characterized as a dyscrasia attended by the extravasation of blood in the subcutaneous, or submucous tissues. And these extravasations may be of varied extent—sometimes punctiform, as petechiæ, or they may be larger, as of the size of a lentil—ecchymosis—or they may be larger still, according to the nature of the cause, covering more area and known as blood-blisters. In certain forms of purpura, there may be accompanying effusions of the mucous membranes, as shown by bleeding from the gums or the nose, but we propose to confine our remarks to the disease as affecting the integument.

Purpura is spoken of as *purpura arthritica*, or *purpura scorbutica*, or *purpura neonatorum*, or *purpura hamorrhagica*, or *purpura symptomatice*. This latter term is simply a begging of the question, as far as the pathology of the disease is concerned, and a liberal permission to deduce one's own conclusion, from any symptom indicating any especially marked dyscrasia. The nature of the disease, however, from

whatever cause it comes, or is accompanied by, seems to be essentially a blood dyscrasia, a condition of that fluid, rendered so tenuous by some varied, known or unknown, toxin, that it is forced by the ordinary heart pressure through the coats of the capillaries, into the subjacent tissues. The blood, therefore, must be treated, whatever the indications for specific remedies seemingly called for by specific constitutional conditions.

I have been led to the present consideration of purpura, and to bring the subject to the notice of the Fellows of this Society, by the revival of a case which I treated in 1878, and which, after twenty-five years of immunity, has again come under my care within the last few months.

This case was published in the *Virginia Medical Monthly* of 1878; but as I have no copy of that *Monthly* of that date I have resorted to my original notes taken at the time for my description of it.

This case is referred to as "purpura of twelve months' standing, cured by corrosive sublimate." It occurred in the person of a lady, thirty-four years of age, married, the mother of three children, the youngest six years old. It came on her suddenly, whilst in ordinary good health, inducing some slight malaise, but nothing especially to complain of; had continued for one year, in spite of treatment; her limbs—arms and legs—and some other portions of her body as far as the neck were covered with spots of extravasated blood in areas ranging from the size of a lentil to that of a ten-cent piece, and so numerous that she had the appearance of a spotted woman. She had lost but little flesh, and complained of little else than muscular weakness, and consequent difficulty of locomotion. On this account she was entirely unable to attend to her domestic duties. Her appetite was poor, her digestion impaired, probably from inactivity, and her bowels constipated from the same cause. Her kidneys showed no evidence of disease, and her uterine functions were normal and regular. The only distressing symptom was extreme mental depression, amounting almost to melancholy—the result, I suppose, of the obstinacy with which her case had resisted all treatment, and her consequent inability to attend to her household matters.

She had been under the care of several excellent physicians, all of whom had taken the same view of the case—viz., that it was a blood dyscrasia of some unknown origin, but calling for iron and tonics generally—a treatment which

* Prepared for Medical Society of Virginia, in session in Lynchburg, Va., November 5-7, 1901.

they had inaugurated, and whose persistence they had urged, each one of them, until a year had elapsed, and no improvement was notable.

I took a similar view of the case, as far as the necessity for changing in some way the condition of her blood was concerned; but I changed the medication, omitting the iron, and put her upon the bichloride of mercury, one-twelfth of a grain; extract of cinchona, one grain, three or four times in twenty-four hours—advising at the same time a liberal and easily digested diet.

In one week the eruption or extravasation began to fade, and at the expiration of one month had entirely disappeared, her color and strength had returned, and her general condition was so improved that she announced herself well. During the ensuing year she had two slight attacks of the same trouble, but under the same treatment promptly recovered.

In this case, undoubtedly, mercury acted as a tonic as well as alterative. I had found it to act in the same way in secondary syphilis, and Fournier calls attention to the same fact, but in the case under consideration there was no ground for belief of any specific origin.

Liegris, in his experiments in therapeutics, remarked of mercury, that "persons taking it increased their weight"; thus it acted "as some sort of stimulant to the nutritive function." And Wilbouchewitch, of Paris, by means of the hæmatometer, counted daily the red corpuscles of the blood in persons under mercurial treatment, and found them increased under the action of that drug. I was led to adopt the mercurial treatment in this instance, not upon any theoretical grounds, but from the fact that failure had followed the treatment of other physicians adopting the usual course pursued in such instances—even for twelve months.

But I was more strongly influenced, I confess, by the reason that I had been told by an old practitioner, a man of great good sense and of enlarged experience in the practice of physic, that he had succeeded several times in curing cases of purpura by administering mercury, after every other supposed rational therapeutic resource had been exhausted.

Sequel.—But the especial interest in the present case lies in the sequel. After some twenty-five years of immunity, the same lady came to me during the present year, laboring under the same malady, not so continued, but of the same obstinacy, and accompanied by the same depression of spirits. On this occasion she complained of pain in the extremities, and there

was the same muscular weakness. At this time, too, she was laboring under a much graver defect from normal health—tuberculosis; but, ignoring this, she only asked to be relieved of her old enemy. And under the same treatment, for a very short time she was content to see the purpura disappear.

And I have never seen a case of purpura, whatever the disease, or the nature of the disease giving rise to the symptoms, which did not yield to the bichloride of mercury.

The literature of the disease is meagre, and the pathology confessedly uncertain, but almost all authors agree that a course of iron and mineral tonics are indicated. Dr. George B. Wood thinks there are cases in which mercury might be of good effect, but I have never seen the treatment detailed in this paper referred to.

32 Union Street.

ADDRESS OF WELCOME TO THE SEABOARD MEDICAL ASSOCIATION OF VIRGINIA AND NORTH CAROLINA.

By LIVIUS LANKFORD, M. D., Norfolk, Va.

Mr. President, Fellows of the Seaboard Medical Society, Ladies and Gentlemen:

I have been asked by the medical men of Norfolk, Portsmouth and Berkley to welcome you. This, gentlemen, is a great pleasure and a privilege. You know you are thrice welcome to our city, houses, and cardiac chambers without any formal statement from me.

I welcome you to the best city in many respects between Baltimore and Atlanta. Our own elect lady, Elizabeth, and her lover, Mr. H. Roads, with arched bosoms, broad and deep, with arms long and Herculean, can and will protect the commerce and navies of the entire world from the raging deep. The delicious product of her waters are unsurpassed in all the world. But, Mr. President, this is not and will not satisfy the medical man. I am especially delighted to welcome you at this the first meeting of the new century.

What developments there will be in the new century, or what the harvest will be, are questions far beyond human conception. Apparently during the past twenty-five years in medicine and surgery everything has been embraced which human thought or ingenuity could possibly suggest, and there seems to remain for you young gentlemen only the task of finishing and beautifying the grand achievements of such men

as Sims, Gross, Flint, Mott, Van Buren, Barker, Sayre, and our own McGuire, all of whom are richly entitled to a long furlough, and have already answered to roll-call on the echoless shore. To commit the task of extending the lines of their noble studies will require scientific men of great depth and breadth of thought.

And now, Mr. President, I make two suggestions, which I respectfully submit for the consideration of the Fellows of this Society: First, if the medical men of the twentieth century expect to carry forward to grand and noble completion the thought and labor to which they have fallen heir, there must be higher academic education—college-bred men, if you please. Second, they must rise to the thought that there is a high and noble object in the practice of our profession for which gold is no compensation.

First. Unimportant as it may appear to youths and some parents, yet the mind must be well trained in natural and moral philosophy, ancient and modern languages, history, literature, and mathematics, which will ever come to his rescue as a reserve force in our profession. That young man who steps forward in the medical arena well *informed and self-reliant* is sure to succeed in a short time, I care not *where* he locates.

I make bold to say that educated men, college-bred men, have and will hold the reins of *leadership* in every department of human activity and progress. The universities gave birth to modern Germany. Her universities redeemed England from the most dangerous despotism. Wycliffe, "the Morning Star of the Reformation," and Luther, its heroic champion, John Milton and Roger Williams, heralds of soul-liberty, were highly educated men. Educated men inspired and moulded our national life; they wrought the yeomanry into enthusiasm and action. Of the fifty-five members of the Constitutional Convention, thirty-three were college graduates, and the eight leaders of the great debate were graduates of colleges. James Madison, the author of the Constitution, and Thomas Jefferson, the author of the Declaration of Independence, were graduates. Some so-called critics once laughed at the grapes of a picture as unnatural; but the painter was satisfied when the birds came and picked them. It is the genius of moulding the lips of the stone "Memnon" to such sensitive life that the first sunbeam of opportunity strikes them into music. This leadership of educated men, the medical profession illustrates, who, as you know, have been college-bred men, at least professionally. "Ig-

norance is the curse of the race; knowledge the wing wherewith we fly to heaven." That "foaming rhetoric" of the stump, "*Vox populi, vox die*," in London once declared against street lamps, and denounced vaccine inoculation as wanton wickedness. How general is the distrust of physicians by the uneducated and ungrateful; yet they are quiet guardians, the ceaseless helpers of all others, princes and peasants, learned and ignorant, rich and poor, young and old. And just here, gentlemen, I rejoice over the fact that the most accomplished and scientific writer of the New Testament was a medical man, "Luke, the beloved physician," who administered to the "infirmities of Paul, the aged," when that apostle was divinely prohibited from performing a miracle of healing for his own personal benefit, and so-called Christian Science receives the "black eye," and the medical profession forever is endorsed.

Again, Mr. President, I would urge that a college course climaxes and perfects the medical course; it reveals to the student more fully the ends to which his physical, intellectual, and moral powers are directed—namely, health, truth, and virtue; it gives him the true method of progressive knowledge, from the known to the unknown, from the concrete to the abstract, from the vague to the definite. The college course will expand a man's horizon, it will bring above it many stars, which will influence his destiny.

Second. Fellows, we do practice medicine for money, and money is an essential part of human society, and there have been but few men who have been enabled to do without it. Yet money with the doctor should be regarded as accidental and secondary. It should never be the principal impulse nor the controlling motive to inspire his action. Amid the struggles of human activities there should be one profession not resting upon a financial basis. That is a sorrowful picture presented often to the public gaze, when there are bickerings, alienations and mean jealousies displayed on the part of some brothers toward another part of brothers, growing from "the root of all evil." Some men are like the vulture which ever flaps its polluted wings above the precincts of putridity in their eager search for filthy lucre. But there are many of a nobler purpose and a grander aim. As the eagle spreads his pinions and soars above the murky tempest and bathes his plumage in the light above the thunder's home, so these unselfish searchers after truth rise into the light of true scientific discovery, and give, without thought of compensation, relief to the most needy sufferer

among men. Unfortunately, there are some laboratories in which there are no tests for metals except silver and gold.

The ox that grazes on the meadow that lies at the foot of the mountain, and drinks of the stream that flows from its base, cares nothing for the flowers that deck the plain or for the cliff that wreathes its brow in the lightning's flash. Some doctors, like the ox, live only to graze and drink—drink water. You would think that some doctors were troubled with an incurable attack of yellow jaundice, as there is no color that charms their eyes except the saffron hue. But let us remember that there are a few things left that are not for sale. Honor among doctors and purity among doctors' wives and daughters are not on the market. Away with that infamous carpet-bag politician who some years since upon the hustings of Virginia's sacred soil told the common people that "honor would not buy a breakfast." We should never forget that at last the best and surest way to obtain money is to be at the head of our profession. The best doctor will make the most money. Daniel Webster was once asked by a young lawyer if there was any room for another lawyer at the bar where he practiced. Webster's reply was: "Yes, plenty of room on the top shelf." And I will say there is plenty of money for the doctor who occupies a position in the highest tier. Let us aim at the highest attainments in our noble science, and the lower demands will be abundantly met. We should live in an atmosphere whose waves do not conduct the metallic sound. Be great healers, and you will not need to be small financiers.

Mr. President and Fellows, at last, when your work is ended, when your own death chamber has been taken, may you wrap the mantle of Stonewall Jackson about you, cross over the river and rest under the shade of the trees, the foliage of which shall never be nipped by the blackening frost of death; and receive the plaudit from our great Exemplar, "Well done, good and faithful old physician."

Book Notices.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F. R. S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School. Edited by T. PICKERING PICK, F. R. C. S., Consulting Surgeon to St. George's Hospital, etc., and ROBERT HOWDEN, M. A., M.

B., C. M., Professor of Anatomy in the University of Durham, etc. *A Revised American, from the Fifteenth English Edition.* With 780 Illustrations, many of which are new. Lea Brothers & Co., Philadelphia and New York. 1901. Imperial 8vo. Pages, 1,260. Cloth, with illustrations in black, \$6; in colors, \$7. Leather, with illustrations in black, \$7; in colors, \$8.

For over forty-five years, *Gray's Anatomy* has been standard. Each edition has embraced advances and improvements in the methods of teaching. It has outstripped all competitors, for each edition has corrected the errors contained in the former—both in text and illustration. It represents the science and anatomy as it is to-day, and every author of surgery or other specialty has to adopt it as his guide. The work is too well known to require further notice than the announcement that this new edition has undergone a careful revision. The section on Embryology, especially, has been amplified, and the text rendered more intelligible by the introduction of some sixty additional illustrations after His, Kollmann, Duval, and others.

Progressive Medicine. Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia, etc. Assisted by H. R. M. LANDIS, M. D., Assistant Physician to Out-Patient Medical Department of the Jefferson Medical College Hospital, etc. Volume IV. December, 1901. *Diseases of Digestive Tract and Allied Organs: Liver, Pancreas and Peritonæum.—Genito-Urinary Diseases.—Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities and Orthopedics.—Diseases of the Kidneys. Physiology.—Hygiene.—Practical Therapeutic Referendum.*

Progressive Medicine is a quarterly, cloth-bound, octavo, of about 400 to 450 pages each, abundantly illustrated, commencing with March of each year. Price, \$10 for the four volumes a year, delivered. It well represents the progress made in 1900 and 1901 in the subjects discussed. It claims a list of twenty-one contributors a year, beside the two editors—not one of whom is from south of Maryland, and only one from Michigan and another from Illinois, and three foreigners. With the exception of about a dozen references to the *Virginia Medical Semi-Monthly* in this volume, not a single other Southern journal is referred to, nor is reference made to any of the Western journals. Yet from each of these sections—South and West—many valuable additions come.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. HALE WHITE, M. D., F. R. C. P., Physician to, and Lecturer on Medicine at Guy's Hospital, London, etc. Edited by REYNOLD W. WILCOX, M. A., M. D., LL. D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School, and Attending Physician to the Hospital, etc. *Fifth American Edition. Thoroughly Revised.* Philadelphia: P. Blakiston's Son & Co. 1901. Small 8vo. Pp. 744. Cloth, \$3; leather, \$3.50.

Each edition improves, and becomes more and more valuable to the practitioner. As a text-book, this book is not surpassed by any. It is wonderful with what facility both author and editor impart instruction so that it is easily retained in memory, and thus becomes serviceable at the bedside. We can but repeat what we said in 1899 of the former edition: "There is a conciseness and clearness of description of drugs and their therapeutic effects and uses that makes this book easy reading, and thus permits its teachings to be easily remembered. It is, in every respect, a first-rate text-book" for the student and for the practitioner as well. Much condensation of the former text has enabled the author and editor to introduce many new items of practical importance. This edition contains about forty more pages than the fourth.

Practical Medicine Series of Year Books. *Comprising Ten Volumes on the Year's Progress in Medicine and Surgery.* Issued Monthly. Under the General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Chicago: The Year Book Publishers. 1901. Cloth, 12mo. Ten Issues a Year. Price of the Series, \$7.50.

This *Practical Medical Series* promises what we conceive a year-book should be. As we understand it, each October issue will be on *General Medicine*, except diseases of the alimentary canal, etc.; the November issue on *General Surgery*; each December issue on *Diseases of the Eye, Ear, Nose and Throat*; each March issue on *Gynecology*, etc. No volumes will appear in January and February—why we do not know, as they are better reading months than July and August. The annual price, \$7.50, must be paid in advance, or else \$3.75 on receipt of the first volume, and \$3.75 on receipt of the fifth volume. To each volume, however, a net price is affixed if bought singly. Each of the editors resides in Chicago.

Volume I of the series, issued October, 1901, is on *General Medicine*. Edited by Frank Billings, M. S., M. D., Professor of Medicine in

Rush Medical College, with the collaboration of S. C. Stanton, M. D. It contains 270 pages, and is well indexed. It well represents the progress of medicine during the preceding year. These advances refer especially to diseases of the respiratory and circulatory organs, to certain infectious and constitutional diseases, and to miscellaneous diseases, etc. This volume is worth the price, \$1.50, if bought alone.

Volume II, issued November, 1901, is on *General Surgery*, edited by John B. Murphy, M. D., Professor of Surgery, Northwestern University Medical School. It contains 515 pages, well indexed. Its table of contents refers to almost every surgical disease, beside injuries, fractures and dislocations. A very large part of the book is taken up with technique, including description of new instruments and appliances. The volume forms an excellent addendum to any standard work on surgery, and thus becomes a most valuable book to the surgeon.

We shall note each of the succeeding volumes as received, so as to express our opinion of their several merits. But no doctor who pays \$7.50 cash for the series can regret his expenditure.

Editorial.

Medical Officers Must Have No Opinion.

If the reports be true, the days of freedom of speech and belief are over in this country until a new power comes upon the throne. When Schley was being slayed "in the house of his friends," some harsh rulings were made against some officers for expressing an opinion—when, in truth, the whole nation seemed indignant at the majority ruling of the tribunal assembled in his case. Now it seems from one of the Cincinnati papers that Major W. O. Owen, surgeon United States army, has been ordered to the Philippines for stating some opinions relating to the health of the people. Finally, it will come to pass that none of the officials of the government will have permission to think for themselves, but must bow to the dictates of a tyranny which presumes to rule men's thoughts and expressions. Such things are becoming unbearable, and will sooner or later, in this republican government, lead to disgust for the officials who make orders for punishment for

such offences. The official who undertakes to throttle personal opinion or its expression regarding the live matters of the day should himself be lifted from his seat in Cabinet or court, and be dealt with as a tyrant. We are not meddling with politics, but are expressing our opinion about a usurpation of power that shows that the man in authority is not fit for the place he holds.

Tax on Doctors.

In this issue we publish the full report, and discussion thereon, of the committee of the Medical Society of Virginia to secure the repeal of the law which taxes doctors for the practice of their profession in the State of Virginia. We cannot understand the justice of the law, which imposes a tax upon the practice of a profession which has for its purpose the prevention and the healing of disease and the repair of injuries. In common opinion, the practice of medicine and surgery makes the profession akin to that of the minister of the Gospel, and beyond that of the teacher—and editor—neither of which professions is taxed. We do not propose to argue the question, which has been so ably discussed in the report of the committee of which Dr. DeShazo is chairman, and by those who took part in the discussion before the Medical Society of Virginia last November, which report was adopted by an overwhelming majority.

It was thought, at one time, that the question of specific taxation of practitioners of medicine and surgery would come up before the Convention now in session in Richmond. Now, however, it is believed that it will be a legislative matter only. Hence the importance of doctors keeping their representatives in the Senate, as also House of Delegates, informed as to this matter.

Atlas of Clinical Medicine, Surgery and Pathology.

Jonathan Hutchinson, F. R. S., general secretary of the New Sydenham Society, has requested Messrs. P. Blakiston's Son & Co., of Philadelphia, the American agents of the Society, to announce the publication of "*An Atlas of Clinical Medicine, Surgery and Pathology.*" selected and arranged with the design to afford, in as complete a manner as possible, aids to diagnosis in all departments of practice. It is proposed to complete the work in five years, in fas-

ciculi form, eight to ten plates issued every three months in connection with the regular publications of the Society. The New Sydenham Society was established in 1858, with the object of publishing essays, monographs and translations of works which could not be otherwise issued. The list of publications numbers upwards of 170 volumes of the greatest scientific value. An effort is now being made to increase the membership, in order to extend its work. If the design is carried out in detail, as suggested, this *Atlas* will be one of the most valuable of medical publications.

Proposed Change in the South Carolina Medical Examining Board Law.

Dr. S. C. Baker, of Sumter, S. C., and Dr. Allord Memminger, of Charleston, S. C., have been appointed a committee of two to draw up a bill for the South Carolina State Medical Association to revise the exemption law passed by the State Legislature last winter in regard to graduates of the South Carolina Medical College. This bill will go before the coming Legislature for passage, and will not exempt any one, but will be in regard to this particular feature of examinations framed along the lines advocated by Dr. Memminger two years ago in an article prepared and read by him before the South Carolina State Medical Association, and which was also published in this journal with favorable comments. We hope the proposed change will be effected.

Breitenbach's Year Book, 1902.

Each year, the M. J. Breitenbach Co., 53 Warren street, New York, N. Y., is in the habit of issuing for complimentary delivery a *Physician's Memorandum Year Book*, which is extremely useful for the office table. Each year book has a frontis-page of some distinguished member of the medical profession. That of 1901 had a first-rate photograph of the late Dr. Lewis A. Sayre, of New York. That of 1902 has one of the late Hunter Holmes McGuire, M. D., LL. D., of Richmond, Va., which gives the book a special value to every lover of the memory of this great and good surgeon. A page is given to each date of the year for memoranda. Pages are appended for daily cash receipts and charges. Ely's Obstetric Table is on the third cover. Some clinical experiences with Gude's pepto-mangan are given, which affords profitable reading, etc.

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Original Communications.

THE OCULIST'S RELATION TO THE GENERAL PRACTITIONER.*

By A. D. McCONACHIE, M. D., Baltimore, Md.

That a society, composed largely of general practitioners, is willing to listen to a "talk" by an oculist, surely indicates, I take it, that the wide gulf which has so long separated general medicine and ophthalmology is slowly disappearing, and that practitioners are realizing that a knowledge of ophthalmology may frequently be of benefit in their daily practice. Furthermore, it indicates that physicians are ready and anxious to learn of the contributions which specialists are daily adding to the details which make for mastery of the processes of life, diseases and their alleviation. Indeed, it cannot be denied that a greater proportion of the phenomenal progress and gigantic strides which medicine and surgery have made during the last fifty years, has been accomplished through the efforts of individuals who have confined their attention to special lines of study and practice, ever with an eye to the interdependence between the phenomena of his field and those of the organism generally and the external world. Any specialist, worthy of the name, is not only a master of his special technique, but also has a broad appreciation of chemical, physical, and biological sciences, a thorough knowledge of the principles and up-to-date practice of medicine and surgery, and a wide view from the evolutionary and developmental standpoint, and is ever ready to apply information from each of these sources to every problem with which he may meet.

The tendency to specialize is a significant feature of our times, and by no means confined to medicine. It diminishes the responsibility of

* Read before the Medical and Chirurgical Society of Maryland at its semi-annual meeting, November, 1901, at Elkton, Md.

the individual, makes his work easier, more agreeable and lucrative. On the other hand, its tendency is to narrowness; hence, fraught with danger to the public. At the present time, we have, among us, too many so-called specialists, whose sole claim to special knowledge is a course of from two or three months to a year at the clinics of some of our cities, and thus inadequately prepared as practitioners of a specialty. Thorough equipment means years of expensive study and a thorough acquaintance with all the truths of anatomy, physiology, biology, chemistry, histology, pathology, and bacteriology. A specialist must understand the nature of diseased processes, the means of resistance to invasion of disease, the provisions for natural recovery, and the phenomena of natural and acquired immunity. Such knowledge will enable the truly scientific and scholarly physician, surgeon, or specialist to excel by watching and guiding nature to recovery rather than in interfering with it by the indiscriminate use of drugs.

The sub-divisions of medicine into specialties is not the arbitrary, artificial product of specialists; but the inevitable consequence of evolution through increase of medical knowledge. The general public is constantly creating all sorts of specialists—*e. g.*, for scarlet fever, ap pendicitis, rheumatism, diphtheria, complexion and hair; again, we have the specialist for everything—the general specialist, who treats anything and everybody. To this class belong the Faddists, Christian Scientists, Osteopaths, Electropaths, Doweites, and other charlatans.

Notwithstanding these menaces, the specialist is a boon to the welfare of humanity and necessary to the advance of our profession. We may sum up the benefits of specialism to medicine, as follows:

"It has advanced the science and art. It has classified diseases more thoroughly and simplified nomenclature. Obscure conditions have been discovered and elucidated; clearer descrip-

tions of diseases have been given in every branch of medicine; treatment has been generally simplified and crystallized, and multitudes of new methods have been introduced, and all these advantages have been open and free to the general practitioner. It has also advanced the ordinary practice of medicine by relieving conditions which the general practitioner could never have accomplished alone, and, incidentally, has benefited it by a certain education of the public to the pecuniary value of professional services."

So much for the benefits. Does this specialization restrict the field of the general practitioner? No! Is there anything left for him to do? Everything! Will he not ultimately come to perform the functions of a mere business agent of the specialist and to act as a local distributor for the patients in his community? No! The time-honored, well-trained, good, all-around general practitioner will and must remain as a cherished and necessary adjunct to every family, and attain, by the continued advantages offered through improved medical colleges, the highest type of the physician. The general practitioner and true specialist should never antagonize each other. In his consultation practice, the specialist stands in a different relation to his fellow-physician from that of other practitioners in consultation. He is rather a coadjutor than consultant. He is his ally in times of need, clearing up a doubtful diagnosis, mapping out a successful line of treatment in difficult cases; always ready to support, never willing to supplant, him. The general practitioner will manage all sorts of throat troubles, give antitoxin in diphtheria, do tracheotomy in emergencies, leaving intralaryngeal operations and intubations to the laryngologist. He will treat all acute diseases; advise as to hygiene, sanitation, etc.; attend normal confinements, and gladly share responsibility with an expert obstetrician in placenta prævia, etc. He will treat the majority of eye affections, but will call in the aid of an oculist to do cataract extractions, ophthalmoscopic examinations, etc., and so in all other departments of medicine. Thus will the interests of both patient and doctor be subserved, and greater confidence in the "family doctor" engendered. It is impossible for the family doctor to be a general specialist.

So much for specialism in general, and the debt of medicine thereto. Let us now, for a few

moments, dwell upon "The Oculist's Relation to the General Practitioner." Let us consider the question under the two heads—first, when should his skill be sought by the general practitioner? second, how can his aid be asked without injury to himself.

When should the general practitioner call in the aid of the oculist? I frequently hear physicians say they do not know anything about the eye and its diseases, and express themselves as if it were the most natural thing that a physician was not expected to pay any attention to the eye. This is not right. Why should the physician not have a large knowledge of the eye and its diseases? In no other department do we find such complete acquiescence and confession of lack of knowledge from the average practitioner as in eye diseases.

We have laryngologists, yet what physician would think it unnecessary to study diseases of the throat? What physician would permit a patient, consulting him for a sore throat, to go to a specialist, because he did not know anything about such conditions? I fear he would feel he would be jeopardizing his ability and reputation. Again, what physician would refuse to treat diseases of the female pelvis? I am quite sure there are none willing to say that only a gynecologist can and should treat such conditions. Every up-to-date physician tries to keep himself posted upon these conditions, and their treatment, so that he may intelligently and capably render aid, and only in the more serious conditions does he call in the aid of the specialist. In fact, physicians pay the closest attention to every organ of the body except the eye. Patients with the simplest eye troubles are turned adrift into the hands of the oculist, or, in many instances, compelled to rely on domestic remedies, or seek the aid of some faddist. Of course, there are numerous exceptions to this rule, and every effort put forth to do the best for the patient. Here, too, the physician, not having that ripe experience which long observation demands in ocular diseases, frequently permits the destructive ravages of an unrecognized disease to permanently injure vision before calling in the aid of the specialist. Need I mention more than two destructive diseases, iritis and glaucoma, which are so frequently mistaken and treated for simpler diseases, and when, too late, the patient discovers that other treatment might have proven beneficial long before, thus engendering a loss of confidence in

the attendant? Why should physicians be so indifferent concerning everything which pertains to the eye? Doubtless much of it is due to the wideness of the field and intricacy of the details of ophthalmology. However, there is much that is quite comprehensible and easily grasped by an earnest effort on the part of the rank and file of the general profession.

The eye is very frequently an index to pathological conditions elsewhere, and its diseases are frequently the resultant of, and dependent upon, pathological changes in the blood, circulatory apparatus, or other organs; hence its careful consideration in making a diagnosis in general diseases may be of value in judging of the general health, as well as pointing out any immediate danger to vision.

Every practitioner of medicine, whether special or general, should make himself familiar with the use of the ophthalmoscope and be able to detect pathological changes within the eyeground. He will thus have, in many instances, a clue to diseases more distinctly seated. I need only mention the importance of a careful inspection of the fundus oculi in cerebral and kidney diseases to impress upon you the necessity of a familiarity with the instrument. Medical schools should be, and some, I believe, are, making a knowledge of its use obligatory for graduation. Every physician knows disease of an organ of the body, which plays an important part in assimilation or elimination of waste, must have his close attention, and never rests satisfied until he has carefully examined every organ for the purpose of locating the cause of the constitutional disturbance. Yet how sadly has the eye been neglected in this search! Only within recent times has it been suspected of ever causing any disturbance without the orbit; hence has been left out of the sphere of possible causes. It is now a matter of common knowledge that a clear conception of certain eye phenomena is a most important aid in many obscure general diseases or diseases more restricted. I need only mention the importance of a knowledge of intra-ocular changes, which serve as guides in the diagnosis of many general diseases, as Bright's disease, malaria, circulatory, brain and cord diseases. Again, certain external ocular phenomena are most important in affording a clue to a more general disturbance. The study of parietic eye muscles will frequently point to the actual seat of a general disease, whether tabetic, syphilitic or cerebral. How frequently an Argyll-Robertson pupil—immobility of pupil to light—with reaction in accommodation of convergence, will hasten the diagnosis of *tabes dorsalis*, especially when combined with nerve atrophy and absent reflexes!

How frequently the appearance of an iritis points to the rheumatic or syphilitic character of the individual afflicted!

A conjunctival catarrh is usually one of the earliest symptoms in measles and scarlet fever, and should always be borne in mind as a precursor of these diseases.

The eye furnishes valuable information in arriving at a satisfactory diagnosis of that protean disease—*hysteria*—a disease without apparent lesions, but capable of deceiving the shrewdest by its resemblance to organic disease.

It is well known that most inflammations of the eye cause more or less headache or disturbance in one or more branches of the fifth nerve. Headache from styes, browache from corneal inflammations, supra-orbital and infra-orbital pain in iritis and glaucoma, splitting headaches in cyclitis, are seen daily. It is not so well known, however, that a perfectly healthy and normal appearing eye can and does produce the largest number of nervous affections. Oculists—American, especially—have long known that "eye strain" in reading, writing, sewing, etc., is a frequent cause of pain in the eyes and violent headaches. By eye strain, I mean, an excessive demand on either the ciliary muscle, or any of the extrinsic muscles of the eye. To it has been ascribed the origin of every conceivable ill that flesh is heir to. It has been accused of causing epilepsy, chorea, urticaria, etc., by the ultra enthusiast. I have never seen relief by eye treatment in such conditions. However, the relief of eye strain by careful attention to refraction and muscular balance can and does banish many of the reflex pains which so stubbornly resist an exhausted pharmacopeia in the hands of the physician. Eye headache, eye vertigo, nausea and sick headache do frequently yield to carefully adjusted lenses. Granted this is true, who should do it—opticians or oculists? Many physicians think anyone can fit a pair of glasses to an eye. In cases of grave medical or surgical diseases the best skill is called in consultation; but when the eyes want attention, a pair of glasses, and those from anyone, is good enough.

I do not want to be understood as casting any reflection upon the optician. Opticians should bear the same relation to the physician as

druggists do. They are a very necessary adjunct to the oculist. Their business should be the filling of prescriptions according to instructions from one skilled in all details of the eye. Opticians are willing to examine eyes *free of charge*, after attending six weeks, or less, at some optical school in which, possibly, eyes were being fitted with glasses from a trial case, without any pretence as to the cause of the error. Others buy a cheap outfit of spectacles and eye-glasses, and then are opticians. Department stores are fitting eye-glasses and spectacles by men who know nothing of the eye or its diseases. Some opticians are offering percentages to physicians for cases referred to them. The general practitioner is, in a measure, responsible for these conditions, often only telling his patients to get a pair of glasses, as, in that way, they would save an oculist's fee. No oculist, I am quite sure, would refuse to refract or examine any case referred to him by a general practitioner, for nothing, if the physician stated the patient's position and his inability to pay. I do not believe this is due to the lack of respect for the oculist, but simply carelessness, as many physicians think anyone can fit a pair of glasses to an eye. In my opinion there is no question that the general practitioner, who is guilty of sending his patients to the optician for refraction, is doing, not only the oculist and the patient, great wrong, but is also injuring himself, for, sooner or later, many of these patients find, when too late, that they have lost their sight through the ignorance of the true condition on the part of the optician. The patient, who is sent to an optician for refraction by his physician, when his real condition is glaucoma, will greatly discredit his physician when he finds himself blind, and knows that it is largely owing to his physician's fault. So, too, with progressive myopia, truly a diseased condition, and leads to ultimate blindness, unless most skillfully handled by an expert. Doubtless there are many opticians who can and do adjust glasses to many cases most accurately, yet, may not the commercial spirit tempt them to apply glasses in conditions requiring immediate and skilled expert care? I can see no objection to opticians fitting glasses to appropriate cases, but in no case, where there is the slightest evidence of disease, either visible or invisible, shown by inability to bring sight to normal in one or both eyes, should they do so, but unhesitatingly refuse to prescribe for such.

Finally, how can the oculist's aid be asked without injury to the physician?

The general practitioner and the oculist should be on the best of terms, as the patient will appreciate his efforts to do the best for him. On the other hand, neglect to call the aid of a specialist in time to be beneficial will be spread abroad, much to the detriment of the attendant. Very frequently the practitioner can relieve himself of responsibility by calling for the opinion of a specialist—a gentleman in the truest sense of the word—who, after his opinion is rendered, will leave the patient in the care of his physician, thus maintaining that essential quality in a physician—confidence, that all that can be done is being done, and thus rendering full confidence between patient, family physician and oculist assured. With the proper use of advantages, and with earnest and high purpose of doing the best possible, the general practitioner can and should use the results of special work in such a way as to enlarge his powers and advance his usefulness and work.

Work, and arduous, strenuous work, is the true secret of success.

805 N. Charles Street.

THE EARLY DIAGNOSIS AND TREATMENT OF HIP DISEASE.*

By A. R. SHANDS, M. D., Washington, D. C.

In presenting the subject of hip disease for your consideration, it is assumed that you all are familiar with its etiology and pathology, hence I shall confine my remarks to the two most important features of this very formidable malady—viz., the early diagnosis and treatment in the incipency of the disease. All of you who have had to deal with this trouble are fully aware of the great importance of an early diagnosis; for therein rests your only hope of bringing about anything like a fair functional result. This fact is readily appreciated when you remember that there is tendency to a distortion of the limb from the very incipency of the disease, due to the muscular spasm, which is one of the earliest, as well as one of the most reliable symptoms. I have nothing very new to offer you on this subject, but I do claim a certain familiarity with this disease, and trust that I may be able to tell you something that will enable you to diagnose your next case a lit-

* Read before the Washington Gynecological and Obstetrical Society.

the earlier than you did your last, and if I succeed in doing this, I shall feel fully repaid by knowing that even one of these poor victims has been benefited; for, as I said above, the earlier the diagnosis is made, with proper treatment following, the better will be the final result.

I fear that I may appear a little dogmatic, but I am sure that all of you who have opportunities to see the errors that I have seen made in diagnosing this disease will forgive me. I assure you I have seen cases of hip disease treated for rheumatism, sciatica, etc., until suppuration has extended into the joint cavity and the little patient's very life has been jeopardized by sepsis, amyloid degeneration of the internal viscera, etc.

The prospect that one has to face at the beginning of a case of hip disease is anything than a favorable one. It is very desirable to be able to foretell what is going to be the result in these cases, but even after a large experience, it is hard to even approximate the result in any given case, there being so many details in the progress of the case extending over years that require, not only the closest attention of the surgeon, but the hearty co-operation of the parents, and they often tire of this long course of treatment. It is discouraging again, for the best one can hope in the severe cases, and these are the ones that we have mostly to deal with, is to have your patient recover with a limb deformed to a certain extent—*e. g.*, a shortened limb; any other deformity than a short limb is a reflection on the treatment of the surgeon, for all distortion can be either prevented or corrected. One should get good functional results in the majority of cases under thorough treatment, carried out for a sufficient length of time. There are few surgical affections in which the surgeon can expect to check the progress of the disease and see better results as a reward for his labors than in hip disease, if he perseveres and sees that his treatment is thorough and properly carried out.

Diagnosis.—It is customary in the text-books to describe the diagnosis of the three stages of hip disease. This I consider entirely useless, as the time of greatest importance is the first stage; and if the diagnosis were always made in the incipency, the second and third stages would often never be developed; provided, of course, the proper treatment were always carried out. The symptoms to look for in diagnosing an early case of hip disease are as follows:

1st. Stiffness of the joint; due to tonic muscular spasm.

2d. Attitude of the limb in standing, walking, or lying, due to either flexion, adduction or abduction of the limb.

3d. Lameness.

4th. Atrophy.

5th. Pain.

6th. Swelling.

The above is about a correct order of their importance, but will vary some according to the stage and activity of the disease.

It may be said that the muscular rigidity of the muscles about the hip is, by far, the most important symptom in the early diagnosis. It is often present in other affections than hip disease; this will be further spoken of in differentiating this disease from those affections. Absence of pain and sensitiveness counts for nothing and atrophy is not characteristic. The limp is peculiar, and may be seen in other affections also.

In manipulating the limb of a young child who is inclined to resist, great care is necessary to detect the spasm. Any muscular resistance, due to fright, will extend to the other joints, as well as the one suspected. A careful comparison of the motions of the two limbs will reveal any abnormal resistance. The limitation of motion will be found to be limited to the extremity of the normal arc of motion—*e. g.*, flexion, adduction, abduction and rotation. In examining a patient suspected of hip disease in its incipency, the patient should have all of its clothes removed and be placed on a hard surface. Always begin the examination by manipulating the well limb, carrying it through all of its normal arcs of motion; this will serve the double purpose of familiarizing yourself with the normal motions of the hip joint that you may the more readily detect the limitation of motion when you come to the diseased limb, and, at the same time, will serve to gain the confidence of your already frightened little patient. One should exercise the greatest possible gentleness with the child or the object of your examination will be defeated. Get on the most familiar terms with the patient before touching the painful limb. Time and time again have I had the child tell me that I was examining the wrong leg; when I have once established myself in the confidence of the child, I have no fear that I will not detect any involuntary limitation of motion due to pathological muscular spasm, so characteristic of this disease.

Careful inspection in the early stage will sometimes show fibrillary contractions of the

muscles of the thigh on any sudden movement. In the cases that are well developed, the muscular spasm is often so marked that it will produce a practical ankylosis. In such cases a few whiffs of chloroform will relieve the spasm, and enable you to get perfectly free motion. It is impossible to say just what degree of limitation of motion should be accepted as evidence of hip disease, but any degree of limitation that has persisted is extremely suspicious.

In considering the second symptom of hip disease—attitude of the limb—it should be borne in mind that this is due entirely to the muscular spasm already described. The most common attitude is adduction, which is very often combined with flexion. Adduction always gives the leg the appearance of being shortened, and for this reason the parents always tell you that the lame leg is shorter than the other. Fortunately, if you have an intelligent parent to deal with, you can relieve their anxiety by explaining the difference between apparent and real shortening.

About the first symptom noticed by the parent is that the child is lame. Sometimes it is very slight, and often intermittent, but it may be asserted that no hip disease can be present without it at some time. It is an aid to diagnosis only; it cannot be taken as positive evidence without other symptoms. The lameness in the incipiency of hip disease is generally noticeable in the early part of the day, due to stiffness of the joint from the night's rest, and as the joint supples up from use later in the day, the lameness passes off. There are often intervals of days or as much as a week when there is no lameness, but as time passes, these intervals will become shorter, until there is a daily morning lameness, and still later on it becomes constant. By this time, all of the symptoms are so well developed that the diagnosis is very evident.

Atrophy is an early symptom, as a rule, but there are exceptions quite often. It should be borne in mind that the atrophy is a reflex atrophy, due to a disturbance of the vasomotors. This is also caused by the muscular spasm, which causes the limb to be deprived of its normal blood supply, hence atrophy takes place from starvation of the tissues, and not from disuse.

The pain in the early stage is always located on the inner side of the thigh just above the knee; when it is at the hip, you may be sure that it is due to either abscess formation or a

nervous hyperæsthesia. Night cries are common in the early stage, and I am convinced they should be given more weight, as an early diagnostic symptom than I have ever seen accorded them in any text-book. During my service in the Hospital for Ruptured and Crippled, New York, I had an opportunity to observe daily and nightly a large number of these cases; and often was my attention attracted while passing at night through those wards, where there were sleeping over two hundred crippled children—and probably one-third of them hip cases in every stage of the disease—by the sudden outcries of many. The night cry is almost always confined to the early or very acute cases. The "night cry" as all of the early symptoms, is due to muscular spasm. The cry is only heard in the early part of the night, and is due to the fact that when the child goes to sleep the muscular spasm relaxes, which allows a slight, involuntary motion of the joint causing the two inflamed surfaces of the head of the femur, and that of the acetabulum to come together and pain results. Later in the night, the child's sleep is more profound from exhaustion, and the reflexes are then also asleep, and sensation not so acute. In the later stage of the disease the muscular spasm is more intense, which practically produces an immobilization of the joint, thus preventing any involuntary motion of the joint to produce pain.

Swelling is not common in the early stage without the course of the disease has been very rapid, and even then it is not very important as a diagnostic symptom, for the diagnosis should be made long before it develops.

In *differentiating* this disease in the early stage, quite a number of affections at times present themselves for consideration, but only a few of the most important will be considered. The most common one is *contusion* and *sprain*. Here the diagnosis is very easy when there is evidence of violence to the external parts, or there is a reliable history of a recent injury; it is not so easy when the contrary is the case, and you have many of the prominent symptoms of early hip disease present. Usually you will get a history of a sudden onset of the symptoms—muscular spasm, lameness, distorting of the limb, etc. You will find these symptoms are too exaggerated to indicate hip disease, which is very gradual in its onset. When you are in doubt, put the patient's limb at perfect rest for a few weeks, and if the condition is due to a contusion or sprain, the symptoms will rapidly dis-

appear, and your patient will soon be well. If it should prove to be a case of hip disease, you could not possibly pursue a wiser course. The symptoms of sprain always follow immediately, not so in hip disease.

Rheumatism at times is difficult to tell from hip disease, but by close observation of the case for a few days, one should be able to tell the difference. In rheumatism, pain is much more prominent than lameness and muscular spasm; just the opposite in the case of hip disease. The onset of rheumatism is, as a rule, sudden; not so with hip disease. The symptoms in rheumatism will usually subside by use of appropriate drugs; not so in hip disease. Rheumatism rarely affects one joint alone; hip disease in both hips is very rare.

Neurosis of the hip often offers trouble in differential diagnosis, but as a rule one who is accustomed to dealing with chronic joint diseases should not have any great trouble in recognizing the nature of the case; for a case of true hip disease has a certain clinical expression that should be recognized, however prominent the nervous phenomena may be. The neurotic case is apt to follow a slight injury very quickly with symptoms entirely too pronounced to indicate true bone lesion, for, as has been said, the symptoms of hip disease are very gradual in their onset. The remissions of all symptoms in the neurotic case are much more thorough and prolonged than they are in hip disease. The muscular spasm in a neurotic hip will yield very readily to gentle passive motion; in hip disease the least passive motion will cause the muscular spasm to be more intense. There are other troubles that may be confusing in the diagnosis of hip disease—such as infantile paralysis, acute synovitis, bursitis, periostitis and others, but with close attention to the clinical history and symptoms gross errors in diagnosis should not be made by one who is a close observer.

Treatment.—A great deal has been said on the subject of the treatment of hip disease, and I regret to say that there has not been a very marked unanimity of opinion on the subject. The surgeons are divided into two grand classes—viz., the conservative and those believing in radical measures. The latter class are the general surgeons, who have never given any special attention to the conservative methods of the orthopedic surgeon. It is the firm conviction of the writer that radical operations in the early stage of hip disease should have no place in the routine treatment of this malady, for statistics

have shown beyond all doubt that the conservative methods have brought about far better results, both as to functional results and as to mortality.

The bone of contention between these two classes of surgeons is as to the advisability of excision of the head of the femur. It is acknowledged by both that in removing the head of the bone, if the disease can be entirely removed, the patient will make a more rapid recovery; but it must also be acknowledged that



in so doing the growth of the femur is checked to a great extent, and that a flail limb is the result, which is practically useless for locomotion. On the other hand, it is a well established fact that there is a tendency to spontaneous recovery in all tubercular bone lesions. This being the case, surely the conservative and expectant method is indicated.

As an evidence that excision of the head of the femur will check the growth of the limb, I refer you to the above photograph with a brief history. This boy, at the age of five years, had

an excision of the hip joint done by a surgeon of national reputation. The operation was done in the early stage of the disease, and it is evident that all trace of the disease was removed, as the wound healed by primary union, and in a few weeks a cure was the result. The boy was ten years old when this photograph was taken, and by close measurement he has six inches of shortening and a perfectly flail limb. At this rate of growth, by the time he is a man, the leg will be about one-half as long as its fellow.

It will be impossible to give an exhaustive account of the treatment in a paper of this kind, hence my remarks will be limited to the early stage before any serious complications have occurred.

The joint should be protected from all jar, exaggerated pressure or violent motion; therefore the indications in treatment are to furnish *fixation, extension and protection*; to benefit the patient's health in every possible way; to prevent and correct deformity, and to meet such complications as may arise. The treatment should be so adapted that it can be continued, not only through the acute stage, but through the entire convalescence until the joint is able to stand without injury from the jars incident to locomotion. It matters little what means is used to meet the indications above mentioned, just so it is the means that will produce the most perfect fixation, extension and protection which nature herself indicates to you by the muscular spasm is needed to give the patient rest and comfort. This muscular spasm is undoubtedly nature's effort to produce immobilization of the joint to relieve the pain; therefore one should do for nature what she is trying to do for herself, and thereby relieve her of the strain incident to her efforts.

By far the most perfect mechanical means of immobilizing the hip joint is with the plaster of Paris spica. This method fulfils all three of the indications above mentioned—fixation, extension and protection—when properly applied. If the case is seen before any distortion has occurred, the course to be pursued is more simple than if seen later. If distortion is present, it should be corrected before the plaster of Paris is applied. If the contractions are not very intense, the deformity can be corrected by gentle traction, as the dressing is applied without an anæsthetic; if this cannot be done, an anæsthetic should be used. If the contractions are of long standing, the tendons at fault should be cut subcutaneously before applying

the dressing. The joint should be thus protected until all tendency to muscular spasm has subsided, which occurs very rapidly under the perfect rest thus afforded. No rule can be laid as to the length of time the plaster should be kept on. This will depend upon the severity of the disease, and the perfect immobilization that is established. Generally speaking, it will be necessary to keep the plaster on from three to six months, but in very severe cases it often has to be kept up for a year or more. After the plaster is left off, then the ambulatory brace should be applied. It is worse than useless to apply a brace until the spasm has subsided. Frequent recurrence of the spasm will thoroughly convince you of the importance of continuing the immobilization.

Two questions now arise—viz.: 1, *When shall the brace be applied?* and 2, *How long shall it be worn?*

It should not be applied until the muscular spasm has been sufficiently overcome to prevent a recurrence of the deformity, so that the traction exerted by the brace shall be in line of the correct position of the leg, and it should be continued just as long as there is any evidence that the disease remains, let the time be one year or five years. Dr. Gibney says that the joint should be protected first, last and all of the time against trauma, whether the trauma comes from accidents without or from muscular spasm induced reflexly by the disease itself.

There are several hip braces in use. The surgeon will have to select the one that suits the case the best. It would be useless for me to explain the advantages of them here further than to say that the best one is the one that will afford the best protection to the joint and furnish traction sufficient to prevent the occurrence of deformity during the convalescence.

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CHOLEDOCHOTOMY.*

By I. S. STONE, M. D., Washington, D. C.

The operation known as "choledochotomy" is still in its infancy. It was proposed by Langenbuch in 1884; Parkes spoke of it in 1885; Kummel claims to have performed it in 1884, with fatal result; Courvoisier successfully performed it January 22, 1890. His second operation, February 8th, same year; both of these done successfully. Tait had learned to crush these stones in the duct by means of padded forceps, but he confined his surgical efforts chiefly to work upon the gall bladder and cystic duct.

In this country, Fenger's paper was the first to attract attention, and he succeeded in taking and holding the lead by his persistent effort to perfect the operation. Mayo Robson, of England, is also famous for his success, and more recently Kehr has a wonderfully good record of 6.6 per cent. only of mortality, while the mortality from all sources is yet high—namely, 37 per cent.

Case.—Mrs. J., age 30, white, in good health, 160 pounds, weight when seen 110 pounds. Referred by Dr. Koonen. Had previous ill health, including several abortions. Had been in hospital in this city in July, 1901, for jaundice and Bright's disease (acute).

Present History.—Has had jaundice for six months; gastric symptoms, persistent nausea and vomiting. Attacks of jaundice not accompanied by pain, and no stones ever found in stools. Do not know how much care taken to find them.

Operation set for December 11, 1901.

Patient etherized and placed in reversed Trendelenburg position. Incision downward five inches outside the rectus. Intestinal adhesions to surface of liver and gall bladder were gradually separated without much bleeding. The stomach and duodenum pushed to left and kept in position by large sponges and assistant's hands. When the large bowel (transverse colon) was separated from the liver, it carried away a portion of the gall bladder, which was necrotic, revealing two stones, as here shown. The gall bladder was firmly contracted around one of the stones, with a small quantity of pus present, which was confined to that locality entirely. One of the stones was in the cystic duct at its upper or outer end, and later in the opera-

tion a probe was passed into the duct showing the absence of other stones. The duct was friable like the gall bladder, and was badly lacerated by the manipulations necessary in the operation.

A good deal of time was spent in separating adhesions and in clearing the cystic duct, and in the examination of the hilum of the liver. But we were not satisfied with what was done thus far, although the amount of work done was far in excess of that usually required in cholelithotomy.

The jaundice was not due to the stones already found, and we made the necessary search for further obstruction, feeling somewhat divided in our opinion as to the best course to pursue, fearing the possibility of malignancy.

Finding it always difficult to locate the common duct in the operations formerly done for gall stones, we now located its lower end by following the duodenum down from the stomach until we were about or near the point, half its length, where the duct should enter, and then, with the index finger of left hand in the foramen of Winslow, and lifting the hepaticoduodenal ligament, the course of the duct was pretty clearly outlined and a stone was located about two inches and a half from the hilum of the liver, and nearer the liver than the duodenum. It is worthy of note that without finding the lower end of the duct (approximately), and then without finding a stone in the duct, its exact course would have been difficult to ascertain. We should have been obliged, as in former cases, to have said we don't find a stone, and proceed to finish the operation as best we might under the circumstances. But here we had the proof of the presence of a stone in the common duct. (I did not know at first that two were present.) The pulsations of the hepatic artery on the index finger were distinct, and although I could not see it, I knew the portal vein was very close, and that any injury to either vessel would probably be fatal. After repeated attempts to press the stone upwards into the hilum, where I could reach it with forceps, and also failing to crush it with fingers after the manner of Mayo Robson, or Tait, it was necessary to open the common duct and remove it.

It was not easy to hold the stone and duct still, while incision was made for extraction. An enlarged gland was first mistaken for the stone, and was pushed aside, and the duct opened between two catgut sutures, which were in-

*Read before the Medical Society of the District of Columbia, January 8, 1902.

sented that the duct might be held in view while other sutures were placed. The first stone located was easily extracted, and the second found below the opening and forced upward from about 1 1-2 inches above the duodenum. It was the largest of the lot, if my memory is not at fault. I did not find the duct so largely dilated, nor did I have the difficulty in extracting the stones that I thought possible from what Fenger and others had written. I do not think exploration with the finger was possible in this case, either above or below the site of the calculi removed. I was content to use a uterine sound, and while we are told that calculi are easily overlooked, hiding, as they do, in the ampula of Vater, I succeeded in effecting complete removal of the obstruction. The condition of the patient near the end of operation was not very satisfactory, and I confess to having felt some apprehension about the patency of the duct. However, these moments of anxiety will be ever felt by the surgeon in such cases until time removes all doubt. The absence of bile in the stools for the previous six months was not promptly overcome by the operation. Nearly two weeks passed without this desirable result having been announced. The closure of the duct with catgut did not occupy a great length of time, and many sutures were not placed for the reason that we did not care to prevent escape of bile if by so doing the duct might be too tightly closed. The remaining work of placing tubes and gauze drainage did not require much time.

A word about the conditions of the gall bladder. As formerly mentioned, it was torn away from the liver, being adherent to the colon. We hesitated to remove all of the bladder from the bowel, for there was an ugly-looking necrotic appearance, which gave promise of rupture of the bowel at this point, hence we were obliged to leave a part of it attached, and as no perforation occurred, think it was a proper thing to do. The drainage was placed as follows: One rubber tube down to site of the incision in the common duct, in front of the hepatico duodenal ligament. The other was placed below the site of the gall bladder behind the transverse colon, nearly reaching the foramen of Winslow. Some surgeons have made counter openings to provide for such drainage posteriorly, but we did not think it necessary, and the result proves our course was the correct one. A discharge of thick, viscid bile appeared when the first stone was removed from the common duct, but we did

not observe this when the cystic duct or hilum was sounded. The amount which escaped from the common duct was probably 5ij. But we were pleased to notice a very free discharge of bile through the lower tube, which was placed below the cystic duct; the dressings being well saturated at each twice daily dressing. The upper tube over the common duct began discharging on the fifth day, and we thought the sutures had torn out. This discharge ceased after about six days, and soon after this the tube was removed. The patient had casts in her urine until she had nearly recovered. Bile disappeared from urine about one week after operation.

After the drainage tubes were removed the patient rapidly recovered, and now, January 18th, is about to leave the hospital, apparently well, save a small opening in the wound, the site of the drain tract, which discharges a few drops of thin, watery mucus daily.

As noted above, nearly two weeks passed before we were satisfied that the stools contained bile. But this was easily explained by the very free vent given the current of bile when the gall bladder was removed, and the cystic duct practically torn away. When this was closed in by the healing process, the bile found its way readily into its proper channel. The patient made a very rapid recovery after bile appeared in the stools. Her appetite is enormous, and she is gaining flesh rapidly.

EOSOLATE OF SILVER FOR SPECIFIC URETHRITIS: ALSO FOR GONORRHOEAL CONJUNCTIVITIS.

By J. W. P. SMITHWICK, M. D., La Grange, N. C.

Long before the discovery of the gonococcus by Gneisser it was known that local medication seemed to exert the most beneficial influence, but doctors before that time were wading in darkness in attempting its intelligent treatment by not knowing the cause of the trouble. Now, the question of its intelligent treatment resolves itself into the employment of the best therapeutic measures—means that will give the quickest results and the greatest numbers of cures. For this purpose numerous drugs and methods have been made use of, and while the most of them possess some virtue, yet they are lacking in many particulars. The various

salts of lead, zinc, silver, mercury, etc., have been used extensively, and this extensive use demonstrates that they are of some value. Janet's method of irrigation is good if it could be carried out as recommended, but more than one-half of the people affected either will not or cannot give the time required for its successful use, and then the ultimate results, in my mind, do not seem to compensate for the great trouble and expense.

Having had a great many cases of this disease to deal with, and not having the success I desired, I made a comparative study of the actions and effects of drugs that were more commonly used, and recommended as being the most efficient in its treatment.

After a vast deal of experimental study and comparison I have reached the conclusion that, in a series of 260 cases, I have had better results to follow the use of eosolate of silver than any drug hitherto employed. This compound is especially penetrating, and being a very strong germicide, is of especial value in the treatment of diseases caused by the gonococcus.

I usually prescribe it, using nine grains to the ounce of water, in the beginning of the treatment of a case, and give instructions to use it by injecting into the urethra four times daily. Some of the cases require alkaline diuretics in the beginning of the treatment, but their use is soon dispensed with. Treated as above indicated, unpleasant, painful symptoms soon pass off, the discharge rapidly diminishes, and it has been the rule that the recovery is complete in from fourteen to eighteen days. When I use eosolate of silver I have found that very few complications make their appearance, which is no more than might be expected on account of its rapid and effective action. I instruct my patients to use a soft, rubber-tipped syringe of a drachm capacity, and to use this twice full four times a day, the last injection to be held in the urethra for a period of time of not less than five minutes. Used in this manner of the strength before indicated, which is about a two per cent. solution, it causes no more unpleasantness than a slight smarting sensation, which quickly passes away.

I have also found eosolate of silver of decided value in the treatment of chronic forms of gonorrhœa, and I find that the internal administration of one of the balsamics is a valuable adjuvant in hastening recovery.

I relate a few cases recently treated with this drug, as above outlined, as follows:

H. W.— came for consultation. He was suffering from an attack of gonorrhœa of two days' duration. The ardor urinae was very distressing, and the discharge profuse. There was a great deal of swelling and tenderness accompanying also. The specific coccus was shown in abundance on microscopical examination. I prescribed a two per cent. solution of eosolate of silver, and directed him to use a drachm syringe twice full four times daily, and to report at the end of the second day of treatment. At that time there was scarcely any pain attending urination, and the discharge had decreased materially. The injections of eosolate of silver were continued for seven days more, at which time he was suffering no inconvenience whatever, all the symptoms having disappeared. In this case, as is my custom, I advised a continuation of the medicine for three days longer, and since that time he has been perfectly well.

N. W.— had been suffering from an attack of gonorrhœa one week when he applied for treatment. The discharge was profuse, and the gonococci literally swarmed therein, as was revealed by a microscopic examination. There was great pain accompanying urination, and an uneasy, tender sensation was constantly present in the urethra. I prescribed a two per cent. solution of eosolate of silver, and directed him to use it four times daily, two drachms each time, holding the last injection in the urethra each time. I saw him again on the sixth day, and he stated that the improvement was wonderful, that he was troubled in no way with the exception of a small amount of discharge. On the eleventh day of treatment I made an examination for the germs, but none were to be found. He continued the use of the injections three days longer, making fourteen days of the treatment in all, and was discharged as cured. He has since remained well, though he drinks beer occasionally.

J. O.— had had gonorrhœa for about three months; had used various quack remedies, but the disease still lingered. There was a clear, glairy discharge, resembling the white of an egg, which contained a few gonococci and a quantity of shreds peculiar to this stage of the disease. He complained of an uneasy sensation in the urethra, which amounted to actual pain while urinating. I prescribed a two per cent. solution of eosolate of silver, and directed him to use a drachm syringe twice full three times a day, holding the last injection in the urethra about ten minutes each time. At first

he stated that the injections caused a burning sensation, but that soon passed off, and after two or three days of use it caused no unpleasantness. This man was under treatment for seventeen days, and at that time he was discharged as cured. There were none of the cocci or clap shreds in the urine, and there was no discharge. He has since been well.

C. A—, a young man who had had repeated attacks of gonorrhoea, presented himself for treatment, stating that it usually took about four weeks' time to cure the disease, and that he had been treated by as good physicians as there were anywhere. He complained of considerable pain while urinating, and the discharge was quite profuse. The pus showed numbers of cocci upon microscopic examination. I prescribed a two per cent. solution of eosolate of silver, directing it to be used four times daily with a syringe holding a drachm, using two injections each time, retaining the last one in the urethra five minutes. At the end of the first week he reported that he was making fine progress, a great deal better than he had hitherto done with the previous attacks. There was no pain accompanying urination, and the amount of the discharge was decidedly diminished. The injections were continued as begun, and at the end of fifteen days he was discharged as perfectly well. Soon after his discharge he sustained a prolonged drinking spree, which, I felt sure, would cause the disease to reappear with all its former virulence, but there were no symptoms whatever, which demonstrated that recovery was complete.

The other cases that I have treated have been of the various stages and types that are usually seen in a general practice, but I have had uniformly good results with the use of injections of a two per cent. solution of eosolate of silver. It is a rare thing that one of my patients has to be treated more than three weeks, and then it is usually due to some indiscretion on the part of the patient.

To digress a little from the text of my paper, I have used eosolate of silver in several cases of gonorrhoeal conjunctivitis with good results. I usually prescribe a one per cent. solution, directing it to be used four to six times a day, dropping two or three drops in the eyes each time. In ophthalmia neonatorum I have also made use of it in one per cent. solutions, and find that it gives excellent results. When used by instillations into the eye it does not cause so much pain as solutions of nitrate of silver as

ordinarily used. Adult patients have frequently remarked that the pain was a small item as compared with that produced by the use of solutions of nitrate of silver.

A BRIEF NOTE ON THE TREATMENT OF RHEUMATISM BY ASPIRIN.

By GEORGE H. THOMAS, M. D., Romney, W. Va.

Any one who has had much experience with the salicylates is acquainted with the difficulty of administering them for any length of time in some patients. It is not easy to disguise their nauseous taste, and on this account and their irritating action upon the stomach walls their use must often be given up just at the time when they are manifesting their beneficial effect. In some instances a course of salicylates leaves the patient with impaired digestion, which takes much time to overcome. In late years some authors have also called attention to the weakening effect of the salicylates upon the heart, and hence during their administration we must always be on the lookout against cardiac depression when they are given in large doses. Besides, it must not be forgotten that some nervous systems seem to be especially susceptible to the action of salicylic acid, as manifested by ringing in the ears, headache, and even a mild delirious state.

Having experienced quite some disappointment in the use of the salicylates I have recently experimented with acetyl salicylic acid, or *aspirin*, which I have found devoid of the unpleasant effects referred to above. My observations have shown that it does not interfere with the digestion, this being evidently due to its chemical nature, by reason of which it is not decomposed or acted upon in the stomach, while in the intestine the separation of salicylic acid is so gradual that the system is never subjected to the sudden absorption of large amounts, as in the case of the salicylates. My patients have never objected to its administration, because it is almost tasteless, and I have also found that it is completely free from any depressing influence upon the heart. I have given it to persons well advanced in years with perfect safety, as is shown by the following case:

Mrs. J., aged about 70 years, had been suffering from chronic rheumatism for a number of years, with an occasional attack of the acute

and sub-acute form. Her heart was crippled, and for this reason I was somewhat doubtful as to the safety of any salicylic preparation. However, aspirin very agreeably disappointed me. It was given at first in ten grain doses every four hours, without the least disturbance. In fact, an improvement of the appetite could be noticed under its use. In connection with the drug I administered a pill of iron, digitalis, and strychnine. Under this treatment the pain was relieved, and the swellings of the joints promptly subsided.

Another case was that of Mr. R., a strong young man about 30 years old, who had a predisposition to rheumatism. At the time I saw him he had been suffering intensely for several hours, and could not move a muscle without bringing on a paroxysm of severe pain, which was well-nigh unbearable. The ordinary routine treatment was first prescribed, but without any benefit. Resort was then had to aspirin in 15 grain doses, repeated every three or four hours, if necessary, and after relief was obtained the periods of administration were lengthened to every six hours. This was kept up for a few days, when the patient was completely relieved. I have no doubt that the use of the drug saved him from an attack of acute rheumatism.

In still another case, the patient, a hostler, aged 25 years, had been taking oil of gaultheria and salicylate of sodium for several days for the treatment of muscular rheumatism. The pain was so bad that he was unable to perform his duties, or even rest at night. Here, again, aspirin gave the desired results, and enabled me to retain the case which was about to withdraw from under my care.

These are only a few instances selected at random from a considerable number of cases in which I have tried aspirin, and judging from the results obtained, I have no hesitation in recommending the preparation to my professional brethren.

Bear in mind that when the genuine Tongaline is dispensed, your patients get salicylic acid from the purest natural oil of wintergreen, which, according to most eminent medical authorities, is the only salicylic acid that should be administered internally.

THE MEDICAL JURISPRUDENCE OF TOXICOLOGY.

By N. E. ARONSTAM, M. D., Ph. G.,

and

LOUIS J. ROSENBERG, LL. B.,

Members Medico-Legal Society, Detroit, Michigan.

Toxicology is that branch of medical science which treats of the character of poisonous substances, the symptoms they cause upon their being introduced into the human economy, the remote results they may produce, the treatment applicable in each individual case, and the various tests necessary for their detection. This should not be confounded with certain results incurred by the influence of divers organic, putrefactive and ptomainic toxins, which really belong to the domain of general medicine.

Definition of Poison.—A poison is a substance which, when introduced into the human body, causes disease or death, and this, by virtue of inherent activities of the poison, and not by virtue of any tendency or idiosyncrasy on the part of the individual.

The question as to whether or not a certain substance was conducive to the fatal result in an individual, is a proposition to be settled by a jury. The question as to whether or not a substance is noxious, is a question to be determined by a medical expert.

The sale of poisons is restricted to medical men, chemists and druggists, and is governed by statutes. In a number of States there are statutes prohibiting a physician, under penalty, to prescribe any poison to a person while intoxicated. In most States there is a penalty for neglecting to label certain drugs with the word "poison."

As a general rule homicide by poison is regarded as murder in the *first degree*, unless where statutes confer power upon the jury to determine the degree. *Prima facie* killing by poison presupposes malice.

Any person who carelessly handles poison in such a manner that as an ordinary consequence it produces the death of a human being, is guilty of manslaughter.

Giving poison to a human being with the intent to cause some harm is an assault, even if the party administering such poison was not aware that same was a poison, and that the substance was so deleterious to health, or was ignorant of the real effects to be anticipated from it.

DIVISION OF POISONS.

Poisons may be divided into two classes:

(a) *Local or mechanic.*

(b) *Systemic or constitutional.*

The *first* class implies a poison which by virtue of its irritating qualities may bring about disintegration, destruction, or absolute dissolution of tissues, which may eventuate into the individual's death.

The *second* class denotes a substance which, when introduced into the human economy, will be absorbed into the general circulation, thereby exercising its peculiar effects upon the tissues or structures it comes in contact with, either producing immediate fatal results or remote sequela, ultimately leading to death.

CHANNELS THROUGH WHICH POISONS MAY BE INTRODUCED.

(1) *Epidermatic*, or when introduced in the system by friction upon the skin.

(2) *Hypodermatic*, or when administered under the skin.

(3) *Ingestion*, or when taken by mouth.

(4) *Enemata*, or when administered per rectum.

INTERMEDIARY STATIONS.

By intermediary station we understand the lodgment of a poison after it has expended its particular activities. The points of deposition are as follows: Liver, spleen, kidneys, lungs, heart, brain, nerves, muscles, etc.

CHANNELS OF EXIT OF POISONS.

Poisons may be detected in the faces, perspiration, urine, saliva, milk, lachrymal secretion, the various mucous and serous secretions, and of late investigators have also found them in the semen.

CONDITIONS MODIFYING AND GOVERNING THE ACTIONS OF POISONS.

The following are the conditions which modify and govern the action of poisons:

(1) *The amount or quantity exhibited.*—Right here it might not be amiss to state that it is not necessary that there should be *enough* poison in the substance to cause fatal results; as long as there be *some* poison, and the intent be proved, the crime of an attempt to administer same is complete.

(2) *Modus Administrandi.*—To illustrate, poisons administered in pill form will require a longer period for their action than when administered in solution.

(3) *The presence of a concomitant substance.*—If there be a substance added to the poison, either accidentally or intentionally, antagonizing its effect or postponing same, the

poison may not act at all, or may act at a late period.

(4) *The tissues directly influenced.*—Poisons introduced hypodermatically will, as a rule, act speedier than when ingested by mouth.

(5) *The power of absorption.*—Mucous membranes of different individuals do not act alike. They do not show the same tendency. Healthy mucous surfaces will furnish excellent media for absorption, while diseased mucosæ may delay it. In connection with this it may be stated that an empty stomach will imbibe the poison more rapidly than when this organ contains food.

(6) *The power of assimilation.*—The rapidity with which the blood and chyle is circulating will contribute a great deal to the elaboration of the poison in the system.

(7) *The power of elimination.*—Certain poisons are more rapidly eliminated than others. Among the former belong the alkaloids, as morphine, strychnine, cocaine, etc., while to the latter appertain the glucosides, as digitalin, santonin, etc. Furthermore, the condition of the eliminative organs as the kidney, sweat glands, bowels, etc., must be considered in determining the elimination of noxious substances.

(8) *Habit.*—Persons habituated to a certain poison will show very little reaction to the same when administered. Thus, the Styrian arsenic eater will be but little influenced by a dose of arsenic.

(9) *Temperament, sex and age.*—The difference between the sexes towards the action of poisons is obvious. Sanguine individuals will be more readily overpowered by poison than phlegmatic persons. A delicate youth is more susceptible to the effects of poison than an adult. In old age poisons, as a rule, act overwhelmingly.

(10) *Idiosyncrasy.*—These are peculiar tendencies or states of organism regarding susceptibility to a certain substance. One may, with impunity, ingest large quantities of a poison and not be molested by it, while another of the same age and temperament, and under similar circumstances, may not resist the deleterious action of even infinitesimal doses.

EVIDENCE OF POISON.

(a) *Ante-mortem findings.*

The following are evidences of poisoning:

(1) *The abrupt development of symptoms.*—It is usual in instances of irritant poisons for the symptoms to appear immediately after the

ingestion of the substance, although the interval in cases of alkaloidal poisoning may be somewhat prolonged, but even in the latter the time of the advent of the symptoms does not exceed thirty minutes.

(2) *Rapidity of the course of symptoms.*—After once inaugurated, the poison advances rapidly towards the various channels, overwhelming the animal organism completely. Thus, in cases of strychnine poisoning, the effects are manifested within 15 or 30 minutes in the form of convulsions, both tonic and clonic in nature, and the lethal exit is accomplished within an amazingly short time.

(3) *Pathognomicity of symptoms.*—Certain groups of symptoms accompany particular poisons. As already intimated, strychnine will effect the muscular system, producing contortions of various kinds, arching of the back—opisthotonos arching of the chest—pleurosthotonos, and other convulsive movements. On the other hand, in morphine poisoning, there will be manifested a stuporous, narcotic and comatose train of symptoms.

(4) *Odor.*—Certain poisons emanate odors peculiar to themselves. Thus the exhalations of individuals poisoned by arsenic will strongly smell of garlic, while hydrocyanic acid and the cyanides in large quantities will emit the odor of bitter almonds.

(b) *Post-mortem findings.*—To begin with, it may be remarked that any dejecta or ejecta found by the physician in the room should be securely covered and placed in responsible hands.

Before conducting a post-mortem in a case of poison, it is necessary to be well supplied with ligatures, jars, tight-fitting covers and labels. The mouth should be first inspected for signs of any corrosive poison. Next the pharynx and œsophagus should be scrutinized. Lastly the œsophageal and duodenal ends of the stomach surrounded by ligatures, respectively, and severed at each of those extremities. The stomach should then be incised and the condition of the mucous membrane ascertained. Any indications of inflammation should be carefully noted. The examiner should look for the presence of softening, erosions and ulcerations in cases of acrid and mineral poisons. So, too, perforations may often be detected.

The duodenum, jejunum, ilium, and the upper portion of the rectum should be searched carefully for signs of inflammation and ulcera-

tion, especially in cases of arsenic and phosphorus poisoning. The latter is also apt to produce amyloid degeneration in the liver, spleen and kidneys. Therefore it is imperative to scrutinize these organs. After the autopsy has been completed, the different organs removed from the cavities of the body should be placed in appropriate jars, securely corked, fastened and labelled. It should then go to the chemist for analysis. This brings us to the next point.

(2) *Chemical analysis.*—Formerly experiments on the lower animals, in cases of poisoning with the substance ingested, have been regarded as a valuable means for the detection of noxious substances. But we would caution the practitioner not to do that, for this method is obsolete, and should be abandoned, since a different group of symptoms may manifest themselves with identical poisons in the lower animals and the human being, respectively. Chemical analysis should be the *sole* criterion to guide us. But, as it is impossible in a paper as the present to dwell upon the various modes and methods applicable to chemical analysis, we refer the reader to the special monographs on this subject.

Chemical analysis is possible in long interred corpses, when exhumation becomes imperative, and whenever same is demanded by the State authorities, for putrefaction is no obstacle to the detection of poisons.

Imputed and feigned poisoning.—It often happens that a physician is called to administer to cases of feigned poisoning either to create sympathy or to charge some one with a deed never perpetrated. Convulsions simulating strychnine poisoning are well acted by hysterical individuals. So, too, the greed of gain for something valuable or exploitation may be the motive of the simulator. Hence it frequently behooves the physician to differentiate between *feigned and real* cases of poisoning.

The Treatment of Poisoning.—This really belongs to the field of the general practice of medicine. It may not be amiss, however, to give a brief outline of this phase of the subject. For convenience of study, this may be divided into two divisions:

(a) *Treatment for local and hypodermatic toxic agents.*

(b) *Treatment of systemic poisons.*

As to the first division it may be stated, that all means should be employed to render the

poisoned area as innocuous as possible by any of the following means:

(1) *Ablation*.—i. e., superficial removal of the diseased portion.

(2) *Amputation*.—That is, in cases of snake venom—we must often have recourse to the amputation of a certain member.

(3) *Venesection*.—By this is meant an opening of a vein and the subsequent removal of the blood of the immediate vicinity of the poisoned region. If this method is not available, we can employ either:

(4) *Dry or wet cupping*.

(5) *Ablutions*; and

(6) *Ligation*.—The latter is done by means of tight ligature snugly put around the proximal end of the lesion.

(7) *Excision*.—The entire poisoned area should be removed by the knife.

(8) *Cauterization*.—This should be done by corrosive chemicals in case of venomous bites of animals; *neutralization*, by means of *alkalies*, in instances of *mineral acid* poisoning or *acids* in cases of *alkali* poisoning; and finally, the appreciation of the *actual cautery* or the red-hot iron to the part affected.

As to the second division, three chief indications should be kept constantly before our mind:

(1) Speedy and complete removal of the poison by the stomach pump or emetics.

(2) Treatment of the temporary symptoms, as given in text-books on *materia medica*, and those on the practice of general medicine.

(3) Treatment of subsequent lesions, which may have been entailed upon the individual by the effect of the toxic agent.

For details, we refer the reader to the excellent works of Bartholow, H. C. Wood, and Shoemaker.

Besides the direct evidence described above, there are also circumstantial and corroborative evidence, which may be summed up as follows:

(1) The suspicious conduct of the accused in handling various noxious and deadly drugs.

(2) The sole and exclusive undertaking to administer medicine and to give food to the patient.

(3) The removal and disposal of patient's ejecta.

(4) The expressing of an opinion of the probability of a person's speedy death.

(5) The opposition of a post-mortem examination.

(6) The urgent demand of an internment or the hastening of same.

(7) The false account of the real nature of the patient's malady.

This concludes the subject. Of course, there is still a great deal that could be said regarding it; but it is believed that the vital principles have been fully enough stated and sufficiently discussed.

McGraw Building.

THE VALUE OF SULPHATE OF QUININE IN THE TREATMENT OF MALARIAL FEVERS.

By ALEX. L. HODGDON, M. D., Fishing Point, Md.,
Formerly Professor of Nervous and Mental Diseases Maryland
Medical College, Baltimore, Md.

There seem to be a variety of views as to the efficacy of sulphate of quinine in the treatment of all cases of malarial fever, some advocating the theory that all cases of malarial fever yield to the proper administration of quinine within a short period, while Dr. Bemiss, in the *System of Medicine*, by Pepper, published in 1885, says: "Are conditions of the system present which may interfere with the specific treatment by quinine, and which are not themselves curable by it?" "It must be admitted in quite a large proportion of cases of remittent fever specific treatment fails to cure. I suppose that may be a reasonable proposition, which holds that in the majority of these cases the presence of secondary blood impurities annuls the ordinary specification of cinchona."

I think there are few, if any, who will not admit that quinine comes nearer to being a specific in malarial fevers than any other drug in any disorder, but that the sulphate of quinine will cure every case of continued malarial fever, remittent malarial fever, *æstivo-autumnal* malarial fever, within a week or ten days I am not prepared to admit. I have recently seen a case of continued malarial fever who, in about six or seven weeks, had taken about eight or nine 1-8 ounce bottles of sulphate of quinine prepared by one of the most able manufacturers of sulphate of quinine probably in the world. A part of the time he was taking cream of tartar mixed with lemonade, which would tend to increase the solubility of the quinine. The patient's tongue appeared very clean after calomel, and yet he had fever, which would not relax its grasp; after about five weeks and a half of treatment we still found the malarial parasite in the blood, accompanied by active *amœboïd* movement, and after about six or seven weeks of treatment still find the patient has fever.

Proceedings of Societies, Etc.

VIRGINIA STATE BOARD OF MEDICAL EXAMINERS

The Medical Examining Board of Virginia met in Richmond at Murphy's Hotel, December 16th (8:30 P. M.), 1901.

Dr. R. W. Martin, President, being absent, Dr. H. M. Nash, Norfolk, was called to the chair. Later the Vice-President, Dr. W. L. Robinson, Danville, presided.

On the roll-call by the Secretary, Dr. R. S. Martin, Stuart, Va., the following other members were found present: Drs. J. E. Warriner, Brook Hill; O. C. Wright, Jarratts; R. M. Slaughter, Alexandria; Robert Randolph, Boyce; E. T. Brady, Abingdon; W. B. Robinson, Tappahannock; Samuel Lile, Lynchburg; E. C. Williams, (Homeopath), Richmond.

Minutes of the last meeting read and adopted.

The committee to codify the by-laws made its report, which was adopted.

Dr. Samuel Lile introduced the following resolution, which was adopted:

Resolved, That after the gradings of the papers have been reported to the secretary, no changes shall be made without the unanimous consent of the Board, and the secretary shall, and is hereby, authorized and instructed to decline to make any changes except in accordance with this resolution.

Dr. J. E. Warriner introduced the following resolution, which was adopted:

Resolved, That the rules for the conduct of the examinations be so amended that the applicant shall be required to write only on one side of paper used, and as soon as each sheet is completed, it shall be turned written side down to prevent being overlooked—failure to do so being considered forfeiture of the pledge.

The following resolution, which was adopted at the Fall meeting of the Board, August 30th-31st, and September 1st and 2d, 1897, at Hot Springs, "That each examiner must have the questions on his section printed, and that he must mail the secretary a copy with synopsis of answers ten days before the meeting of the Board," on motion of Dr. Lile, was repealed.

On motion of Dr. Nash, a resolution was adopted instructing the secretary to pay Dr. Landon B. Edwards fifty dollars annually for the advertisement of the Board in the Virginia Medical Semi-Monthly.

Questions for examination were then adopted.

The following was the order of examinations: *Tuesday, December 17th.*—Histology, Pathology and Bacteriology, Surgery, and Obstetrics and Gynecology.

Wednesday.—Chemistry, Materia Medica and Therapeutics, and Practise

Thursday.—Hygiene and Medical Jurisprudence, Physiology, and Anatomy.

The following committee was appointed to conduct the oral examinations: Drs. Lile, Wright, Randolph, Brady, W. B. Robinson, and E. C. Williams. Board adjourned.

The Board met for further consideration of business at Murphy's Hotel at 8 P. M. December 17th. Dr. A. S. Priddy was called to the Chair. R. S. Martin, Secretary, recorded. Present: Drs. Rodgers, W. B. Robinson, Warriner, Brady, Slaughter and Lile.

The report of the committee who examined applicants taking oral examination was made and adopted. They examined thirteen applicants; ten passed, and three were rejected.

It was decided that the Medical Examining Board meet in Richmond, Va., June 16th, 17th, 18th, 19th, 1902.

Dr. E. T. Brady introduced the following resolution, which will be voted on at the next regular meeting of the Board:

Resolved, That each applicant before the Board shall stand an oral examination in addition to the usual written examination.

The secretary was directed to pay Dr. R. M. Slaughter ten dollars for codifying the by-laws. Board adjourned.

R. W. MARTIN, *Pres.*

R. S. MARTIN, *Secretary.*

ANATOMY.

(Answer six questions.)

Dr. C. W. Rodgers, Staunton, Va., Examiner.

Ques. 1. Describe the upper extremity of the humerus.

Ques. 2. Describe the ligaments of the elbow joint.

Ques. 3. (a) Give contour, origin, insertion, and action of levator ani muscle. (b) Name the muscles of the anterior femoral region.

Ques. 4. (a) Give the nerve supply of the tongue, mentioning distribution and function of each nerve. (b) Give the distribution of the median nerve.

Ques. 5. Describe the abdominal aorta (extent, relations, branches).

- Ques. 6.* Give structure, relations, size, and functions of the rectum.
- Ques. 7.* Give the structure, relations, and ligaments of the male bladder.
- Ques. 8.* Give the boundaries and contents of the popliteal space.

PHYSIOLOGY.

Dr. Robert C. Randolph, Boyce, Va., Examiner.

- Ques. 1.* (a) Define cells.
(b) Describe protoplasm.
(c) Name five (5) kinds of cells found in the human body.
- Ques. 2.* (a) To what do red blood corpuscles owe their color?
(b) How is the heart nourished?
(c) Describe briefly the mechanism of respiration.
- Ques. 3.* (a) What is dialysis?
(b) What are the villi?
(c) What becomes of the food absorbed by the blood?
- Ques. 4.* (a) What are some of the most important ingredients of bile?
(b) What is the function of the liver?
(c) What is the character of lymph?
- Ques. 5.* (a) What conditions increase urinary secretions?
(b) How is loss of body heat regulated?
(c) What is rigor mortis, and what is its cause?
- Ques. 6.* (a) What are the results of paralysis of the third cranial nerve?
(b) What would be the results of cutting the ophthalmic and submaxillary divisions of the fifth cranial nerve?
(c) What is the function of the eleventh cranial nerve?

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

R. M. Slaughter, M. D., Theological Seminary, Va., Examiner.

(Answer six questions.)

- Ques. 1.* Define (a) normal and (b) pathological histology.
(c) Name the elementary tissues, and give example of each.
(d) Name the three essential constituents of a cell.
- Ques. 2.* Define (a) immunity, (b) artificial immunity, and (c) acquired immunity, giving example of artificial and acquired immunity.
(d) Classify as to whether of animal or vegetable nature the parasites of scabies,

tinea circinata, actinomycosis, and echinococcus.

- Ques. 3.* (a) Define and illustrate the term "diathesis."
(b) Name the organs of the body most commonly affected by tuberculosis in adults, and in children.
(c) Describe a giant cell.
(d) State the supposed cause of the formation of giant cells.
- Ques. 4.* (a) Give briefly the normal histology of cardiac muscular tissue.
(b) Define myocarditis.
(c) State the acute infectious diseases (two) in which acute interstitial myocarditis is most apt to occur.
(d) Name the variety of atrophy often found in the heart muscle in chronic valvular lesions, in senile heart.
- Ques. 5.* Give the varieties, physical characteristics, and histology of lipomata.
- Ques. 6.* Define (a) œdema, (b) anasarca, (c) ascites, giving the general causation of each.
- Ques. 7.* (a) What is the origin of the pus cells?
(b) What are the chemical products of bacteria termed?
(c) What is a metastatic abscess, and what surgical fever is characterized by the formation of these abscesses?
(d) In what disease and at what period of it are gummata found?
- Ques. 8.* (a) Define chlorosis, and state sex and age to which it is confined.
(b) Describe the bacillus diphtheriæ.

MEDICAL JURISPRUDENCE.

Dr. A. S. Priddy, Marion, Va., Examiner.

- Ques. 1.* Give two tests for suspected blood stains.
- Ques. 2.* Define a fictitious, a factitious and latent disease; how would you detect a case of malingering epilepsy?
- Ques. 3.* Define an illusion; a delusion; an hallucination; an incoherence; and delirium.
- Ques. 4.* What is defloration; what is rape under the laws of Virginia?

HYGIENE.

- Ques. 1.* Give important points in the location and construction of public school rooms.
- Ques. 2.* Give the management of typhoid, typhus and scarlet fevers so as to prevent the spread of the disease.

- Ques. 3.* Give distinctive differences between antiseptics, disinfectants, and deodorizers; name one of each class, and in what strength effective.
- Ques. 4.* Name some disease caused by impure foods, and state how they may be prevented.

SECTION ON SURGERY.

Samuel Lile, M. D., Lynchburg, Va., Examiner.

(Short, correct answers to any six questions will be very acceptable.)

- Ques. 1.* (a) Differentiate tetanus and acute strychnia poisoning.
(b) Name the different forms of talipes.
(c) What is an abscess, a fistula, a fissure and an ulcer?
- Ques. 2.* (a) Differentiate chancre and chancroid, and give treatment of both.
(b) What is gonorrhœa? Give treatment, and name local and constitutional complications most common.
(c) Name three of the most common causes of retention of urine.
- Ques. 3.* (a) In hæmaturia, give methods of determining cause and location of hemorrhage.
(b) Name four varieties of acute intestinal obstruction.
(c) Define varicose vein, varicocele, cystocele, bronchocele.
- Ques. 4.* What is erysipelas, scrofula, rickets, osteo-myelitis and osteo-periostitis?
- Ques. 5.* (a) What is Colles' fracture? and treat it.
(b) Describe method of applying Buck's extension, and state when indicated.
- Ques. 6.* (a) What is phimosis and paraphimosis?
(b) Describe circumcision.
- Ques. 7.* (a) What is osteo-malacia, where and in whom does it occur most frequently?
(b) Name four varieties of gangrene; give causes and treatment of each.

OBSTETRICS AND GYNECOLOGY.

Dr. H. M. Nash, Norfolk, Chairman.

Dr. W. L. Robinson, Danville, Examiner on Gynecology.

- Ques. 1.* What are the functions of the deciduæ; at what period of pregnancy is the placenta differentiated, and briefly describe its mode of attachment to the uterus?

- Ques. 2.* What anomalies of the cord may cause untoward accidents, both before and during labor?
- Ques. 3.* Give the presumptive, probable and positive signs of pregnancy.
- Ques. 4.* Diagnosis and mechanism of labor in breech presentations, and the prognosis as to mother and child in such labors?
- Ques. 5.* Diagnosis and treatment of concealed accidental hemorrhage, both before and at full term?

GYNECOLOGY.

- Ques. 1.* What are the causes of uterine hemorrhage in the non-pregnant woman, and what the treatment?
- Ques. 2.* Diagnosis of gonorrhœa in the female; name the most important sequelæ, and give treatment?
- Ques. 3.* Give the causes of obstinate cystitis in the female, and the treatment.
- Ques. 4.* Give the symptoms, physical diagnosis and correction of prolapsed ovary.
- Ques. 5.* What are the diagnostic symptoms of ectopic pregnancy; outline its management after diagnosis?

SECTION ON CHEMISTRY.

Dr. O. C. Wright, Jarratts, Va., Examiner.
(Answer any six blocks, and only six.)

- Ques. 1.* (a) What is matter?
(b) How many and what conditions of matter exist?
(c) What are crystals?
- Ques. 2.* (a) Define an acid.
(b) Distinguish between a monobasic, dibasic and tribasic acids.
(c) What are salts and how formed?
- Ques. 3.* (a) State the chemical and physical properties of hydrogen.
(b) Mention two processes by which hydrogen may be obtained.
(c) State the composition of water.
- Ques. 4.* (a) Mention the principal constituents of atmospheric air.
(b) How does nitric acid act on animal matter?
(c) Give antidote for nitric acid.
- Ques. 5.* (a) What is lime water, and how is it made?
(b) Why is calomel incompatible with lime water?
(c) What is Plaster of Paris; how made, and for what used?
- Ques. 6.* (a) To which class of substances is the term proteid applied?

- (b) How are proteids acted upon by nitric acid?
- (c) What is fibrinogen?
- Ques. 7. (a) Of what three kinds of matter is the animal body composed?
- (b) What substances cause the clotting of blood?
- (c) To what is the acidity of the gastric juice due?
- Ques. 8. (a) Give the general chemical and physical properties of human urine.
- (b) What precautions are necessary in collecting a specimen of urine for analysis?
- (c) Give two reliable tests for albumen in urine.

THERAPEUTICS.

Dr. J. E. Warinner, Brook Hill, Va., Examiner.

(Answer four blocks, write plainly, and sign pledge and number only.)

- Ques. 1. (a) Name the most important animal foods, including their products; and in what ways should they be prepared for the sick.
- (b) What details should be observed in administering food to the sick?
- (c) What diseases may be produced by dietetic errors?
- (c) What fruits and vegetables are useful as laxatives? Why are they so, and when best eaten?
- Ques. 2. (a) What is meant by curative, palliative and prophylactic treatment? Give an illustration of each.
- (b) Name the different classes of cathartics, with an example of each?
- (c) What are the special symptoms indicating the necessity of cholagogues?
- (d) Give the uses of sulphur.
- Ques. 3. (a) Name the drugs used to render the urine acid; those to render it alkaline.
- (b) What therapeutic measures are useful in treating corpulency?
- (c) Write a prescription that would be antiseptic and eliminative in cases of intestinal disease.
- (d) Name four of the most prominent poisons and give their respective antidotes and antagonists.
- Ques. 4. (a) Outline the indications in the treatment of acute dysentery, and write prescriptions therefor.

- (b) Mention the most important contraindications for quinine.
- (c) What drugs may be substituted for quinine in malaria?
- (d) What is normal saline solution, and what are its therapeutic uses?
- Ques. 5. (a) Name the preparations of ammonium; give the dose and special therapy of each one.
- (b) Write a prescription for a stimulating expectorant to contain three ingredients.
- (c) Mention four of the best antispasmodics; how do they produce such effect?
- (d) Give the medium dose of the following for a child six years old: Tincture of opium, pilocarpine, extract of belladonna, tincture of strophanthus.

MATERIA MEDICA.

Dr. W. B. Robinson, Tappahannock, Va., Examiner.

- Ques. 1. (a) Name the soluble compounds of zinc.
- (b) Contrast the physiological differences of veratrum viride and aconite.
- (c) What is the physiological effect of phosphorus on metabolism?
- Ques. 2. (a) Name the salts of manganese.
- (b) Give the physiological action of cimicifuga.
- (c) Give the incompatibles with the preparations of iron.
- Ques. 5. (a) What physiological symptoms are induced by a toxic dose of gelsemium?
- (b) Name (3) three simple bitters which do not contain tannin.
- (c) Give antidotes, antagonists and incompatibles of opium.
- Ques. 4. (a) Give average adult dose of arsenious acid; hydrochloric acid dilute; tincture nux vomica; fluid extract ergot; tincture belladonna; chloral hydrate; extract cannabis indica; hyoscyamus, conium; tincture digitalis; tartar emetic; tincture of the chloride of iron.
- (b) Give the most actively toxic of the mercurial salts, describing the physiological symptoms produced.
- (c) Compare gallic and tannic acids and state physiological differences, if any.
- Ques. 5. (a) When full medicinal doses have been administered for a lengthened period, describe the characteristic

physiological action of arsenic as regards, first, the digestive organs; second, the circulatory and respiratory organs; third, the skin; fourth, the nervous system.

- (b) What is creosote, and how obtained?
 (c) Give the physiological action of cocaine muriate.

PRACTICE OF MEDICINE.

Dr. E. T. Brady, Cha'm'n and Reg. Examiner.
 Dr. E. C. Williams, Homeopathic Examiner.

(Answer any six questions. Number each reply to correspond with the number of the question. Make your meaning clear. Sign by number only, and do not forget the pledge.)

- Ques. 1. Give the cause and symptoms of tetanus. How does it differ from trismus? Differentiate it from strychnia poisoning.
- Ques. 2. Give cause and treatment of tonsilitis, and adenoids of pharynx.
- Ques. 3. Give general treatment for (a) Gastritis, (b) General Peritonitis.
- Ques. 4. Differentiate by clinical symptoms between interstitial nephritis and chronic parenchymatous nephritis, giving physical, chemical, and microscopical differences in the urine.
- Ques. 5. Give treatment of neurasthenia.
- Ques. 6. Give diagnosis and treatment of acute pleurisy, including advice as to the management of patient, and all directions for his comfort.
- Ques. 7. Give diagnosis, prognosis, and treatment of post-diphtheritic paralysis.

ALPHABETICALLY ARRANGED LIST OF APPLICANTS FOR LICENSE TO PRACTICE MEDICINE, SURGERY, ETC., WHO PASSED SATISFACTORY EXAMINATIONS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA DURING ITS SESSION, DECEMBER 16-19, 1901, HELD AT RICHMOND, VA.

Atkinson, Marmaduke, Richmond, Va., Med. Col. of Virginia, 1901.

Angle, Samuel B., Richmond, Va., Univ. Col. of Medicine, 1901.

Byers, Ashby C., Lacy Springs, Va., Univ. of Maryland, 1901.

Burwell, Z. C. A., Chingoteague island, Va., Univ. of South, 1901.

Bowles, Edgar W., Richmond, Va., Univ. Col. of Medicine, 1901.

Crockford, Wm. Hamilton, Univ. Station, Va., Univ. of Va., 1901.

Caldwell, B. R., Newcastle, Va., Univ. of the South, 1901.

Curtis, H. W., Lee Hall, Va., Med. Col. of Virginia, 1901.

Cringan, J. W., Westover, Va., Univ. Col. of Medicine, 1901.

Casey, P. H., Clifton Forge, Va., Univ. Col. of Medicine, 1900.

Edmond, Marion, Richmond, Va., Medical College of Virginia, 1901.

Fosque, George F., Onancock, Va., Jefferson Medical Col., 1901.

Funkhouser, Edgar B., Mt. Jackson, Va., Jefferson Med. Col., 1901.

Rarrer, D. A., Red Hill, Va., Univ. Col. of Med., 1901.

Fletcher, Howard, Warrenton, Va., Johns Hopkins, 1900.

Givens, R. T., Looney, Va., Univ. College of Medicine, 1901.

Gannaway, W. L., Delton, Va., University of South, 1901.

Holley, R. W., Inman, Va., Med. Col. of Virginia, 1899.

Honsbrough, L. F., Low Moor, Va., University of Virginia, 1901.

Holler, George F., Deerfield, Va., College of Phys. and Surg., Atlanta, Ga., 1901.

Hammond, R. M., Manassas, Va., Baltimore Medical, 1898.

Hoeh, A. G., Richmond, Va., Maryland Univ., 1877.

Innes, W. J., Richmond, Va., University Col. of Medicine, 1901.

Jones, J. W. C., Ware Neck, Va., University of South, 1901.

Jones, M. B., Richmond, Va., Howard Medical College, D. C., 1901.

Johnson, Walter W., Staunton, Va., Leonard Medical College, 1901.

Kirk, Thomas Allen, Roanoke, Va., University of Va., 1901.

Kyger, William A., Port Republic, Va., University Col. of Med., 1901.

Lucas, William Andrews, Patterson, Va., University Col. of Medicine, 1901.

Lawford, Frederick, Lawford, Va., University of Maryland, 1900.

Lancaster, Albert C., Dodson, Va., University of the South, 1901.

Myers, George Thomas, Norfolk, Va., Medical Col. of Virginia, 1901.

Newby, George Edgar, Richmond, Va., University Col. of Med., 1901.

Powell, O. L., Onancock, Jefferson Med. College, 1901.

Powell, W. C., Leader, Va., Medical College of Virginia, 1901.

Scott, Sydney L., Fredericksburg, Va., University of Va., 1901.

Scott, R. Hunter, Richmond, Va., Medical Col. of Virginia, 1901.

Scott, Charles M., Bluefield, W. Va., Univ. Col. of Med., 1901.

Summers, Forrest, Eckman, W. Va., Univ. of South, 1901.

Tatum, Benton F., Hunter, Va., Univ. of South, 1901.

Vaughn, John M., Manchester, Va., Howard Medical Col., D. C., 1900.

Vaden, Garland M., Portsmouth, Va., University Col. of Med., 1901.

Venable, Charles S., Charlottesville, Va., Univ. of Virginia, 1901.

Williams, James Fulton, Avon, Va., University of Baltimore, 1899.

White, J. Warren, Norfolk, Va., Med. Col. of Va., 1901.

White, Rooker J., Norfolk, Va., University Col. of Medicine, 1901.

Wight, T. H. T., Roanoke, Va., Howard Univ., 1901.

Wood, Harry G., Clarksville, Va., Howard Univ., 1901.

Wilson, Gordon, Baltimore, Md., University of Virginia, 1899.

Warner, A. Rowland, Homeland, Va., University of Pennsylvania, 1898.

Womack, J. Hobson, Chatham, Va., University Col. of Medicine, 1901.

Warrick, F. K. T., Glassboro, N. J., Univ. of Pa., 1901.

Walton, J. C., Reidsville, N. C.

Nos. of examination papers.	LIST OF INSTITUTIONS Whose Graduates were Rejected by the Medical Examining Board of Va., at its Regular Fall Meeting, December 16-19, 1901. With Percentage Marks of each.	COLLEGE OF GRADUATION.										Average Percentage	REMARKS.
		Hygiene and Med. Jurisprudence.	Chemistry.	Anatomy.	Physiology.	Histology, Pathology, Bacteriology.	Obstetrics and Gynecology.	Material Medica and Therapeutics.	Practice.	Surgery.	Total.		
15	Medical College of Ohio	30	45	75	30	75	75	68	85	80	565	62 1/2	
17	Howard University, Washington, D. C.	90	70	75	67	70	76	78	70	659	73 1/2		
23	Medical College of Virginia	74	90	95	57	60	76	73	78	40	643	71 1/2	
25	Leonard Medical College	80	75	71	73	70	77	75	75	60	656	72 1/2	
38	University of Virginia	73	75	69	60	70	83	40	75	40	575	63 1/2	
47	University of the South	95	75	85	61	65	75	77	75	50	658	73 1/2	
49	Howard Medical College, D. C.	25	25			40	40		40		165	16 1/2	
63	Louisville Medical College	50	45	50	50			60		55	310	34 1/2	
65	Baltimore Medical College	65	65	62	73	50	51	62 1/2	70	15	513 1/2	57 1/2	
80	Leonard Medical College	88	75	67	78	70	77 1/2	75	75	50	658 1/2	73 1/2	
92	Vanderbilt University	30	45	75	30	71	70	65	70	75	530	58 1/2	
93	University of Georgia	97	82	45	65	60	77	70	84	45	625	69 1/2	

INSTITUTIONS REPRESENTED BY APPLICANTS WHO CAME BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, FALL SESSION AT RICHMOND, VA., December 16-19, 1901.	Total Number of Applicants from each College.	Total Number of Applicants Licensed from each College.	Total Number of Applicants Rejected from each College.	Partial Examination.
University of Virginia	7	6	1	
University College of Medicine, Richmond, Va.	12	12	0	
University of Maryland	3	3	0	
Baltimore University	3	1	2	
Jefferson Medical College	4	4	0	
Baltimore Medical College	1	1	0	
College of Physicians and Surgeons, Atlanta	2	1	1	
University of the South	2	1	1	
Leonard Medical College	2	2	0	
Howard Medical College	6	4	2	
Vanderbilt University	1	1	0	
Louisville Medical College	1	1	0	
University of Pennsylvania	1	2	0	
University of Georgia	1	1	0	
Johns Hopkins University	1	1	0	
Medical College of Ohio	1	1	0	
College unknown	1	1	0	
Non-graduates taking partial examination	29			29
	94	53	12	29

INSTITUTIONS REPRESENTED BY THE APPLICANTS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, FROM THE ORGANIZATION OF THE BOARD, JANUARY 1, 1885, TO DECEMBER 16-19, 1901.	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Licensed Fourth Examination.	Rejected Fourth Examination.	Licensed Fifth Examination.	Rejected Fifth Examination.	Incomplete or Withdraw.	Partial examination.
Number before Board from Colleges, etc., since June 28, 1900.													
Medical College of Virginia	36	19	6	11		2	2			1			
University of Virginia	17	17	6	10									
University College of Medicine, Richmond, Va.	38	38											
College of Physicians and Surgeons, Baltimore	5	4				1							
College of Physicians and Surgeons, New York	3	3											
College of Physicians and Surgeons, Atlanta, Ga.	1	1	1	1									
University of Maryland	11	8	11	2	1								
Baltimore University	3	1	2										
Maryland Medical College	6	2	3	1									
Woman's Medical College of Philadelphia	1	1	1										
Jefferson Medical College	1	5	1	1									
University of the South	10	2	8	1									
Leonard Medical College	3	1	2	1	1								
Howard Medical College	7	5	2										
Medical College of the State of South Carolina	1	1	1										
Tennessee Medical College	1	1	1										
Vanderbilt University	2	1	1										
Baltimore Medical College	1		1			1							
Georgetown College, Washington, D. C.	1	1											
Columbian University, District of Columbia	1	1											
Hospital College of Medicine, Louisville	1	1											
University of Louisville, Medical Department	1	1											
Howard University, Medical Department, District of Columbia	1	1											
University of New York	1	1											
University of Georgia	1	2		1									
University of Pennsylvania	2	2											
Louisville Medical College	1												
Johns Hopkins University	1	1											
Medical College of Ohio	1		1										
College unknown	1	1											
Non-Graduates taking partial examination	63												63
	1878	1266	467	125	62	23	23	2	21	1		80	76

Book Notices.

Manual of Physical Diagnosis. For the Use of Students and Physicians. By JAMES TYSON, M. D., Professor of Medicine in the University of Pennsylvania; Physician to the University Hospital; to the Philadelphia Hospital, etc. *Fourth Edition, Revised and Enlarged. With Colored and other Illustrations.* Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia. 1901. 12mo. Cloth, \$1.50, net.

This well-known text-book for students has recently been sent out by the publishers in its fourth edition. This last volume has been slightly enlarged by new text matter, and several new illustrations have been added. These improvements can only serve to make the little book more popular and useful. We notice, however, there is still the same incompatible statement in this edition as that which occurred in the third edition. On page 23, in referring to the anatomical relations of the lower borders of the lungs with the surface of the thorax on the right side, at the top of the page, it is stated that there is lung as far down as the ninth rib in the mid-axillary line—while at the bottom of the same page the lower border of the lung is said to extend to the lower edge of the seventh rib in the mid-axillary line. With the exception of one or two little errors of this kind, which will creep into the best of books, Tyson's Physical Diagnosis is worthy of high commendation.

Warwick of the Knobs. A Story of Stringtown County, Kentucky. By JOHN URI LLOYD, Author of "Stringtown on the Pike," "Etidorpha," etc. *With Photographic Illustrations of Knob County.* New York: Dodd, Mead & Company. 1901. 12mo. Pp., xvi—305. Cloth, \$1.50.

The author writes an old-time story of the Confederate war. Mr. Warwick is a Kentucky preacher, had two sons in the Confederate army, was himself a Confederate sympathizer, but as a minister had neither said nor done anything to cause his arrest. One of his darkies, however, had heard him sing:

"Show pity, Lord; O Lord forgive,
Let a repenting rebel live."

Another hymn the preacher sang was:

"And are we wretches yet alive?
And do we yet rebel?"

* * * * *

"Our aching hearts now bleed to see
What rebels we have been!"

Another of the criminating verses the old darky had heard him sing was:

"Dear Saviour, prostrate at Thy feet
A guilty rebel lies."

The singing of these hymns was sufficient to cause the ungrateful negro to bring charges, to report him to the Federal authorities, who caused his arrest, and compelled him to take the Burbridge iron-clad oath or go to Camp Chase. Nothing else could be found against the minister. Finally, to escape prison, he took the oath, but ever after that he felt that "disgrace hung over the house of Warwick," for in his heart he was a sympathizer with the Confederate cause. His daughter went astray; his son was killed as a retributive punishment for some Federals who had been killed. Many deeply pathetic incidents followed—"seemingly enough to drive one to agnosticism or infidelity; but the old preacher, Warwick, remains till the end faithful to his religious creed and to his God." It is a thrilling story.

Editorial.

Correction.

In the January 24, 1902, issue of this journal, in an article on "The Crepitant Rale," by Dr. E. M. Magruder, Charlottesville, Va., our attention has been called by the doctor to the fact that he was not "Formerly Instructor in Clinical Medicine, etc., University of Virginia," as is stated at the heading of the paper, but that he is "Instructor in Physical Diagnosis" at the institution mentioned. This latter position Dr. Magruder has held acceptably for a number of years. Our error was made inadvertently, and we are glad to correct the mistake.

The Tri-State Medical Association of the Carolinas and Virginia

Will hold its fourth annual meeting at Asheville, N. C., February 25, 26, and 27, 1902. An announcement recently sent out by the secretary, Dr. H. A. Royster, Raleigh, N. C., states that the headquarters of the Association will be at Battery Park Hotel. The following rates *per diem* have been agreed upon by the various

hotels: Battery Park, \$3 to \$4; Swannanoa, \$2 to \$3.50, and the Berkley, \$2 to \$3. The railroads will allow a rate of one fare and a third for the round trip, on the certificate plan.

The President, Dr. J. N. Upshur, Richmond, Va., says the prospects are unusually good for a large and interesting meeting. He urges that all who can will come, if only for a day.

The following twenty-five papers had been promised when the preliminary announcement was issued:

Report of Cancer Cases, Selected to Illustrate Methods of Diagnosis and Technique of Operation, Stuart McGuire, Richmond, Va.; Sudden Death from Chloroform, J. W. Long, Salisbury, N. C.; Treatment of Retroversion of the Uterus by Ventrifixation, J. A. Watson, Asheville, N. C.; The Germs and Secretions of the Respiratory Organs in Health and Disease, Paul Paquin, Asheville, N. C.; A Method for Determining the Refrangibility of any Meridian of the Eye by Means of the Extreme Rays of the Spectrum, and Its Use in Correcting Errors of Refraction, H. H. Briggs, Asheville, N. C.; Typho-malarial Fever, W. E. Anderson, Farmville, Va.; Clinical and Pathological Relation of the Heart in Tuberculosis, L. F. High, Southern Pines, N. C.; Treatment of Abortion, John Herbert Claiborne, Petersburg, Va.; A Few Abdominal Operations on Women, R. S. Martin, Stuart, Va.; Acute Pyelo-Nephritis, with Report of Case, John Randolph, Arvonnia, Va.; The Diagnosis of Prolapsed Kidney, Austin H. Golet, New York City; The Etiology of Appendicitis, Van Telburg-Hofman, Sumter, S. C.; A Unique Case of Surgery, W. H. H. Cobb, Goldsboro, N. C.; Ileus, with Report of Cases, W. L. Robinson, Danville, Va.; When Should We Use the Forceps in Labor Cases? L. G. Frazier, Port Norfolk, Va.; (a) Preparation and Treatment of Surgical Abdominal Cases, (b) The Immediate Repair of the Pelvic Floor and Perineum, C. M. Reese, Charleston, S. C.; A Suggestion in the Treatment of Fractures of the Femur, J. W. Henson, Richmond, Va.; A Bullet Removed from the Brain—Recovery, W. S. Davidson, Newton, N. C.; Maternal Impressions, R. E. Hughes, Laurens, S. C.; Management of Labor in Contracted Pelvis, John F. Winn, Richmond, Va.; An Interesting Case of Ectopic Pregnancy Carried to Full Term, J. A. Williams, Reidsville, N. C.; Two Cases of Ectopic Pregnancy, D. A. Stanton, High Point, N. C.; Puerperal Eclampsia, W. W. McKenzie, Salisbury, N. C.; Paper, —, Stephen Harns-

berger, Catlett, Va.; Tuberculosis of the Genital Organs, Lewis Wheat, Richmond, Va.

American Congress of Tuberculosis.

The third annual session of this Congress is announced to be held on the 14th, 15th, and 16th of May, 1902, in the city of New York, in joint session with the Medico-Legal Society. There will be two sessions each day and no evening session, except on the 15th, when the banquet will be given. This will enable delegates from distant States and countries to enjoy the amusements and attractions of the city.

Arrangements will be made with railway companies for a reduced rate of fare, the details of which will be announced to the delegates.

In addition to the vice-presidents chosen at the sessions of May 15th, and 16th, 1901, the executive committee have authorized the appointment of three vice-presidents from each State, country, or province, and an honorary vice-president from each. Under this authorization about seventy additional vice-presidents have been named, who have already accepted, but in some of the countries and States all of them have not yet been named. Of the honorary vice-presidents, all but two of the provinces of the Dominion of Canada have accepted already, and six from governments. Among those who have accepted from the American States, already, five are governors of States and others high public officers. When completed, these officials will be all duly announced.

There will be, aside from all papers of a miscellaneous nature, four symposiums, arranged each to occupy one session of the day—viz.:

1. Preventive Legislation, Embracing the Social, Municipal and State Aspects of Tuberculosis.
2. Tuberculosis in its Pathological and Bacteriological Aspects.
3. The Medical and Surgical Aspects of Tuberculosis.
4. The Veterinary Aspects of Tuberculosis.

These will each be in charge of a committee, who will arrange for the opening papers, and for those who participate. These committees will be arranged with great care and duly announced.

A large number of the enrolled members have already announced the titles of their papers for the session of 1902, and a still larger number have sent their names to the secretary, who will contribute papers and send the titles later.

For details and enrollment, address Clark Bell, secretary, 39 Broadway, New York city.

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EMMENAGOGUES, THEIR INDICATIONS AND USES.*

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The proper employment of a class of remedies known as emmenagogues has become of lessened interest to a large proportion of our profession, and the misuse of them is noticeable to the consultant. It is, therefore, thought a *resume* of the subject at this time would not be valueless.

Emmenagogue, derived from two Greek words, signifies a remedial agent which stimulates or restores the normal menstrual flow when it is irregular or absent.

To properly consider this class of remedies, the pathological condition causing the deviation in the menstrual flow or the anatomical abnormality must be carefully investigated. Were the uterus absent, or some of the other anatomic anomalies present, amenorrhœa would continue indefinitely, in spite of all drugs. Yet one can scarcely doubt that many remedies, alone or assisted, under ordinary conditions, do increase the amount of menstrual flow, or restore it even after long periods of amenorrhœa, or at times when it would not appear at the expected time.

Many authorities, however, declare that true emmenagogues do not exist. By this is meant any agent that will, *per se*, produce or increase the menstrual flow. This declaration is based upon the fact that the uterine mucosa is not one of the excretory structures through which medical agents are expelled from the body. It is very difficult to trace the reasoning in such a statement when we remember most portions of the body yield to stimulants.

The conclusions of Christopher Martin (*Brit. Gyn. Jour.*, Nov., 1893), who has carefully studied the subject of menstruation, are:

* Read before the Medical Society of Virginia during its session at Lynchburg, Va., November 5-7, 1901.

1. Menstruation is a process directly controlled by a special nerve centre.

2. This centre is located in the lumbar portion of the spinal cord.

3. The changes in the uterine mucosa during a period are brought about by catabolic nerves and during the interval by anabolic nerves.

4. Menstrual impulses reach the uterus either through the pelvic splanchnics or the ovarian plexus—possibly both.

5. Removal of the uterine appendages arrests menstruation by severing the menstrual nerves.

It is probable the deductions are in the main correct. The sexual sense is located in the cord, and experiments show the same to be the site of the centre of menstruation. But abolishment of menstruation by removal of the uterine appendages is by no means constant. It is well known excessive exercise, emotions, excessive sexual indulgence, or even desire, will continue menstruation long after removal of the appendages. The gynecological surgeon sees many patients who menstruate after removal of the uterine appendages. Whether a diseased condition of the uterine mucosa or its muscle is the direct cause cannot now be stated, though no doubt such conditions are the exciting causes in many instances. The development of uterine fibroids after removal of the tubes and ovaries often act in this manner.

CONDITIONS REQUIRING EMMENAGOGUES.

Two distinct varieties of amenorrhœa are met with. One of them, in which the appearance of menstruation is delayed considerably beyond the usual age of puberty, is known as *emansio-mensium*. The other is called *suppressio-mensium*. In the former we have first to consider the age and general condition of the individual. It is only in those in which the patient has reached the age of eighteen years that treatment for *emansio-mensium* should be attempted, unless the general condition of the patient or her environments be bad, when a tonic course of treatment should be instituted. If *molimina* be

present, some of the direct emmenagogues may be employed preceding or during the existence of them, and usually with happy results. The physical obstructions to the menstrual flow are considered separately in another place.

Very rarely, indeed, are direct emmenagogues, those acting directly on the uterine mucosa, indicated in the treatment of delayed, absent, or scanty menstruation. Usually some faulty, general condition exists, having the menstrual disorder as one of the many symptoms present. Being one to which much importance is attached by the mind untrained concerning such matters, it assumes the place of first importance and may be the only complaint made by the debilitated neurotic, or the unfortunate tuberculous woman. This matter is to some people of such seeming importance that a regular, scant flow of three days or a good amount of flow recurring at slightly greater intervals than four weeks causes them to seek the advice of the physician in attempting to increase the amount in the one case and the frequency in the other. The usual training received by girls during the first five years after puberty is unfavorable to the proper development of their genitalia. It likewise debilitates or prevents their general physical development. The nervous system, however, is usually overtrained, and results in a large proportion of neurotics. As a very marked relation between the nervous and the reproductive systems exist, the neurotic origin of menstrual abnormalities is manifest. Even though they pass successfully through these few years, other difficulties beset them. The indoor life incident to employment as store clerk, typewriter, book-keeper, and many other occupations have a tendency in the same direction. Shock, anger, or sudden news of a depressing character will frequently be the only cause to which long periods of amenorrhœa may be attributed. I have recently had two striking cases of this character. In one, the death of a dear relative caused the menstruation to suddenly stop on the first day in a robust servant girl of twenty years, and at thirty, in spite of much treatment, the flow has never reappeared. In the other, a widow of thirty-two was suffering from la grippe and flowing freely. She received a telegram announcing the severe illness of a brother in Illinois. She started at once to go to him, and the flow had stopped before she reached the train. During the eight years since she has not menstruated, though very active treatment has been conducted during most of

that time. Both patients are very nervous, and have lost flesh, though continuing their duties. Others of this class of cases are fright and seasickness. It also includes the infrequent cases of post-marital amenorrhœa. Such a case was reported by Kalbfleisch (*Med. Rec., N. Y.*, 1893, xliii, 217), that of a woman who was always healthy and menstruated regularly previous to marriage at twenty-one years of age. Soon after marriage she became pregnant, and had nine children during the following nineteen years, but never menstruated after the first conception. Other derangements of the nervous system, as chorea, Reynaud's disease, and various neuroses, as spastic paralysis, etc., are common causes of amenorrhœa.

In certain impoverished conditions, as tuberculosis, myxœdema, carcinoma, or syphilis, decreased menstrual flow or entire absence of it is common. In anæmia and obesity, nature seems to divert such blood-loss to the welfare of the general nutrition. Often, however, in plethora the condition of the blood is above normal, and in such cases the lessened menstrual flow is probably due to functional nerve disturbances. Rheumatism and gout play no small part as causative agents. General physical depreciation from drug habits, such as alcoholism, morphomania, or the habitual use of cocaine or absinthe, has a like action. A very common cause of suppression of menstruation is chilling the surface of the body or getting the feet wet during the flow. Cold baths taken during the flow often have a like effect. Then we have to consider the pathological conditions of the pelvic organs in this relation. Chronic ovaritis may continue to such extent as to cause the parenchymatous portion of the organs to be completely displaced by connective tissue. The sclero-cystic ovary may by a slower process attain the same result. In such conditions the menstrual flow may be increased at first, but sooner or later it begins to lessen in amount and finally disappears. New growths in the ovary may have similar effect. Jollant (*Lancet*, London, July 2, 1898) mentions a case of this kind which lasted two years. Removal of the solid ovarian tumor was followed by regular menstruation and pregnancy.

Atrophic endometritis is considered a cause of absent menstruation, though I have seen but one such case. Whether the involvement of the ovarian plexus from inflammatory or suppurative processes in the tube or ovary may produce absence of the flow, is an interesting point,

about which no conclusions can now be reached. Feinberg (*Centralbl. f. gyn.*, December 2, 1899) mentions a case of amenorrhœa from six to twenty-four months after delivery in a non-nursing woman. In delayed menstruation, mal-development of the female genitalia will occasionally be encountered. Absence of the uterus and often of the appendages is noted. An infantile uterus often has some menstrual irregularity, varying from amenorrhœa to menorrhagia. Superinvolution is productive of absence of the flow. Acquired or congenital atresia of the vagina or cervix is occasionally present, as well as imperforate hymen, to prevent escape of the menstrual discharges. The last mentioned condition is not found in suppressed menstruation. But atresia may occur at any time, either before or after puberty. After all the causes mentioned, cases of delay for years of menstruation without assignable cause will be met. Such an one was reported by Wolfe, in the *London Lancet*, August 6, 1898. The woman had never menstruated until she reached the age of forty-four years, at which time she was seriously frightened, and menstruation began the same day. The flow reappeared a few times at irregular intervals until pregnancy occurred at forty-five (twelve years after marriage), with normal labor.

THE USE OF EMMENAGOGUES.

From the difference in their mode of action, emmenagogues are divided into two classes—viz., *direct and indirect*. The first comprises such remedies as act directly upon the centre of menstruation, the uterine mucosa, or in some other manner without regard to the general condition. The other class comprises such remedies as by changing the general condition of the patient increase or produce the menstrual flow. This class is the most important, and includes such remedies as tonics—iron, arsenic, copper, manganese, gold, digitalis, barium chloride, strychnia and quinia, salicylic acid and its salts, cocculus indicus, lappa officinalis, general galvanization, the application of the spinal ice-bag, and various forms of baths.

The principal direct emmenagogues are ergot, oxalic acid, apiolin, binoxide of manganese, permanganate of potash, santonin, eumenol, indigo, aloes, menyanthes trifoliata, turpentine, eantharides, myrrh, rue, savin, tansy, pennyroyal, gnaia, American mistletoe, senecio Jacobœa, cimicifuga, saffron, cotton root, quinine, pulsatilla, water pepper, serpentaria, aconite, sage, chamomile, blue cohosh, leeches to the cervix,

warm vaginal douches, sitz baths, and local applications of electricity.

It is evident from the long list of direct emmenagogues that a royal road to success in the treatment of amenorrhœa has been sought, in spite of the well-known fact that it is usually due to some vicious general condition. By such treatment it may be possible to occasionally succeed, but the exception must be the rule. It is only by treating the underlying condition, except in special cases, that success is to be expected.

In such general conditions as tuberculosis, carcinoma, and syphilis the amenorrhœa is probably a conservative feature, and should receive no treatment. Anæmia is the principal cause of lessened menstrual discharge, and calls for the tonics mentioned.

An elixir of the seeds of the common burdock (*lappa officinalis*) in the dose of a teaspoonful after each meal for a month, has been highly recommended for suppressed menstruation in young girls. It has not been used extensively. Digitalis, by increasing the arterial tension, acts well in many cases. Salicylic acid and the salicylates act best when the uric acid diathesis is a feature of the condition. Guaiac, though generally considered a direct emmenagogue, certainly acts well under the same conditions. Phillips strongly recommends *picROTOXINE*, the active principal of *cocculus indicus*, in doses of 1-60 to 1-12 grain, when anæmia is present. The preparations of iron, especially when combined with manganese, are favorite remedies in the same conditions. Stewart's well-known prescription contained arsenite of copper and *nux vomica*. Barium chloride given in doses of 1-4 to 1 grain with iron chloride tincture three times daily has acted nicely in some cases. General galvanization and Faradization are useful as general tonics. The ice-bag applied to the lumbar spine has a stimulating and tonic action on the nervous system, especially the vaso-motor portion. It increases the amount of menstrual flow by engorging the pelvic vessels and stimulating the centre of menstruation. General bathing in cold water with brisk rubbing or the cold plunge, by its tonic action, acts well as an indirect emmenagogue. The usual accompanying constipation is best treated by such emmenagogue cathartics as aloes and myrrh or carbonate of magnesia. Aloes and myrrh act by engorging the pelvic viscera. The magnesium salt is given in delayed menstruation in doses of thirty to ninety grains, the

smaller dose being given nightly for a fortnight and the larger dose nightly until the flow appears.

After the continued use of general tonics direct emmenagogues are often indicated. We should ever remember the golden rule: "If we do no good, be sure we do no harm," is particularly necessary in the application of these remedies. We should be sure pregnancy is not present before we resort to the use of powerful emmenagogues. The simplest direct emmenagogues consist of the sitz bath, pediluvia and external friction, to which may be added hot drinks of infusions of cinnamon, chamomile, ginger, tansy, pennyroyal, water pepper, sage, or serpentaria, which acts as relaxants or diaphoretics. Some, however, act as stimulants to the pelvic circulation. White (*London Lancet*, 1885) praises wineglassful doses of a decoction of *menyanthes trifoliata*. Ergot acts best with iron, though a pronounced direct emmenagogue. Sir James Sawyer (*Birmingham Med. Rev.*, 1887, xxi, 1) says guaiac is especially valuable when the cause of the amenorrhœa is anæmia or some other obscure condition. It, however, does not act well alone, but may be given in combination for weeks without danger.

A favorite preparation is the emmenagogue mixture of Professor Dewees, which is composed of the following:

Tinct. ferri chlorid.	6 parts
Tinct. catharid.	2 parts
Tinct. aloes	8 parts
Ammoniated tinct. of guaiac .	24 parts
Simple syrup	58 parts

The usual dose of this mixture is a tablespoonful three times daily.

The cantharides in this mixture is often objectionable, and frequently the proportion of aloes has to be increased or reduced. Guaiac does occasionally cause abdominal pain and purging, when its employment should be temporarily suspended.

When heavy nerve strain has produced irregular or delayed menstruation, a combination of strychnia, aloin, and atropia is of signal benefit. Aloes acts well in obesity by depleting the system and engorging the pelvic circulation. The spial ice-bag is here useful. In nerve tension, the use of the bromides is generally essential. The compound sumbul pill made from the formula of the late Prof. Wm. Goodell I have found a sheet anchor. The formula of it is: Arsenic acid, one-fortieth of a grain; dried sulphate of iron and sumbul, each one grain,

and asafœtida two grains. It is especially valuable when nervous manifestations and anæmia accompany amenorrhœa. Physical and mental shock have been known to restore the menses when other remedies had failed. Collins (*Brit. Med. Jour.*, 1889, ii, 921) reports a case of a strong, healthy, single woman of thirty-five years, who, from an unknown cause, had not menstruated in two and a half years, in spite of treatment addressed to the condition. One evening, on returning home from a country walk, she was suddenly alarmed by a tramp by the roadside, and was very much frightened. Her catamenia began that evening and continued regularly. Inglott (p. 77, same volume) mentions the case of a healthy girl of nineteen years, who had passed two periods, and, on falling down a terrace, began menstruating regularly the same day. In absence of the flow from taking cold, general treatment in the way of hot baths and cathartics to the extent of restoring the circulatory equilibrium is required. Aconite acts well in such cases, especially when given in hot water.

A few days before the expected flow, the employment of any of the direct emmenagogues has a marked tendency to restore the menstrual function. Most of them act by stimulating the centre of menstruation in the spinal cord. *Ergot* acts strongly as a stimulant upon all unstriped muscular fibres. In doses of twenty to thirty drops of the fluid extract three times daily, with iron, it is a powerful, though treacherous emmenagogue. V. Poulet (*Arch. de Toccol.*, Par., 1886, xiii, 539) first called attention to the emmenagogue action of *oxalic acid*. Since then it has been largely employed with gratifying results. A. W. Marsh (*Therap. Gaz.*, Detroit, 1891, vii, 164) was the first to recommend it in this country. Since that time Bloom, Talley, and Penrose have carefully studied its action and speak very highly of it. Poulet's formula was oxalic acid two parts, cold water two hundred parts, and syrup of bitter orange peel sixty parts. Of this a teaspoonful was given by mouth hourly for a few hours just before the flow should appear. Marsh gives one-fourth grain oxalic acid every four hours, with syrup of orange peel and water. Penrose says one-tenth to one-fourth of a grain given in syrup of lemon for one to four months has proven good. Bloom employed it in more than one hundred cases, and says it is the surest and safest emmenagogue. Talley reports toxic symptoms from three half-grain doses given four hours

apart. These were vomiting, pain in the epigastrium, complete prostration, weak and rapid pulse, cold extremities, eruption and itching on the legs, arms, and trunk, like urticaria, which lasted about seven days. My experience with it is limited to about thirty cases, in a few of which was noted gastric irritability and exhaustion. I am not prepared to recommend it as a safe remedy, but its efficiency is equal to that of any remedy I have used as a direct emmenagogue.

Apiol is an excellent remedy, especially when administered a few days preceding the flow. *Apiolin*, supposed to be the active principle of *apiol*, is known in this country as *apiol camphor* or *parsley camphor*. It is white in color, and has the characteristic taste, but only a faint odor of parsley. Its action has to be carefully watched, as it is liable to cause intoxication, giddiness, flashes of light and vertigo, with ringing in the ears. Sharp & Dohme color it red that it may not be so readily decomposed by light. It should be given in three to ten-grain doses two to three times daily for a few days preceding the expected flow.

Manganese binoxide and *permanganate of potash*, two kindred remedies, have been highly recommended by eminent gynecologists. They are best given in pill form after meals in doses of one to two grains, and from one day to several weeks. Ringer says in amenorrhœa of young women it will restore the flow after a lapse of two years or longer. It is most excellent in scanty flow. Fordyce Barker found it acted nicely in three classes of cases—1, young girls coming from the country for the purposes of education; 2, anæmia from seasickness, and 3, in women between thirty and forty years of age who have rapid increase in weight, with decrease in the amount of flow. *Senecio vulgaris* and *S. Jacobæa* (common ragwort) are recommended for amenorrhœa following confinement, or from cold, but is not sufficient in anæmia. It at best requires from ten to fourteen days for its action. The dose is one to two drachms of the tincture or twenty minims of the fluid extract three or four times daily.

Santonin, as an emmenagogue, has been used to a considerable extent, and is said to be particularly valuable in the anæmic variety of amenorrhœa. It appears to act well when the uterus is engorged. The dose of ten grains given at night for two nights preceding the flow seems dangerous. It is a very treacherous drug,

and, like oxalic acid, should be used very cautiously.

Electricity has been employed locally for amenorrhœa with doubtful success. The Faradic or the galvanic current may be employed by passing the current entirely through the pelvis in virgins, or with the negative pole against the cervix in others. The intra-uterine application for such conditions is scarcely advisable. Jones, of Tennessee, has recommended *indigo* as an emmenagogue, it having acted well in fourteen cases he observed. He mixed two ounces of indigo with a half-ounce of subnitrate of bismuth, and gave of the mixture half a teaspoonful in one-third glassful of water three times daily. *Eumenol*, Merck's preparation of the Tang-kui root, has been used by the Chinese for centuries in the treatment of amenorrhœa and dysmenorrhœa. Mueller and Hirth are enthusiastic supporters of it. Mueller says it is non-toxic and non-oxytocic.

Turpentine and cantharides are dangerous as emmenagogues, because of their tendency to irritate the urinary organs. Professor Parvin's favorite remedy was a pill composed of one grain each of aloes, dried sulphate of iron and white turpentine, which was given three times daily. Pennyroyal, rue, savin, and tansy are unreliable, and from their liability to produce gastro-intestinal irritation, are dangerous. The American mistletoe and cotton root are largely employed in the form of infusion in the West and Southwest for menstrual suppression from cold, and undoubtedly have merit. They act best in nervous young girls. A tea of them is used freely, especially by the negroes. Leeches to the cervix are troublesome and of little value. The bleeding following their removal is often severe.

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PROPHYLAXIS AND TREATMENT OF PUERPERAL SEPSIS.*

By EDWARD MCGUIRE, M. D., Richmond, Va.,

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In the beginning, I desire to say that I have nothing new or original to offer, nor is it my intention to deal with the subject of puerperal sepsis fully, but briefly and from a practical standpoint indicating a line of treatment that any conservative physician can follow, and to condense the latest and most approved methods which, according to my experience have proved best, in the treatment of these cases. No accident causes the physician more mental anxiety, loss of sleep, and shakes his reputation more than the occurrence of puerperal septicæmia in his patients. The laity have been to some extent educated on this line, and are quick to place the blame on the obstetrician, where, in a large majority of cases, it rightly belongs, though not always, for at times there are conditions and circumstances, where the details necessary to an aseptic delivery are impossible.

It might be well to say I was induced to write a paper on this subject from a conversation that I recently had with two clever doctors, in which one said, in discussing a case of puerperal sepsis, the uterus was curetted six times; and the other, in discussing a case, phlegmasia alba dolens, said he had continued to wash the uterus out daily one or more times for weeks. These two cases speak for themselves and indicate a need for a proper recognition of the pathological conditions, and a far greater conservatism than is usually employed, according to my experience, by the majority of physicians.

PATHOGENIC BACTERIA IN PUERPERAL INFECTION.

The more important pathogenic bacteria in puerperal infection are the streptococcus, staphylococcus, bacillus coli communis, gonococcus, and the bacillus ærogenes capsulatus. Besides the cases in which the infection is due to the entrance and growth of a micro-organism in the body, there are a large number of cases due to the absorption of toxic products produced by putrefactive bacteria, a condition known as sarræmia. These bacteria are anaerobic in nature, and cannot be cultivated in the usual culture media. They produce foul-smelling, frothy discharges. According to the observation of

Bumm, other pathogenic organisms are frequently associated with them, the streptococcus especially, so that we are rarely justified in classing an elevation of temperature in the puerperium as a suppurative fever until an accurate bacteriological examination of the lochia demonstrates the absence of pathogenic, and the presence of saprophytic organisms.

Investigation shows conclusively that the streptococcus is the most important factor in causing temperature reactions in the puerperium. Kronig, in 179 cases of puerperal endometritis, found the streptococcus in 75. Hirst collected from the reports of Baum, Czerniński and Widal 91 cases of puerperal infection, in 85 of which the streptococcus was found.

The advances in pathology and bacteriology now place puerperal infection among the wound infections, differing in no other way from those in other portions of the body, except in its anatomical relation. The importance of realizing this, and treating all cases with surgical asepsis, cannot be over-estimated, especially since the investigation of Baum, Kronig, and Williams have shown that in the large majority of cases the normal vaginal secretions are sterile, or, if bacteria are present, they are harmless.

LESIONS OF PUERPERAL SEPSIS.

Time and space do not admit of dealing further with this interesting phase of the subject, and I turn to the anatomical lesions produced by them. These lesions vary greatly; any part of the generative tract may be involved; and in many cases more than one portion is involved.

One form of puerperal infection frequently met with is that which appears as a puerperal ulcer of the perineum, vagina, or cervix. These ulcers are due to traumatism and uncleanness. They produce necrosis and sloughing, and predispose to the growth of bacteria. If the ulcers are of a virulent type, the infection may spread and become general, but, as a rule, it remains localized. These ulcers have a dirty greenish-yellowish appearance, and are covered by a dirty purulent secretion.

The most usual lesion in puerperal infection is *endometritis*. It may be limited to the placental site or extend over the entire mucosa. When the infection is due to staphylococcus or streptococcus infection, there is usually little or no odor accompanying it; but if due to the colon bacillus, or putrefactive organisms, the uterus is bathed in a profuse foul-smelling discharge. In most cases it is limited to the endometrium, but

* Read before the Medical Society of Virginia in session in Lynchburg Va., November 5-7, 1901.

may extend beyond, giving rise to metritis, lymphangitis, salpingitis, phlebitis, peritonitis, or a general systemic infection. The usual extension is through the lymphatics, but when limited to the placental site the thrombi become infected and give rise to phlebitis.

Bumm classifies endometritis into two forms: *First*, putrid endometritis, induced by putrefying bacteria in the more superficial layers of the decidua, but limited by a thick layer of small cell infiltration, showing nature's method of limiting the invasion of the micro-organisms.

Second, septic endometritis, induced by pathogenic organisms, from which any of the various lesions may develop. In cases of mild infection, the same protective zone is found, but in the virulent type a different appearance is presented. There is a croupous exudate, or the whole mucosa is changed to a dirty colored mass, and the protective zone of cell infiltration is imperfect or lacking; so that pathogenic germs are found beyond it, through the decidua, into the walls, along the lymphatics, and even to the peritoneum.

The complications, metritis varying from a small cell infiltration to abscess formation, parametritis, salpingitis, peritonitis, pyæmia, and phlegmasia alba dolens, are only referred to, and will be dealt with in a cursory manner with treatment.

EARLY RECOGNITION OF PUERPERAL SEPSIS.

Next in importance to the prevention of puerperal sepsis is its early recognition. It is disastrous to hide our fears under the disguise of "milk fever," "la grippe," "malaria," etc., and treat the patient with a handful of quinine pills. Let us recognize the infection early; a delay of twenty-four hours may decide the patient's fate. It is not necessary to go into the details as to the symptoms, only to recall what at the bedside may need immediate intervention.

In the first place, I wish to emphasize that any elevation of temperature occurring during the puerperium should be looked upon as a septic condition, until absolutely disproved by clinical and microscopic examination. Repeatedly and disastrously have I known this mistake to be made. The symptoms of puerperal sepsis necessarily vary, and we do not often meet with the clear-cut types of the disease as frequently described in our text-books. This is necessarily so; for in one instance we may have a piece of placenta undergoing putrid changes, and the symptoms entirely due to the absorption of toxins; in another, we may have putrid intoxica-

tion; and, besides this, pathogenic germs may have entered the circulation, and the picture presented reflects the disturbance produced by both. Again, the infection may remain localized in the lower portion of the genital tract, in the form of ulcerations or abscesses. In these cases, though a puerperal infection, which may become general, the first symptoms are generally of a local character.

Too often the premonitory symptoms are overlooked. A persistently rapid pulse rate after delivery is apt to be followed by a rise of temperature. Headache, insomnia, and diminution or suppression of lochia should arouse suspicion even before the acute onset appears, which it generally does about the third day, with a chill, followed by a rise of temperature, which remains constantly elevated. The uterus is more or less tender and boggy on digital examination. The lochia may be arrested if the temperature is high, or in a majority of cases is increased with an abundant bloody, purulent secretion. "The absence of odor from the uterine discharge is of greatest practical importance, for the average practitioner associates puerperal infection with a profuse foul-smelling lochia, while in fact, in the most virulent cases, and especially those due to pure streptococcus infection, there is very little if any odor to be noticed."

The symptoms of putrid endometritis differ considerably from those of the septic form; while we have the initial chill, and high fever, the pulse-rate is in proportion, and the patient does not look so ill. The main difference is the presence of an abundant foul-smelling discharge. This type is the most frequent, and generally terminates in recovery.

Between these types, all forms of gradations may exist, as we frequently have to deal with a mixed infection when the infection has extended from the ulcer or the uterine cavity. The symptoms vary, according to the extent of the complications that have arisen. A parametritis, the result of lymphatic infection, may vary from a cell infiltration to an abscess, from which the patient usually recovers, unless it bursts into the peritoneal cavity. When the infection extends through the walls of the uterus, or through the tube, a salpingitis, a pus tube, a localized peritonitis, or a general suppurative peritonitis may follow. When the organisms enter the venous channels pyæmia may ensue, with metastases in the different organs of the body, and here the symptoms will vary accord-

ing to the organ involved. The occurrence of phlegmasia alba dolens, which does not usually appear early, is an example of the infection extending along the blood vessel wall, producing thrombosis. In a small proportion of cases, fortunately, the virulence of the micro-organisms is so great and the toxins so rapidly produced in the blood, that nature's efforts are paralyzed, and there is no chance for them to become localized. In this most rapidly fatal form of infection, septicæmia, no mode of treatment is of any value.

DIAGNOSIS.

The diagnosis of puerperal fever should not be difficult, as the clinical history is usually marked. Any elevation of temperature above 100° F., occurring during the puerperium should be looked upon as an infection, unless disproved. It is true, an acute indigestion, or a rectum loaded with fecal matter, will produce a passing rise of temperature, but *not* a chill, and an active cathartic will soon clear up the case. Milk fever, generally looked for about the third day by older practitioners, is known not to exist. The normal puerperium should be free from fever.

From ignorance or a desire of the practitioner to shield himself from the consequences of his own neglect, malaria and typhoid fever are frequently made the scapegoat and confounded with this disease, especially the former. It is remarkable how often this occurs with some practitioners, in spite of previous disastrous experiences. No one is justified in regarding a chill or an elevation of temperature as the result of malaria occurring during the puerperal state, unless confirmed in this opinion by microscopical and bacteriological examinations, both of the blood and lochia.

The differential diagnosis between the several forms of infection is of maximum importance, for it serves to indicate the proper line of treatment to be followed in the individual cases, as well as to form a basis for prognosis. From a clinical examination, a differentiation of the prevailing type of infection can usually be reached by observing the following factors: An empty, smooth uterus, a rapid pulse rate out of proportion to the temperature, the lochia arrested, or little altered and non-offensive, should suggest streptococcus infection; while a fetid, frothy discharge, a high pulse rate, and corresponding temperature, a roughened surface of the uterus, or the presence of remnants of necrossed tissue or of pieces of membrane, should

suggest the sapræmic type of infection. In the mixed infection the symptomatology and prognosis are altered according as the saprophytic or streptococcal infection is in the ascendant. A *sine qua non*, then, in the differential diagnosis is a careful aseptic exploration under anaesthesia of the uterine cavity with the finger.

In cities where proper laboratories exist, a bacteriological examination of the lochia from the uterine cavity should be made, as first suggested, by Donderlein. Its importance cannot be overestimated, for by this means alone we can absolutely determine the type of the infection.

The bearing of the bacteriology, pathological anatomy, and diagnosis on the treatment was so important that more space has been allotted to it than was first intended in this paper, which was designed to be short and practical. Equally important is the preventive treatment, for it has been shown that puerperal infection is a wound infection due to the introduction of pathogenic germs from without in the great majority of cases; and failure on the part of the obstetrician to secure an aseptic delivery, as far as possible, is a criminal neglect.

I believe patients are less liable to puerperal infection in the country than in the crowded cities under the same conditions. This is probably due to the foul air, impregnated with dust, and containing a larger proportion of pathogenic germs; and partly due to influences which reduce the vitality and resisting power of the patients. I recently asked three very clever physicians, now living in the city, who formerly enjoyed very large country practices, about their experience on this point, and they unhesitatingly confirmed the opinion stated.

PREPARATION FOR LABOR.

A few remarks as to the preparation of the patient for labor are essential. The hair around the vulva should be cut short, and the patient given a bath; or, if this is impossible, the external genitals, perineum, and surrounding parts should be scrubbed with a brush and green soap, washed off with a 1 to 1000 bichloride solution, and a gauze pad or towel soaked in the same solution laid over the parts. The clothes of the patient, the bedding, and the obstetrical pad should all be fresh and clean. Vulval pads, made of antiseptic gauze and cotton, or from ordinary cheese cloth boiled, should be kept over the vulva during labor, and pledgets of cotton soaked in a 1 to 1000 bichloride solution should be kept to wipe off the discharges from the

vulva; and in the second stage, the feces, as it emerges from the anus, should always be wiped away in a backward direction. I once had a case infected by an ignorant nurse wiping the feces in the opposite direction.

The ante-partum and post-partum douche as a routine are to be avoided. They are to be used only when the vaginal secretions present marked abnormality. Investigation by Williams and others show that bacterial influence of the vaginal secretion is very much lessened by douches.

MANAGEMENT OF LABOR.

The management of labor is important. Too long continued pressure from an arrested descent of the head or severe injuries conduce to infection. In the third stage, and the early puerperium, to completely empty the uterus and secure firm contraction, great care should be taken. The presence of clots in the uterus form a suitable environment for bacterial growths, and a relaxed or subinvolved uterus, with its large uterine sinuses, affords an easy access for the micro-organisms to enter the blood channels or to penetrate the uterine walls. So important does the writer consider this feature of preventive treatment that he examines the uterus at every visit through the abdominal wall, and gives ergot as a routine for a day or two.

Proper drainage is secured by making the patient constantly shift her position, lying on the abdomen, or in Sim's position, and again by propping her up several times a day. The patient should be bathed frequently with a mild antiseptic solution, preferably by pouring the solution over the vulva.

The infection of a patient is most frequently through the examining finger; hence proper disinfection of the hand is most essential. The most practical method (though not certain) after paring and cleaning the nails, is a thorough scrubbing with a stiff nail-brush and green soap for ten minutes, in water frequently changed; then a submersion in a 1 to 1000 bichloride solution for five minutes. Vaginal examinations are made nearly always too frequently, and are always a source of danger. Indeed, the danger of infection is in proportion to the number of vaginal examinations. It is rarely necessary to make more than one or two vaginal examinations during the conduct of labor; and, indeed, many cases of labor can be conducted without a single vaginal examination, by means of external manipulation alone. The finger should be introduced by sight and not by

feeling, the vulva being thoroughly cleaned and wiped off with pledgets of absorbent cotton soaked in a 1 to 1000 bichloride solution. The labia being opened with the left forefinger and thumb, the examining finger should be passed directly into the vagina, and not smeared over the vulva or perineum, carrying whatever infection may be present into the vagina.

In Merman's clinic, Peiser investigated a series of 2,071 cases, in which, as far as possible, no vaginal examination was made. The practical conclusion from these cases, which included operative as well as normal cases, was strongly in favor of this method. The mortality was .55 of 1 per cent. from all causes. Only a small proportion of this number died of sepsis; and, on investigation, not one had been infected in the hospital.

Williams and others strongly urge that no vaginal examination should be made after the birth of the child; and that the generative tract should be regarded as a "*noli me tangere*." He makes two exceptions—where there is severe hemorrhage and in cases of adherent placenta. The occurrence of the latter condition, he thinks, has been frequently overestimated. I agree with him fully in regard to the rarity of adherent placenta. It is much more frequently due to the impatience of the physician and an injudicious employment of Crede's method, than to the uterine walls. I have often seen a retained placenta, but have never met with an adherent one. I do not agree with Williams and others as to not examining the vagina for lacerations. Unless this is done, extensive tears in the pelvic floor will be frequently overlooked; these, I believe, would be a greater source of danger than an aseptic examination and operation for their repair. As a rule, cervical lacerations do not call for immediate repair, only in cases where the hemorrhage is excessive. I have performed the immediate operation for the repair of the cervix eighteen times, and have never had cause to regret it. It is safer to follow any vaginal examination after the labor has terminated with a sterile normal salt solution injection.

TREATMENT OF PUERPERAL SEPSIS.

Concerning the treatment of puerperal sepsis, there is still some dispute. Some adopt very active and operative measures, while others rely entirely on nature in a streptococcic infection. The treatment should vary according to the infection. It may be local, with a view to destroying the germs at the site of the infec-

tion; or general, by the use of measures to neutralize the bacteria and toxins of the infection and to build up the general system in its struggle against the infectious germs; or surgical, to remove pus or organisms that may be a menace to the patient's life.

After a history of the case, a careful bimanual and specular examination should be made. If the seat of the infection be about the vulva or vagina, it can be easily ascertained by inspection, and the treatment should be directed to cleanliness. All abrasions or ulcers should be wiped and touched with an antiseptic—I prefer carbolic acid, followed by alcohol—and then dusted with one of the antiseptic powders.

Patients with an abraded surface covered with pus make a rapid recovery, while those who present the appearance of diphtheritic ulcer or vaginitis, do not get well so soon, especially if there has been lymphatic involvement. In cases of repaired laceration of the perineum which show infection, the stitches should be removed, the parts cleansed, and wet compresses of an antiseptic solution applied.

Much care should be exercised in making the examination of the vagina and cervix, so as not to open the wounds that have already healed. In case no points of infection are found to account for the symptoms, and the temperature reaches 101°F., an examination of the interior of the uterus should be made. This should not be done, however, if there is any doubt of possible points of infection in the genital tract, until sufficient time has elapsed to test the effect of the local treatment, combined with a free catharsis.

In all cases, where it is possible, the lochia should be removed for bacterial examination before introducing the finger into the uterus; after which the sterilized finger should be introduced into the uterine cavity and its interior carefully palpated. When this is finished, a careful bimanual examination of the appendages and peritoneum should be made.

In deciding the indications for treatment, it is well to remember the course of nature's reparative efforts; for otherwise we cannot appreciate the full extent of injudicious interference. On the one hand, we have an infectious mass in the uterus, which, if it remains, is a continuous source of infection. On the other, curetting may break down the protective barrier which nature has thrown out, and new avenues of entrance for pathogenic bacteria may be opened up. The course to be pursued is one that will

remove the source of infection, and at the same time interfere as little as possible with nature's process for the limitation of the infection. If the examination indicates the putrid form from retained lochia and blood clot, the cavity should be only irrigated with a normal salt or mild antiseptic solution. If placenta or decidual tissue is present, it should be removed, if possible, with the finger, or with what is next best, a piece of gauze wrapped around a pair of uterine dressing forceps. Commencing in the cavity of the cervix, gently and gradually wipe the circumference of it; then that of the uterus, constantly changing the gauze as the process continues. These two methods produce less injury to the underlying zone of cell infiltration, which it is so important to preserve.

In case a curette is used, it should be a dull one, and applied with as little force as possible. The curette is a dangerous instrument, even in the hands of the most expert, for in these cases the uterine walls are easily perforated. Only a few days ago I heard of a death resulting from this cause, and many such cases have been reported. I have no hesitancy in saying that I believe the indiscriminate and injudicious use of the curette in the treatment of puerperal sepsis has been productive of more harm than good has ever been derived from its proper use. Its greatest value is in abortion cases, where it is not possible to empty the uterus with the finger.

In septic endometritis, where the examining finger reveals a smooth uterine wall, and the absence of any necrotic tissue, the cavity should be thoroughly washed out, and we should not think of curetting. To use the curette for an endometritis, where there is nothing left in the uterus, is absolutely wrong, and it has cost the life of many patients that might have been saved by less severe treatment.

An intra-uterine douche before and after manipulations within the uterus is always advisable. It is most important to see that the temperature is right, that the return flow is free, and that the pressure of the irrigating fluid is not too great. As to what particular antiseptic should be used, it makes no difference, except that it should be a very mild solution—boiled water or a sterile salt solution is as good as any of them. One douche should be sufficient, if the foreign material has been completely removed. If there is no septic infection present, the temperature usually soon falls with an amelioration of the symptoms.

If the womb is flabby and large, with a ten-

dency to flexion, so that drainage of the uterine cavity is not good, it may be advisable to lay a piece of iodoform gauze in the cavity. Formerly, I made a mixture of iodoform and glycerine, in which a strip of gauze was saturated and then passed into the uterus for twelve to eighteen hours, hoping for some results from the osmotic as well as the antiseptic effect.

The general treatment, as we have no specific for puerperal sepsis, is to sustain the strength of the patient so as to combat the poison that has entered the general system—feeding and stimulation are the chief indications. In severe cases, whiskey and brandy in doses sufficiently large to make from six to ten ounces per day should be given. Strychnia is nearly always indicated in increasing doses. Pain, if present, should be relieved by cold or hot applications, and sleep induced, if necessary, by opiates. Antipyretics should not be used, as they depress the heart. To reduce the temperature, cold is the best remedy. Nuclein, for the purpose of increasing leucocytosis, and the normal salt solution by the bowel have proved useful adjuvants to other measures.

The unguentum Crede, an ointment of soluble silver, which was extolled some years ago, is conceded by a majority of writers to be of little value. It was hoped, too, that in Marmorek's antistreptococcus serum we had found a remedy that would prove as efficient as antitoxin in diphtheria; but this hope has been proved a fallacy. The reports are discouraging. The results obtained by antistreptococcus serum are no better than those obtained by other methods. The committee appointed by the American Gynecological Society to investigate its value close their report as follows: "We find nothing in the clinical or experimental literature, or in our experience, to indicate that its employment will materially improve the general results in the treatment of streptococcus puerperal infection." The results obtained by the committee in the treatment of streptococcal infection are interesting. Williams treated his cases with a single uterine douche of sterile salt water, his further treatment consisting in the administration of large doses of strychnia and alcohol, if indicated by the general condition of the patient, with a mortality of 4.35 per cent. Pryor opened the posterior *cul de sac* and packed the pelvic cavity with iodoform gauze, believing he could isolate the uterus and thereby prevent the extension of the infection—his mortality was 7 per cent. Fry gave intra-uterine douches until the diag-

nosis of streptococcal infection was made, then stopped all local treatment, and gave anti-streptococcus serum—his mortality was nearly 37 per cent. The results of Kronig and Baum coincide with Williams' experience, with the exception that they practically used no treatment, and their mortality was 4 per cent. In all these cases the presence of streptococcal infection was proved by a bacteriological examination.

All operative procedures during the acute stage ought to be avoided if possible. If conditions arise that demand surgical intervention, the most conservative methods are to be employed, even though the results are temporary. Abscesses, whether formed intra-peritoneally or sub-peritoneally, if they can be reached, should be opened and drained through the vagina. If they are situated high and point above Poupart's ligament, a large incision should be made parallel to the ligament, reserving a later date, when the acute symptoms have subsided, for the more radical treatment. In diffuse peritonitis, one feels tempted to open the abdomen, wash out the cavity, and drain thoroughly. This has been frequently done, but even those who have done it, admit that the mortality is not decreased by this method. If encysted pus collections form, and the condition of the patient warrants it, they should be opened and drained.

Finally, the removal of the uterus during the acute stage of puerperal infection is not to be advocated. It is true that recoveries have been reported, but if this operation is to be of value, it must be done before the microbes have invaded the general system. If this is done, many cases will be operated on unnecessarily, while if done later, and when it is clearly indicated, the results are almost uniformly fatal.

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DISCUSSION.

HONORARY FELLOW, DR. GEORGE TUCKER HARRISON, *New York City*: This is such an important subject that I think the very admirable paper of Dr. Edward McGuire ought to elicit general discussion.

In most points I agree heartily with the author of the paper just read in regard to the line of treatment which he advocated; but in some other particulars, I disagree with him. I most heartily agree with him in regard to the curette. It is a very dangerous instrument to use in case labor has taken place at term, as he very truly says. It is only applicable in cases of abortion.

In cases of labor at term, the curette ought never to be used. When I was in general practice in New York, I once called a colleague into consultation. The case was by no means certainly one of puerperal infection. He concluded to use the curette, and as a result he left me a well-defined case of pyæmia to treat.

In regard to the local treatment after natural labor, I have given it up. I formerly used intra-uterine douches, according to the teachings of that day; I don't use them any longer. At the New York Infant Asylum, in which I practiced, there were several cases of puerperal sepsis. The house surgeon, without getting my advice or permission, used the intra-uterine douche in one of the cases just after labor; and in spite of all that I could do, that woman died. I afterwards positively forbade the use of the intra-uterine douche, and all the cases got well. I now use no local treatment except to keep the parts clean. In my opinion local treatment is absolutely contra-indicated. The reason for it is the pathological condition, as is so well brought out by Baum. Suppose we have a case of infection, saprophytic let us say—nature builds up a wall of protection around the infected area. If you will only let these cases alone, they will get well of themselves. And even in cases of streptococcus infection, if you will let them alone, they, too, will get well simply with general treatment. The great salvation of these cases is the liberal use of alcohol, as the doctor suggests. But we violate the teachings of pathology when we use the intra-uterine douche. This seems to be the opinion of German obstetricians, who have investigated this question most thoroughly, and they hold that ground.

DR. L. LANKFORD, *Norfolk, Va.*: I feel that this subject to me is of more importance than any other. I think if an ounce of prevention is worth a pound of cure anywhere, it is in this. I find in my treatment the *preventive* treatment is far ahead of any other; and carrying out this opinion, I follow Crede's method of grasping the belly firmly over the uterus with my left hand, secure the expulsion of the placenta and a firm contraction of the uterus. Then I douche out the vagina, but not the uterus, with sterile water. Then I apply a thick layer of cotton over the parts, taking care that the layer be very thick—not just two or three inches—and then wrap over the cotton a bandage at least six inches wide. If this is done properly no micro-

organisms can get in. In the future I shall feel safe in getting the vagina sterile by the use of a sterile douche, and then enveloping the parts with a large amount of cotton. But I want to emphasize the point of removing all clots with sterile water, and the importance of the thick bandage.

DR. JOHN F. WINN, *Richmond, Va.*: Along the line of preventive treatment (and that portion of his paper Dr. McGuire stated that he had largely omitted reading for lack of time), I wish to say that in my opinion the subject of prophylaxis most assuredly begins before labor. There should be absolute sterilization of everything that is to be used, and this should be done before labor begins. To illustrate what I mean to say—of what use is it to sterilize our hands and the various paraphernalia connected with labor, if the nurse or any other attendant is to use water which is not sterile? Or, suppose she is about to use hot sterile water, and when she desires to cool it, will add water drawn from the faucet? Have the water boiled two or three days before labor, to make certain of an abundant supply of cold, sterile water. Keep everything sterile until the woman gets out of bed.

Along the line of examinations, I believe the time will come when vaginal examinations will be limited to one, and finally none at all; because, in my opinion, the chief thing to be determined by a vaginal examination is the progress that is being made in the dilatation of the os uteri. Other points, presentation, position, etc., can be acquired by the abdominal examination. Of course, it requires practice to become an adept in abdominal palpation, but by continual practice we can, for the most part, lay aside vaginal examinations altogether.

Another point is with reference to the hasty expulsion of the placenta. I am opposed to everything that interferes with the *normal* process of the delivery of the placenta. How and when does the uterus expel the placenta? The text-books are misleading to the medical student as to time, and unless read carefully they may mislead the practitioner. They say that the placenta is separated and expelled in twenty minutes after the birth of the child. It is known, however, that the placenta may be expelled in five minutes, or not until an hour, and longer in certain cases, after the delivery of the child. What the books mean to say is that the *average* time required for the separation and expulsion of the placenta is twenty minutes.

All agree that it is best to wait until nature announces she is ready to expel the placenta. It should be remembered that there is a proper time to begin Crede's method, and that if used *prematurely*, there is danger of throwing into action the contraction ring, thereby making difficult an otherwise easy and complete expulsion of the placenta and its membranes. I always place my hand, or have the nurse place her hand, on the uterus immediately after the expulsion of the child, and gentle friction is made until time for Crede expulsion; but this placing of the hand as a sentinel against hemorrhage should by no means be confounded with Crede's method. We should always bear in mind that nature has her way of performing this act, and Crede's method is intended to assist her and not to interfere with her manner of doing it.

DR. J. H. BROWNING, *Charlottesville, Va.*: In the vast majority of cases the infection atrium in puerperal sepsis is the lacerated cervix of the uterus. I think the large majority of practitioners have gotten rid of vaginal and uterine douches. I believe that if, after a short time after labor, if the flow is not too great, if you will let the woman get up and use the commode instead of requiring her to use the bedpan, she will thus wash out all of the lochial discharge, and run less chance of infection.

DR. HERBERT OLD, *Norfolk, Va.*: There is one point that Dr. McGuire did not touch upon, but which is very important, and that is the examination of the placenta when it comes out. If one always examines this carefully, he can readily determine whether any of the placenta has been left. I think that the management of the third stage of labor is the most important one. I cannot agree with Dr. Winn in regard to Crede's method. The hand of the operator ought to be on the fundus and held there for one hour after the birth of the child.

Another point is that the *normal* vaginal secretion is a very strong antiseptic and germicide. It will kill in a greater or less time any and all germs likely to occur. The germs of the vaginal tract have recently been examined very thoroughly, and it was found that the vaginal tract was absolutely free from germs, that the uterus itself was free, and that the germs present were in the vulvar canal. Therefore that is the part to be thoroughly cleansed; and then held wide apart with the fingers of one hand so that the fingers of the other hand can enter the vagi-

nal canal without coming in contact with the labia minora.

At the last meeting of the American Medical Association the use of the curette was discussed, and it was there decided that its use was absolutely correct. While it may be true that nature will wall off the infection area, by the use of the curette you get rid of the infection altogether, which is desirable, even though it be only localized. If you have a streptococcus infection, you have a general infection, and taking out the uterus would do no good. But I believe in the curette. The only way you can determine what the infection is is to introduce a sterile sponge into the vagina and then make a microscopical examination of the discharge. In staphylococcus infection, use the douche and curette; in streptococcus infection, use general treatment. It has always been my practice to feel with the finger where the placenta site is and curette there. I use the sharp curette; the dull curette does no more good than the finger. I cannot see how there can be any danger if you always draw the instrument toward you, and if this rule is followed, I can't see that there is any danger of perforation.

DR. J. H. NEFF, *Harrisonburg, Va.*: I want to refer to a case I had last summer, and to ask if you have seen anything like it. It was a case of mixed infection. It was a young woman, a primipara. I had been attending her husband, who had a bad sore throat, with the possibility of diphtheria. I was called in on the second day to see the woman, and found she had a sore throat, and she soon broke out with the eruption of scarlet fever. This ran the typical course of scarlet fever, the eruption, sore throat, tympanitis and all being present. I simply report this case, and ask if any one has had an experience similar.

DR. C. R. GRANDY, *Norfolk, Va.*: There are two points which have not been brought out in this discussion. First, in making your diagnosis of these cases of very great importance is the blood count and examination. First, from the blood count, if there is increased leucocytosis, then look out for trouble in the breast or womb. Then, in the blood examination, look for malarial organisms, and if you find them, give quinine and things will be all right. If you don't find them, then look out for trouble. I was called to a case in which a woman had puerperal sepsis. The curette was used; she

still had chills and fever. She was curetted again; the chills and fever kept up. Then hysterectomy was performed, at first attempted through the vagina, but finally through the abdominal walls. I had made previously a blood examination, and found staphylococci. Before this blood examination was made anti-streptococcus serum had been administered, but, of course, it did no good, as the infection was not from streptococci. I performed the autopsy in that case, and found that the greater part of the uterus had been curetted, but there was a triangular area which had not been touched, and there was pus in this area. So probably this was the seat of the trouble. The principal point is, if you are going to curette, curette it all. If you don't curette all, you will leave a little area of slough, and, as you have broken down nature's barrier, the infection will spread much more rapidly. In connection with the case I have alluded to, another point I wish to bring out is that the case had gone too far; the bacteria were all in the blood, and, therefore, the removal of the uterus did no good whatever.

DR. JOS. PRICE, *Philadelphia*: (Notes of remarks not received.)

DR. A. P. BOWLES, *Scottsville, Va.*: I enjoyed Dr. McGuire's paper very much, and, though I have not had the experience that a great many of you have had, still I have gotten a baby now and then. I don't agree with Dr. Harrison; for, following up his line of argument, he says that a midwife can do as much good as a doctor. (Interrupted by Dr. Harrison for correction.) I understood him to say that we ought not to interfere at all with the uterus after the birth of the child even if some infection occurs. Ever since I have been practicing I have done contrary to what I was taught. I never wait longer than thirty minutes after the birth of the child for the expulsion of the placenta. If after that time the placenta has not come, I introduce my hand and a syringe filled with a 2 per cent. solution of creolin or a 1-2000 solution of bichloride of mercury; and my hand doesn't come out until I bring everything out with it. And I have never had a case of puerperal infection if I was there when the child was born.

DR. EDWARD MCGUIRE, *in conclusion*: I was forced to pass over the prophylactic treatment of this condition with only a passing remark because of lack of time; but the principal points to

be observed are these: (1) Don't make any more vaginal examinations than are absolutely necessary; (2) secure a firm contraction of the uterus. As to the intra-vaginal douche, I cannot agree with Dr. Lankford in regard to its use; for, by its use the antiseptic action of the vaginal secretions is reduced. There is no reason why you should douche out the vagina, and it is a very harmful procedure. As to the dressing, it has been brought out by various writers, and is a good point. I don't agree with Dr. Harrison, that the intra-uterine douche should never be used. In case you have infecting material present, it should be removed by the intra-uterine douche. Streptococcus infection, however, should be left alone. If after the examination you come to the conclusion that it is a streptococcus infection, wash out the uterus at once, and then leave it alone, and resort to general treatment. I believe interference in these cases has caused the death of numbers of women, and the opinion of conservative men is absolutely against any local treatment. My whole object in this paper was to bring out the harmful effect of intra-uterine douches or treatment unless specifically indicated.

THE CLINICIAN AND THE HEMATOLOGIST.

By B. M. RANDOLPH, JR., M. D., *Philadelphia, Pa.*,

Dean of Philadelphia Polyclinic and College for Graduates in Medicine; Director of the Polyclinic Laboratories.

Perhaps no subject has been so abundantly discussed during the past year as the value of blood examination to surgery, and the discussion has too often degenerated into a sort of personal controversy between the surgeon and hematologist, with no little mutual recrimination. It has had, however, one advantage in that it has finally settled all argument as to the diagnosis of the presence of pus by the leucocyte count. It was formerly claimed that the presence of pus was invariably accompanied by leucocytosis, and though this claim has long since been abandoned by those acquainted with the subject, the idea has been so firmly lodged in the minds of the general medical profession that it is still the principal point on which the discussions are based.

While it is well known that ordinarily the presence of pus will be accompanied by an increase of leucocytes in the peripheral blood,

every surgeon of much experience can cite cases where a normal or diminished number of leucocytes are present, and where a subsequent operation has revealed the presence of pus. Some surgeons have claimed that the hematologist has in such cases made an incorrect diagnosis; and where the latter has accompanied the report by a diagnostic opinion, such a claim is unquestionably justified. The evidence obtained by the presence of a marked leucocytosis in such cases is very valuable, but conclusions cannot be drawn from a negative result.

There are several things which may modify the tendency of a suppurative focus to produce a leucocytosis. The human organism is not an instrument of precision made according to a fixed standard like a corrected thermometer; and this fact, as well as variations in the intensity of the infection, is to be taken into consideration. If the patient's resisting power is strong, the re-action to the infection, as evidenced by the leucocytosis, is pronounced, and proportionately less as the resisting power is weak. Again, the infection may be so intense and overwhelming as to prostrate the patient before the re-actionary forces can get into play. A parallel to this is the clinical picture presented by those fulminating cases of meningitis, which seem to strike the patient down as if by a blow. Again, in abscesses of long standing, well-walled off and permitting little or no absorption of toxic material, there is no occasion for leucocytosis, though it may have existed earlier in the disease. Further, though the normal number of leucocytes in the peripheral blood of a healthy individual ranges from 5,000 to 10,000 per cubic millimeter, numbers of persons have been found, apparently in perfect health, whose leucocyte count was persistently as low as 3,000 to 4,000. As we have only limited opportunity of studying the blood of any but diseased persons, there is probably a considerable number of people having normally a lower number of leucocytes than what is considered the average. It will be seen at once that what would be considered a normal number of leucocytes would in such persons constitute a very decided leucocytosis.

A recent work on the blood by Dr. J. C. Da Costa, Jr., summarizes the discussion of the question as follows: "The presence of leucocytosis, especially if associated with hyperinosis" (increase of fibrin) "and a positive iodine reaction, is *suggestive of abscess rather than other lesions*" (italics the writer's). An absence of

one or all these signs, on the other hand, is not sufficient to exclude pus."

There are very few diseases where even an exhaustive examination of the blood can absolutely establish a diagnosis—malaria, leukemia, and, generally, pernicious anemia and chlorosis being the most conspicuous instances. But it is of absolute value in differentiating many affections, and an invaluable aid in studying the progress of numerous diseases, and hence in prognosis. There are comparatively few affections where a careful and intelligent study of the blood may not throw some light on the case. The value of its results are quite as decided as those obtained by examination of the urine, and its range of usefulness much wider. It requires skill, care and time, but an exhaustive examination of the urine requires quite as much. Hematology is a field where there is much to be learned, and, perhaps, some things to be unlearned. It has shed much light on the study of disease, and promises much more. One inexperienced in studying the histology of the blood would be surprised to know how much can be gathered from simply observing a slide of fresh blood, independent of counting cells, estimating hemoglobin, or differential staining of the corpuscles.

Those who have looked to the blood examination for immediate and exact information in certain critical surgical cases have been disappointed. Those who are looking for a sort of "diagnosis made easy" have also been disappointed. Acknowledging, as we must, the greater accuracy in studying disease furnished by it, it is not likely that this or anything else in the way of clinical laboratory methods will ever lessen the clinician's need of highly trained powers of observation, or relieve him of the responsibility of passing judgment on doubtful cases.

The value of a thorough eliminant is all important in the successful treatment of grip, hence Tongaline is the ideal remedial agent, having the anodyne action of tonga, the antispasmodic action of cimicifuga, the anti-rheumatic and anti-fermentative action of salicylic acid, the diaphoretic action of pilocarpin and the narcotic, diuretic and cathartic action of colchicin.

TREATMENT OF FRACTURE OF THE HUMERUS WITHOUT THE USE OF COAPTATION SPLINTS.*

By C. F. RINKER, M. D., Upperville, Va.

In presenting this paper, it is not my purpose to lay claim to, nor to convey the idea of originality, for to Dr. A. M. Phelps, of New York, that credit is due.

In 1896, at a meeting of the faculty of the Post-Graduate Medical College in New York, he delivered a lecture upon "The Treatment of Fracture of Long Bones Without the Use of Coaptation Splints."

After hearing his argument (which was hotly contested by other eminent physicians present), I was so favorably impressed with the practicability of his ideas that I determined to test his method of treatment at the first opportunity. This presented itself July 8, 1898.

A boy fifteen years of age was caught under an overturned ox-cart and dragged some distance. In addition to several severe scalp wounds, he sustained a fracture of the upper third of the *humerus*. The arm was much swollen, and the soft parts badly lacerated over the seat of fracture. The sand and dirt were ground down into the tissues so deep that I found it impossible, after thorough irrigation, to dislodge the foreign substances. It was necessary, therefore, to adopt such dressings as would allow treatment of the contused and lacerated soft parts without disturbing the fractured bone.

Subsequently, I had a second opportunity of testing the treatment that the heading of this paper suggests. A gentleman, aged 32, was thrown from his horse, the animal falling upon his left arm, inflicting considerable injury to the soft parts, and fracturing the *humerus* about its middle.

In illustration of Dr. Phelps' method of treatment as practiced in my experience, I take a piece of straight, smooth, pine board, about one-half inch in thickness, somewhat longer than the fractured bone, and wide enough to prevent interference with the circulation of the blood. This being well padded, is applied to the external surface of the arm; and, close to the *axilla*, a strong piece of adhesive plaster about 2 1-2 inches wide is placed around both splint and arm. An assistant then taking hold of the injured arm with one hand, for the purpose of making extension, grasps the lower end

of the splint with his other hand in order to make counter extension. By manipulation, I assure myself that the ends of the fracture are in apposition, and place a second piece of adhesive plaster around both arm and splint immediately above the elbow. I then apply a roller bandage, extending from the hand to the axilla. The forearm and hand should be held in front of the ensiform cartilage by means of a sling. The patient should be placed in a recumbent position on a firm mattress, where he should remain about three days, or longer, if circumstances render it necessary, during which time cold or hot applications may be constantly used to reduce inflammation and swelling.

This dressing should be worn for four weeks, the roller bandage being tightened as the swelling subsides.

In the two cases herein presented, after one week I applied a starch bandage for the purpose of rendering greater support where the patients were riding or driving. The result in both cases was perfectly satisfactory.

There is no doubt but that this simple treatment will receive but little attention from experienced practitioners, who are wedded to and have been successful in the use of some one of the many appliances in vogue for the treatment of simple fractures of long bones; but the young and progressive country physician who cannot visit his patient daily, will readily recognize the value of this method, especially when he considers the convenience it offers for the examination and dressing of the soft parts without the removal of the appliance that holds the fractured bones in position.

How often has the country physician, having conscientiously applied a permanent dressing to a recent fracture, been confronted with complications arising from suppressed circulation, thereby endangering the welfare of his patient and his own reputation?

You will note that I have not touched on the treatment of fractures of the other long bones; but it is my opinion that this method can be utilized to advantage in the treatment of fractures of all long bones, especially for the first three or four days, or until the swelling and inflammation have subsided, when, if desired, a more permanent dressing can be applied.

My valued and experienced friend, Dr. T. L. Settle, of Paris, Virginia, tells me that during the "War Between the States" he treated nine cases of gunshot fracture of the *humerus* with a somewhat similar appliance, all of which made

* Read before the Medical Society of Virginia, in session at Lynchburg, Va., November 5-7, 1901.

good recovery. He used an axillary ring made of chamois skin and stuffed with hair. This was attached to the upper end of the splint, which was made fast to the outer surface of the arm by adhesive plaster just above the elbow; after which a badanage was applied, extending from hand to axilla, thus enabling him to dress the wounds without interfering with the fractured bone.

SPORADIC TRICHINIASIS, WITH REPORT OF A CASE.*

By R. M. SLAUGHTER, M. D., Theological Seminary, Va.,
Member Medical Examining Board of Virginia, etc.

According to the number of persons attacked trichiniasis is classed as epidemic, family or sporadic. It is seen in the epidemic form when a considerable number of people are attacked after some feast or festival at which trichinous pork in some form has been partaken of. In the same way the members of a family are sometimes infected, the outbreak constituting the family variety. In both these varieties the recognition of the disease should be easy, although neither is common. Sporadic cases, however, are not so easy of recognition. On account of the rarity of the disease it is not suspected, or thought of, in the first place. In the second, as it bears a resemblance in its mildest forms to rheumatism or neuritis, and in its severe form to typhoid fever, it is apt to be mistaken for one of these.

A case of sporadic trichiniasis having recently called my attention to the subject, I have determined to make it the subject of a paper, bearing especially upon the symptomatology and diagnosis of the disease. The subject is the more interesting in view of the fact that a dozen or more cases of sporadic trichiniasis have been reported in this country in the past four years, and it is more than probable that many others have escaped recognition. It goes, therefore, without saying, that the disease is far more common than usually supposed. This view is strengthened by the statement of Osler that post-mortem and dissecting room statistics show that from 1-2 to 2 per cent. of all dead bodies contain trichinae.

It cannot be denied that our Western hogs are not infrequently infected with trichinae, and

that there is an enormous consumption of pork, often, especially among the Germans, in an uncooked or partially cooked state. It should not, then, be surprising if the disease is much more common than usually imagined.

Man is always infected by eating the raw or insufficiently cooked flesh of a hog containing encysted muscle trichinae, which can only be destroyed by a sufficiently high temperature, one of at least 190° F. being required. Taken into the stomach the parasites, freed from their capsules in process of digestion, pass into the intestines and become in three or four days sexually mature adults. It has been estimated that each female may produce several hundred young, and Leuckart is of opinion that several broods are developed in succession, and that as many as a thousand embryos may be produced by a single female. The female trichina is viviparous, producing its young already hatched. From 7 to 9 days is the time required from the ingestion of trichinous meat for the development of the brood of embryos in the intestines. These embryos, passing directly from the intestines to the voluntary muscles, entering the intermuscular septa and finally penetrating the muscle fibres, develop in about two weeks into full grown muscle trichinae, which coil themselves, become encysted and harmless. In this state they retain their vitality certainly as long as their host continues to live. It is stated by Virchow that the parasites were found encysted and alive in portions of muscle attached to a cancer removed from a patient, whose previous history proved had been affected with trichiniasis twenty-four years prior to the operation. The late Austin Flint found 29 trichina in a bit of muscle 1-12 of an inch square and 1-50 of an inch thick. This, he states, would give a little over 208,000 to the cubic inch. This shows that the muscles may be invaded by an enormous number of parasites, and easily accounts for the extreme gravity and fatality of severe cases, the disease being nothing less than an infectious myositis.

The route taken by the parasites in passing from the intestines to the muscles has never been positively determined. Some authorities hold that they pass along the connective tissue ways; others, that they are transmitted by the blood stream; others again, by the lymphatics. Embryos have been found during their wandering in the mesenteric glands, the peritoneal, and pericardial cavities. The severity of an attack of trichiniasis depends entirely upon the num-

* Read before the Medical Society of Virginia during its session at Lynchburg, Va., November 5-7, 1901.

ber of trichinæ ingested. When only a few are eaten no symptoms are caused.

Well marked cases present two distinct periods, a gastro-intestinal, and a period of general infection. The first manifests itself a few days after infected meat is eaten, and is characterized by the symptoms of gastro-intestinal disturbance—pain in the abdomen, vomiting, loss of appetite, and sometimes diarrhœa. Cases, however, are by no means alike in respect to constancy of these symptoms; in some they are absent, or so slight as to fail to attract attention; while in others they are severe, strongly resembling cholera nostrâ. A primary diarrhœa is often followed by constipation. General symptoms, such as pains in various parts of the body, general debility, and weakness are present in some cases.

The period of invasion begins between the seventh and fourteenth days, and lasts until the muscle trichinæ become encysted or until the death of the patient, if the case prove fatal. This period is characterized by several symptoms, some of which may be wanting or only slightly marked, according to the severity of the infection.

Except in very mild cases, there is fever, the thermometer registering from 102° to 106° F. at the height of the paroxysms, according to the severity of the attack. Chills occasionally occur. A myositis of greater or less severity is characterized by pain, swelling and hardness of involved muscles. These muscles are very sensitive to pressure and motion, and a position is assumed which allows the greatest relaxation. Intense dyspnœa, due to involvement of the diaphragm and intercostal muscles, occurs in severe cases, and sometimes proves fatal. Oedema is a symptom often observed, and occurs early in the face, particularly about the eyes, and later in the skin over invaded muscles of the extremities, the limbs becoming in some cases intensely swollen. Profuse and exhausting sweats are of common occurrence. Tingling and itching of the skin, and, in some cases, urticaria, have been observed. Spots resembling the rose spots of typhoid fever have been observed also. There may be involvement of the muscles of mastication and deglutition causing difficulty in chewing and swallowing. The pain caused by opening the mouth leads some patients to remark that they have lockjaw. Involvement of the muscles of the eyes causes great pain, which is referred to the eye-balls.

Appetite and nutrition are greatly disturbed,

and in severe cases the patient is nourished with great difficulty, and becomes emaciated and often anæmic. Patients usually retain consciousness, though in very severe cases there are periods of delirium and dry tongue. Bronchitis and pneumonia or pleurisy have been noted, as has also polyuria and albuminuria. The patella tendon reflex is absent in some cases. A most interesting symptom, and one of the greatest diagnostic importance, is the marked leucocytosis present, which may reach, as is stated by Osler, above 30,000. This leucocytosis is remarkable in that there is an enormous increase in the proportion of eosinophile cells. Cases have been observed in which the eosinophiles constituted from 50 to 68 per cent. of the whole number of leucocytes. Since this fact was first observed by Brown at the Johns Hopkins Hospital in 1897, it has been repeatedly confirmed by other observers, so that now it is an accepted fact that a marked eosinophilia is one of the most constant symptoms of trichiniasis. A blood count is not at all necessary either to observe this leucocytosis, as it is perfectly apparent to any one accustomed to examining stained blood smears.

It is a matter of considerable interest as to where these eosinophiles come from, as the normal proportion of these cells is only from 1-2 to 4 per cent., while that of the polymorphonuclears is from 62 to 70 per cent. (Cabot). Brown has expressed the opinion that they are formed in the muscles from the polymorphonuclears, an hypothesis in support of which several facts may be induced. The nuclei of the two forms are identical in character, and apparently transitional forms between the two have been found in the affected muscles. The writer has observed what certainly must have been a transitional form in the blood of the case here reported, as well as in the blood in cases of other affections. A fatal case is reported by Dr. Howard, of Cleveland, Ohio, in which a single examination of the blood just before death showed no eosinophiles, but in the muscular tissue examined after death they were found. It is stated by Cabot that eosinophiles are absent from or diminished in the blood in all moribund conditions.

How are we to recognize sporadic cases of trichiniasis when they occur in our practices? In answer, I should say the first essential to the recognition of a case is the bearing in mind of the possibility of its occurrence and its general symptomatology. If a suspicion of the true

nature of the disease is aroused, a confirmation is easily reached by a blood examination.

In its mild form trichiniasis is to be distinguished from muscular rheumatism and neuritis, and its severe form from typhoid fever. Other forms of myositis are so rare that they may be practically excluded from consideration. In those mild cases in which there are no gastro-intestinal symptoms, very little or no fever, and characterized only by more or less muscular weakness, stiffness and soreness, the cases which are likely to be diagnosed as rheumatism, or neuritis possibly, a blood examination is the only way of arriving at a correct diagnosis, except, of course, the excision and examination of a bit of muscle. This, however, is not absolutely sure, for where the parasites are few in number, the incised bit of muscle might not contain any.

In the severe cases, which bear a certain general resemblance in some respects to typhoid fever, the differential symptoms are the pain in and tenderness of the muscles, along with tension and swelling, the œdema especially about the eyes, and shortness of breath. These symptoms should suggest a blood examination. When possible, a bit of muscle may be examined. In the earlier periods of the disease the parasites may be found in bowel discharges. It is best to examine particles of mucus passed after a thorough unloading of the bowels by an active cathartic. It is recommended that the discharges be spread on a glass plate or dark background and examined with a low power lens, when the trichinae appear as small, glistening, silvery threads. In their adult form the females measure from 3 to 4 m.m. (about 1-8 of an inch) in length, and the males about 1.5 m.m. (about 1-18 of an inch), and the male has two little pointed projections from the hinder end. In both the head end is slenderer than the tail end.

As regards prognosis, it is, of course, not by any means true that trichiniasis is invariably fatal, as is generally believed by the laity. The mortality in different epidemics has varied from 1 to 30 per cent. Osler states that of the 456 cases reported in this country 122 (or 26 per cent.) proved fatal. The prognosis depends upon the number of trichinae taken into the stomach in the meat eaten. Early diarrhoea and moderately intense gastro-intestinal symptoms are more favorable than constipation and severe gastro-intestinal disturbance. In children attacks are generally milder.

The case I have to report, which illustrates, with the exception of those of involvement of the

diaphragm, all the salient symptoms of the disease, is as follows:

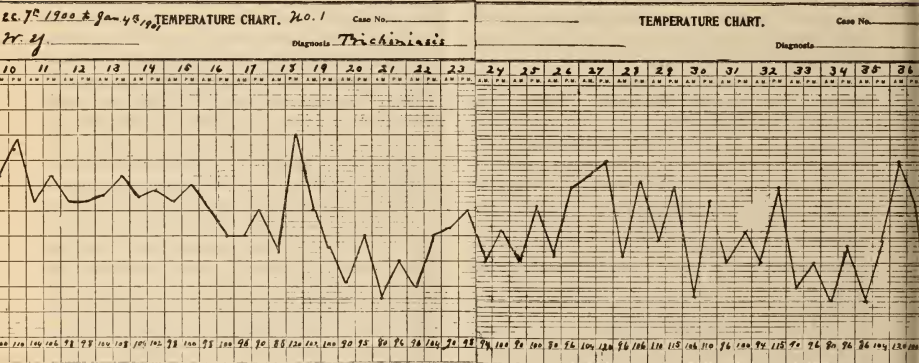
W. Y. White, aged 27, a brakeman on one of the C. & O. trains running from Clifton Forge to Washington, was taken sick in the latter part of November, 1900, and returned to his home in Alexandria county. His first symptoms were those characteristic of the gastro-intestinal period—pain in abdomen, vomiting and diarrhoea. These symptoms were so severe as to force him to give up his work and return home. On reaching home a good dose of castor oil was given him, and I have little doubt that this was instrumental in saving his life, as in all probability it removed from the bowels a large number of trichinae. Enough were left to cause an attack quite as severe as was compatible with recovery. On the 2d of December the patient had a severe chill, and took to his bed, and Dr. L. E. Gott (of Falls Church, Va.) assumed charge of the case. The doctor made a provisional diagnosis of typhoid fever, which diagnosis was concurred in somewhat later by a Washington physician. We have no record of the case until December 7th, from which date until January 4, 1901, we have a fairly complete record.

Maximum temperature on December 7th was 104.8°F. On the 9th, the patient was quite delirious all day, though his temperature did not go above 102°. On the 10th he complained of pain in the eyes, the temperature reaching 103.4°. On the 12th the patient was wildly delirious, and there was very severe pain in the right arm and retention of urine. Use of catheter was begun this day, and had to be continued for the next ten days. On the 15th the temperature rose to 105° at 6 P. M., the highest recorded. There was very severe pain in the back and left leg and in the eyes, and the leg was greatly swollen. The patient now assumed the characteristic attitude with the limbs flexed to relax the affected muscles. On the 21st there was great thirst, and a large quantity of water consumed. About this time Dr. Gott became dissatisfied with the diagnosis and the condition of his patient, and asked me to see the case with him. This I did for the first time on the 21st, and after a careful examination, it seemed clear to me that the case was different from anything I had ever seen before. It did not seem to me to be typhoid fever, but I was unprepared to say what it might be. The idea of trichiniasis did not occur to me during the visit. As a matter of routine, however, I made some blood smears for examination. The moment these were ex-

amined I was struck with the enormous number of leucocytes and the large proportion of eosinophiles present. Many of the leucocytes appeared to be a transitional form between polymorphonuclears and eosinophiles. This is a type of leucocyte that I have very rarely seen, although every year I make a large number of blood examinations. Being fortunately familiar with the literature of eosinophilia in trichiniasis, the examination of this blood gave an instant clue to correct diagnosis. An analysis of history, symptoms, and condition of the patient confirmed me in the opinion that the case was one of sporadic trichiniasis, and in this opinion his attendant readily concurred. Some days later I examined some feces from the case, but only succeeded in finding one parasite, which

corresponded in appearance to the descriptions and pictures of an adult male trichina.

When I examined the patient on the 21st he presented the appearance of a desperately ill man. The intellect was clouded, and there was intense nervousness, the nervous system seeming to be under an intense strain. The muscles of the trunk and limbs were intensely tender to the touch, and felt hard and swollen, and there was some oedema of the skin of the legs. He lay upon his back with arms and legs flexed, and would cry out with pain if touched or moved. On the 26th the mind was much clouded, and there was great difficulty in getting the patient to swallow. The pain in the legs was still severe, but the arms were better. This mental confusion continued for several days, the patient



being in an hysteria-like condition and talking wildly. About this time his appetite, poor from the beginning, became so bad as to amount to a loathing of nourishment, and it was difficult to get him to take sufficient to preserve life.

The characteristic sweats, too, now put in their appearance, and were profuse and lasting. On the night of the 30th the sweating continued all night long, the clothing having to be continually changed and heat applied and free stimulation resorted to, to prevent collapse. The tongue was dry and brown, and the whole condition bore indications of an extreme toxæmia.

On January 1, 1901, the legs were better, but still sore, and there were darting, burning pains in the back and groin and jaws, which the patient calls lockjaw. He was still perspiring freely, but the mind was clear.

From this time on there is nothing special to record, as the case progressed slowly to recovery; the greatest difficulty in it being the continued repugnance to food. The whole duration of the case was about two months. Some of the muscles are, I understand, still swollen and quite hard.

In the accompanying charts the maximum and minimum daily temperatures are shown in No. 1, from the 10th to the 37th day, and in No. 2, the variations of temperature in each 24 hours, from the 26th to 38th day.

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Pretty Near Right.—School Examiner: "What is the meaning of false doctrine?" Schoolboy: "Please, sir, it's when the doctor gives the wrong stuff to people who are sick.—*Tit-Bits*."

Nervous Specialist Needed.—He: "You know, if you worry about every little thing, it's bound to affect your health." His wife: "Yes, I know. That's one of the things I worry about."

ABNORMALLY SMALL MEATUS URINARIUS. IMPORTANT BEARING IN GENITO-URINARY DISEASES—OPERATION.*

By W. H. PRIOLEAU, Washington, D. C.

The meatus urinarius or anterior urethral opening in the glans penis, varies in size in different individuals, and is in no way indicative of the calibre of the canal which connects it with the bladder. A meatus may be congenitally small, or may become so from injury or disease.

A meatal chancroid, in healing, may by its scar tissue cause a partial occlusion of the opening, but a chancre at the meatus never produces this result, as it leaves no scar; providing, of course, that no cauterizants have been applied to it.

The meatus is subject to deformities in consequence of traumatism. In this connection I may quote my friend and former chief, Valentine,[†] who calls attention to the injuries found in consequence of ritual circumcision by the Mohammedans, Jews, and a number of savage tribes. The lips of the meatus may be pinched or cut off with the foreskin, and meatus lacerated in efforts to tear open an adherent prepuce. The former produces stenosis; the latter gross deformity.

A case mentioned in the same book, referred to us for chronic gonorrhœa, had had over four-fifths of his glans torn off during ritual circumcision. The left side of the fossa was exposed; from the right coronary margin three fleshy projections hung.

The meatus may also be injured, and, in cicatrizing, deformed by violent attempts at instrumentation and by the passage of calculi.

It has been asserted by some authors, among others Guiteras,[‡] that stenosis of the meatus is most frequent in those circumcised in infancy. In searching the records of our office and dispensary service, I find this assumption verified in the fact that the majority of meatotomies there performed were on Jews.

Anatomically, the meatus urinarius is the opening at the end of the glans penis; but the surgical meatus, with which we have to deal in the treatment of genito-urinary diseases, is not

* Read before the South Carolina Medical Association at its Semi-Centennial Meeting, Charleston, S. C.

† *Valentine*: The Irrigation Treatment of Gonorrhœa, Its Complications and Sequellæ.—William Wood & Co., New York, 1900.

‡ *Guiteras*: A Review of the Principal Features of Urethral Stricture.—*Medical Review of Reviews*, January 25, 1899.

only the opening at the end of the glans, but the entire opening through the glans, including the posterior boundary of the fossa navicularis. This is important, for often a urethra has a large anatomical meatus, but a small surgical meatus, due to a tight posterior boundary of the fossa navicularis.

This is important, for often a urethra has a large anatomical meatus but a small surgical meatus, due to a tight posterior boundary of the fossa navicularis.

As will be seen later on, in a description of the operation of meatotomy, stress is laid on what has been called the surgical meatus, and justly so, I think.

One whose urinary apparatus is in apparently normal condition rarely knows whether his meatus is large or small. Only when a urethritis is set up or some inflammatory condition, due to a small meatus, makes itself known, does he realize the fact that his meatus is abnormally small—unfortunately, often too late for surgical interference to be of prompt benefit. If a man with a small meatus be so unfortunate as to escape gonorrhœal urethritis, he will in all probability not know of his deformity until an enlarged prostate gland gives trouble. Observation has led me to the belief that some cases of enlargement of the prostate, in old men, can be traced to a tight meatus as the first cause. Although this is not so held by other writers, I deem it just as competent to cause prostatic engorgement as coarctation of any part of the urethra.

There is an intimate relationship between the glans penis and prostate; often do we experience difficulty in persuading a patient that the pain at the head of the penis, of which he complains, is not really due to any disease in the glans itself, but is reflex from the prostate.

Why a tight meatus should produce engorgement, with following inflammation or hypertrophy of the prostate gland, is easily explained. The bladder being distended with urine endeavors to empty itself; in so doing, it forces a stream through a canal which has an opening much smaller than the calibre of the canal itself. Naturally the urine does not pass away as rapidly as it should, and the urethra in consequence is distended from the bladder to the meatus. With a bulged urethra, the bladder, still endeavoring to expel its contents, calls in the aid of abdominal pressure with consequent engorgement of the pelvic viscera. That very vascular organ, the prostate gland, also be-

comes engorged, and this engorgement, congestion, if you will, in time becomes chronic, with attendant hyperplasia.

In an aggravated case the mucous membrane of the urethra may become torn, and, as it heals, form a stricture. This in the absence of a history of urethritis may be deemed a congenital stricture, but in reality it is not congenital, since it developed after birth, and was not present at birth.

Thus a prematurely enlarged prostate and stricture, when occurring in a patient never having had urethral disease of any kind, may be due to a small meatus, enlarged prostate and stricture being the usual complications, which, however, are beyond the scope of the present paper.

When gonorrhœal urethritis occurs in a patient having a small meatus, a condition exists, which, if not promptly relieved, will surely produce complications of a most serious nature.

It is not advisable to perform meatotomy while active inflammation exists; it is better, first, to treat the disease by irrigations until the discharge has sufficiently diminished to warrant an operation.

Among the many complications of gonorrhœal urethritis, as a result of a small meatus, may be mentioned periurethral abscess, epithelial denudation, invasion of the crypts and follicles, posterior urethritis, chronic urethritis, epididymitis, orchitis, prostatitis and seminal vesiculitis. It is palpable how these, according to their character and location, may cause stricture, cystitis, pyelitis, pyelo-nephritis, and consequent systematic invasion. Why any or all of these conditions should result from a small meatus is evident when we consider that the specific discharge, which should pass freely from the meatus, is prevented from so doing because the outlet is too small to carry away the pus as fast as it is formed. The discharge not being removed travels backward, invades the urethra and its adnexa, causing specific inflammation wherever its microbes find a culture medium or whither they are carried by the sanguineous or lymphatic circulation.

In chronic urethritis there is usually a lesion discoverable somewhere in the canal; now, if the meatus be too small to admit the passage of the proper sized instrument for the treatment of this lesion, then it ought to be enlarged. It is not uncommon to see a gleet discharge disappear entirely after a meatotomy, showing that retained secretions had kept up the local irrita-

tion. When necessary, it is advisable to perform meatotomy before beginning the treatment of a case of chronic urethritis; by doing this the cure will be hastened, and the patient have less suffering in passing the instruments.

In a number of cases a small, even a very minute, pin-point meatus will prove amenable to gradual dilatations. The treatment for such a tight meatus is self-evident. In other cases the meatus and its corresponding posterior boundary of the fossa, or either, will be found rigid and firmly undilatable. In this condition meatotomy is clearly indicated.

A number of meatotomy knives, scissors and meatotomes caches have been devised for this purpose. Some are exceedingly ingenious, but observation and study lead me to the conviction that even in so small an operation the surgical principles are best obtained by the simplest instrumentarium.

The Valentine method of doing a meatotomy is the one which experience has caused me to adopt. Its simplicity commends it as does the case with which asepsis of the instrument is obtained. It is painless, can be done in a few seconds, and does not confine the patient to the house. It is as follows: The glans penis and meatus are first cleansed with soap and water, and with bichloride of mercury, 1-2000 solution. Then cotton wrapped on a probe and soaked in 2 per cent. solution of cocaine, is passed into the surgical meatus to just beyond the posterior boundary of the fossa navicularis. The penis is then turned frænum side up and ethyl chloride sprayed at the point where the frænum joins the meatus. Next a drop of Schleich solution No. 2, according to the directions given by Schleich* in his book on infiltration anaesthesia, is injected at the frozen point—continuing, these injections are carried along the frænum and deep into the glans penis. The object is to anaesthetize only that part which is to be cut.

The applicator with cotton is now removed, and a curved-pointed bistouri passed into the canal, the back along its roof, letting the point reach just beyond the posterior boundary of the surgical meatus.

The penis still being held frænum upward, the handle of the knife is bent backward to approach the dorsum of the penis. While so doing the posterior boundary of the fossa is picked up on the point of the knife. Then, crowding the glans down with the handle of the instru-

ment, it is held as nearly parallel as possible to the urethra and thrust forward in the mesian line. In so doing its point is directed through the centre of the frænum about half way from its insertion at the lower commissure of the meatus. By carrying the knife forward, the tissues of the glans are split to four or five sizes (sizes F) larger than it is intended to make the meatus. This excess will soon disappear with the contraction that follows when the cut has healed. On removing the knife, insert first the small Piffard meatometre; if it enter easily, then insert the large one up to the number desired. Should the plugs meet with any obstruction on being inserted, then remove the obstruction at once by cutting, and pass in the meatometre again.

After all obstructions have been removed, insert the plug, and allow it to remain for fifteen minutes, then remove it. When the bleeding has stopped, cleanse the penis and dress the wound as follows: Pass a small strip of iodiform gauze, dipped in some sterilized lubricant, through the surgical meatus and well down between the edges of the cut. Over the head of the penis put a wad of absorbent cotton and bandage.

While dressing the wound, tell your patient to follow you, and instruct him as you proceed. He must dress it after each act of urination, just as he saw you do it.

Caution him to cleanliness, and also tell him that the wound will bleed a little after each removal of the gauze and subsequent urination.

The patient should report daily for the next three days, then every other day, and so on until the cut has healed, so that the Piffard plug may be passed and the edges of the cut may be kept from adhering.

When entirely healed, the surgical meatus should be in accord with the size of the patient's urethra. It may seem, Mr. Chairman and colleagues, that I have taken up your time with a small matter. In doing so, I have simply followed the man whose success is due to interminable and indefatigable attention to details and apparent trivialities. It is upon these that all professional advancement is built, and especially to beginners in genito-urinary work do I heartily commend them.

If I, then, have shown my colleagues how easy it is to correctly perform meatotomy, and brought due appreciation to some of the merest outlines of its indications, I shall have accomplished my self-imposed task.

*Schleich: Schmerzlose Operationem.—Springer, Berlin, 1894.

Editorial.

Correction.

Dr. T. H. Toynbee Wight, Roanoke, Va., whose name appears among the list of doctors who passed successfully the examinations before the Medical Examining Board of Virginia during its session held December 16-19, 1901, at Richmond, Va., was erroneously reported as a graduate of "Howard University, 1901." The college of his graduation was *Harvard University*, 1901.

Medical and Chirurgical Society of Richmond, Va.

A number of colored medical men met at the office of Dr. S. G. Jones, No. 908 N. Third street, on Wednesday evening, February 19, 1902, and organized the Medical and Chirurgical Society of Richmond and vicinity. Invitations to all colored regular practitioners of medicine, dentistry and pharmacy in this city and Manchester were sent. The following are the officers for the ensuing year: President, Dr. R. F. Tancil; vice-president, Dr. H. L. Harris; treasurer, Dr. John Merriweather; secretary, Dr. O. B. H. Bowser; executive committee, Drs. J. M. Benson, chairman, D. A. Ferguson, S. G. Jones, J. M. Vaughan, and M. B. Jones.

Messrs. Parke, Davis & Co., Detroit, Mich.

Perhaps the largest manufacturing pharmaceutical firm in this country, if not of the world, has adopted the policy of encouraging its employees to become stockholders. The face value of each share is \$25. The present market value of each share of stock is \$70. The company, however, now proposes to issue 4,000 shares of its capital stock, permitting the oldest among its employees—especially those in important positions as managers, superintendents, and foremen—to purchase this new stock at \$55 a share. The total tangible assets of this company amount to \$3,400,000, against a capital stock of \$1,500,000, and a surplus account of \$1,000,000.

From a small beginning in the early *seenties*, the business of this firm has developed into world-wide proportions. In addition to their home offices, etc., in Detroit, it has five branch houses in the United States—New York, Chicago, Kansas City, Baltimore and New Orleans—beside extensive manufacturing plants in Walk-

erville, Ont., and London, Eng., with a supplementary foreign plant at Simia, India. The company is absolute owner of the Hubel empty capsule plant, which it is now operating, as well as the U. S. Capsule plant. The new scientific laboratory, now being constructed at Detroit, and equipped at an expense of \$115,000, will be ready for occupancy by July 1, 1902. Messrs. Parke, Davis & Co. employ some 25,000. The company has in its employment about 2,500 workmen, 1,700 of whom are at Detroit.

Newspaper Medicine.—Mrs. Thomas Shelton was operated on this morning at the home of her son, Alfred, for necrosis of the bone, by Dr. Herrick, assisted by Drs. Burke and Coutant. A piece of dead bone was removed from the tibia of the right eye.—*Country Newspaper*.

Thought He Was Comparatively Safe.—A colored man at Pittsburg, Kan., thus relates his experience with small-pox: "I have been exposed to it several times, was 'sasinated' three times, and they 'canteened' me for three weeks, but Dr. Johnson says if I have small-pox at all it will only be in a light case of 'celluloid.'"—*Western Medical Journal*.

Acologisms.—The physician whose specialty is obesity lives off the fat of the land.

Three-fourths of the doctors are overworked charity organizations.

The physician who prescribes without any definite object usually attains it.—*The Acologist*.

A Greeting to the New Graduate.—When Dr. Clark, professor of medicine in the College of Physicians and Surgeons, was in his prime, a member of the graduating class called on him for the purpose of having his chest examined. Having undergone the examination and received assurance that his lungs were sound, the young man asked the Doctor what his fee was. "Oh, nothing, sir; nothing at all." "Why, how is that?" "Well, you know, dog doesn't eat dog." "What do you mean, sir?" "Simply that one doctor doesn't charge another doctor for professional services." "But, you know, Professor, I'm not a doctor; I'm only a student." "Very well, dog doesn't eat pup."—*N. Y. Med. Journal*.

Original Communications.**FOREIGN BODIES IN THE EARS.***

By O. A. M. McKIMMIE, M. D., Washington, D. C.

A discussion of foreign bodies in the ear should include not only those introduced from without, but also those substances produced by the economy, which are not normal, and act as foreign bodies.

Bodies coming from without may be animate or inanimate.

Under *animate* bodies we include larvæ, maggots, insects, and almost any living thing whose size permits its introduction into the ear canal.

Many classifications of *inanimate foreign bodies* have been devised, but it will be sufficient for our purpose if we divide them into (a) those which are hard and unchangeable; (b) those which are friable; and (c) those liable to change in size by remaining in the ear.

hard and unchangeable; (b) those which are friable; and (c) those liable to change in size by remaining in the ear.

Owing to the shape of the ear canal most foreign bodies do not completely block its lumen unless considerable force has been used in their introduction.

When seen by a physician the position of a foreign body is usually deep in the canal, owing to the efforts at extraction made by the patient or his friends.

Hard or unchangeable bodies, if irregular in shape, may not only block the canal, but also, by reason of corners or projections, wound it, and thus become firmly fixed. Pieces of glass, porcelain, or bodies of such friable nature are easily broken in unskilful attempts at extraction, and require special care in handling to prevent injury to the auditory canal.

Grains, beans, and the seeds of small fruits may increase in size by absorption of fluids in the canal and cause grave symptoms.

* Read before the Medical and Surgical Society of the District of Columbia, January 2, 1902.

Normally, there is no fluid in the external ear, and such change in size takes place only after unsuccessful syringing or after the foreign body has been in place long enough to cause inflammation and exudation.

Small bodies, which can be removed by causing the patient to assume a suitable position, hardly need mention, and it is not necessary to enumerate the objects which may be found in the ear, as almost every conceivable body of suitable size has been introduced.

In many cases there are no symptoms of the presence of a foreign body except a diminution of hearing on the affected side; and if the canal be not entirely blocked, even this may be wanting. Occasionally the interference with the entrance and exit of sound waves gives rise to tinnitus or noises in the head. In some cases there is a sensation of itching or other disagreeable feeling in the ear; and, if the presence of the foreign body be prolonged, pain. Among reflex disturbances, perhaps the most common is a sensation of tickling in the pharynx. Ear-cough is also encountered. Increased salivary secretion and vomiting have been reported, whose cause was the presence of foreign body in the ear. In many cases there are no symptoms present.

Large bodies, or bodies increasing by absorption of moisture, may, by continuous pressure on the unyielding bony walls of the canal, or on the tympanic membrane itself, cause pain extending to the whole side of the head. Bodies lodged in the middle ear give rise to vertigo and tinnitus by pressure transmitted to the foot-plate of the stapes, causing increase of intralabyrinthine pressure.

In the cases showing pain, we find that after the foreign body has been retained some time, there occurs marked swelling of the canal, so that it may be entirely closed external to the foreign body. With the onset of this inflammatory condition there may be general malaise and fever; and if the condition be not promptly

remedied there occurs a serous exudate, and finally suppuration. This inflammation is both external to, and internal to the foreign body, and the retained pus may cause ulceration and rupture of the tympanic membrane and middle ear infection. Such cases terminate either in chronic suppuration, which may go on for years, or in the spread of the disease to the accessory cavities of the ear, causing mastoiditis, facial paralysis, meningitis, sinus thrombosis, or abscess of the brain. One case has been reported in which death was due to so simple a thing as a wad of paper in the ear.

The ear may become tolerant of a foreign body; but we should not allow ourselves to think that such a tolerance is a desideratum. An accidental blow or fall, or even picking at the ear, may so change the position of a foreign body that serious disease results. Occasionally spontaneous exit of a foreign body occurs, as in the case of living insects, or after prolonged suppuration has enlarged the canal by destruction of tissue. Several cases are on record of persistent nervous disease, neuralgia, epilepsy and intractable cough, caused by the presence of foreign bodies in the ear, and cured by their removal.

Firmly fixed masses of inspissated cerumen, epithelial exfoliations, cholesteatomata, and dried crusts of mucus may cause any or all of the symptoms of bodies introduced from without and demand removal. Neither the history of introduction nor the presence of the symptoms detailed should be sufficient to cause us to make efforts to extract a foreign body from the ear.

A number of cases are reported in which serious damage was done in fruitless efforts to remove a supposed foreign body. The only safe method of diagnosis is examination with head mirror and speculum to locate the body, and, if necessary, use of the aural probe, under proper illumination, to determine its consistence.

If the body does not entirely fill the lumen of the auditory canal, and is movable, the safest method of removal is by the use of injections of warm water. In the case of animate bodies this is usually successful. This procedure is contra-indicated if there be no free space about any portion of the offending body, as in such case syringing can only tend to push the body further in.

If the use of injections is not successful, we must use some instrument. In this connection I wish to say most emphatically that no forceps should ever be used, unless the foreign body has

an edge, projecting process or shank, which can be firmly seized, for when the blades of a pair of forceps are brought together they act as inclined planes, and tend to force the body deeper into the ear.

Perhaps the most universally applicable instrument is the simple blunt hook, which can be introduced on the flat and the point turned so as to come behind the body. In making traction, a steady hand is needed, as it is quite an easy matter to let the point slip and thus lacerate the canal. Friable bodies especially require great care in handling to prevent breaking them, and thus cause multiple lacerations. Quire's foreign body extractor, or artificial finger, is a useful instrument in those cases in which we find a large canal; it can be introduced as a straight instrument, and then by pressure on its "U"-shaped spring converted into a traction hook. However, its movable arm is usually too long to permit its use, especially in large ears, without danger of tearing the walls of the canal. The blunt ring curette is often of great assistance when there is room to insinuate it above or below the offending body, and to use it as a lever.

In the case of bodies which increase in size by absorption, when injections are futile, and ordinary instrumental methods not successful, we may succeed by splitting the foreign body and extracting it piece-meal.

Sometimes, when no larger instrument can be used, the wire snare is successful. Again, the furuncle knife, with its short triangular blade projecting from a slender shaft, may be introduced on the flat and then turned so that its point, coming behind the foreign body, is made to embed itself, and then it serves as a tractor.

Pins, needles, and such sharp bodies, may be lodged in the ear in such a way that both ends are embedded. In such cases, if one end can be freed removal is easy with any convenient forceps. When one end cannot be set free a difficult problem presents itself, as it becomes necessary to cut or fracture the pin or needle, and thus produce two bodies each with one end free. In the case of children, general anaesthesia is frequently required.

When none of the methods mentioned is successful, the question of further procedure is a grave one, and must be determined by the individual operator. There are many who advise leaving the foreign body in situ so long as no symptoms indicating danger supervene, and many others advise immediate resort to a radical operation.

This operation consists in making an incision behind the ear, down to and through the peritoneum, following the line of attachment of the auricle. The cartilaginous portion of the canal and the corresponding periosteum are then displaced forwards, and a transverse cut through these tissues made. If the offending body cannot then be easily removed, or if it be in the middle ear, part of the body wall is to be chiselled away and sufficient room thus gained.

The after treatment consists in replacement and suturing of the auricle, and the use of a suitable sized rubber drainage tube or gauze packing to keep the soft parts in contact with the bone. If there has been no suppuration the dressing need not be changed for four or five days.

One very old method of extracting foreign bodies from the ear, which I have omitted to mention heretofore, was discarded for many years, and then revived by Lowenberg, of Paris, in 1872. It consists in introducing a bit of gauze, the end of which is soaked in some adhesive substance, so that it may stick to the foreign body, and when perfectly adherent, may serve to drag out the body. This method seems worthy of trial, and collodium, if used quickly, would furnish a suitable adhesive.

Before closing this brief resume of this portion of our subject, some general remarks seem in order.

Every body introduced into the ear is a potential, if not an active, cause of danger, but this does not necessarily mean that immediate extraction should be performed. Time to procure the necessary implements for diagnosis and treatment should be taken before undertaking even the simplest method of extraction, and every attempt at extraction should be made under perfect illumination.

Numerous cases are on record of destruction of the tympanic membrane, denudation of the bony canal, removal of all the ossicles and wounding of the internal wall of the middle ear sufficient to produce paralysis of the facial nerve by attempts made to remove foreign bodies without the sense of sight to guide the operator.

Furthermore, the anatomical position of the tympanic membrane must be kept in mind. Its upper posterior portion is more external than any other part; in other words, the external surface of the membrana tympani faces slightly downward and slightly forward, as if it were suspended from its upper posterior portion, and its lower pushed inward and rotated slightly for-

ward. This position is most marked in children.

Of the substances produced by the human organism and calling for removal from the ear, by far the most common is cerumen. Ordinarily the use of a syringe and some warm, sterile or antiseptic fluid is all that is needed for the removal of ear wax. In many cases, where the cerumenous plug completely occludes the ear canal, we save much time and much annoyance to the patient by removing some of the external portion of the mass with the blunt curette, and then syringing out the deeper portion, or by first loosening some part of the edge of the plug, so that the solution gets behind and softens and loosens it.

If we could in any way know the condition of the tympanic membrane and middle ear back of a cerumenous impaction, we could, in many cases, use simply warm water. But inasmuch as the drum membrane may have a perforation, or unduly forcible syringing may rupture an atrophied membrane, it is much safer to use either warm sterile water or some antiseptic solution, and thus avoid the danger of infection of the middle ear.

When we encounter very hard masses of wax we can greatly expedite extraction by the instillation of hydrogen peroxide. If this is not satisfactory in action, we can use some alkaline solution, introduced several times a day, and retained by a pledget of cotton to soften the mass.

The use of any solution tends to cause not only softening, but also swelling of the plug of wax, and in this way may cause pain. Every patient to whom drops are given to be put in his ear should be instructed to return promptly if pain occurs. This is important, because if a cholesteatomatous mass exists back of a thin layer of cerumen, and fills the middle ear and attic, grave and most dangerous symptoms may follow its swelling.

The presence of a plug of wax often causes an irritated condition of the skin, and even when only the syringe is used for its removal we frequently find the canal showing small bleeding points.

Occasionally we encounter an ear which, at first sight, seems obstructed by cerumen, but, on using the syringe, fails to bring away the mass. More careful examination reveals a plug, which must be removed by careful and patient use of syringe, forceps and curette, and which consists of concentric layers of exfoliated casts of the ear canal. When this mass is placed in water it

does not disintegrate, as does cerumen, but becomes easily separable into its component layers.

This condition was first described and named "keratosis obturans" by Wreden, of St. Petersburg, in 1874.

After removal of such a mass the canal is found to be red and excoriated. This disease, which tends to recur, must be regarded as a chronic dermatitis. The pressure caused by the gradual increase in diameter of these plugs is sufficient in some cases to cause neuralgic pain in and about the ear.

Patients who have had a suppurative otitis sometimes develop the condition known as cholestatoma, which consists of an epithelial proliferation, starting usually in the deeper part of the canal, and caused by the irritation and maceration from a prolonged discharge.

This condition tends to invade the middle ear, and eventually its accessory cavities. Occasionally it is so extensive as to completely fill the mastoid cells, and to demand a radical removal of the mastoid for the relief of pain or other symptoms.

Much harm may be done by the injudicious use of injections or instillations for the purpose of softening the mass. Such measures tend to produce swelling of the mass, and consequent increase of pressure, which may lead to serious brain symptoms.

These masses are best removed by the curette and syringing, care being taken to thoroughly dry the ear after such treatment.

Dried masses of pus and mucus in the middle ear or projecting into it may cause all the symptoms of a foreign body, and require removal, and it is usually necessary to soften such masses before removal can be accomplished.

After the removal of plugs of cerumen, keratosis, cholesteatoma or inspissated pus or mucus, the canal should be carefully dried and treated to a thin coating of boric acid in powder, saturated alcoholic solution or ointment, and a thin pledget of cotton placed in the outer portion of the canal, and retained for twenty-four hours. The patient should be asked to return promptly if symptoms of any kind occur.

Foreign bodies in the ear are always a source of danger, for, as noted before, some accident may so alter the position or condition as to cause dangerous symptoms.

The tendency of modern medicine is not only to cure disease, but to prevent it. On this principle we should advocate the removal of all aural foreign bodies.

There must be very few instances, indeed, in which a foreign body is without the tympanum, in which it cannot be removed by patient, skilful manipulation without recourse to radical operation. If the body has penetrated the middle ear, that very fact demands immediate removal.

1333 N street, N. W.

A Case of Suture of a Stab Wound of the Heart, With Remarks on and a Table of the Cases Previously Reported.*

By GEORGE TULLY VAUGHAN, M. D., Washington, D. C.,
Surgeon U. S. Marine Hospital Service; Major and Brigade Surgeon
U. S. V. during the War with Spain; Professor of
Surgery Georgetown University, etc.

C. W., aged 25 years, male, negro, was stabbed on the evening of October 2, 1901. On examination at the Emergency Hospital about half or three-quarters of an hour later, the patient was unconscious, but extremely restless, tossing about and talking incoherently. The extremities were cold, and no pulse was perceptible in the radial arteries. A clean-cut wound was seen in the chest 5 cm. long, extending downward and slightly outward and completely dividing the left fifth costal cartilage close to the sternum. The wound gaped so that the pericardium could be seen.

Preparation was made for immediate operation. The chest wall was hurriedly washed off with a solution of bichloride, and enough ether was given to quiet the patient's struggles. The external wound was extended longitudinally above and below, making the total length 5 cm.; the outer flap was dissected back, exposing the ribs, the costal cartilage of the fourth rib was divided, and the fourth and fifth ribs were divided with bone forceps about 7 cm. from the sternum. The muscles of the fifth intercostal space were then divided and the flap of the chest wall turned up, clearly exposing the pericardium and left pleural cavity. An opening about 5 cm. in length was seen in the pericardium and left pleura, which overlapped the pericardium, and was enlarged below to 7 1-2 cm., revealing an opening in the walls of the left ventricle close to the interventricular septum, from which the blood spurted with each contraction of the heart. The edges were

* Read before the Medical Society of Virginia during its session at Lynchburg, Va., November 5-7, 1901.

CASES OF SUTURE OF WOUNDS OF THE HEART.

Operator and Year.	Location of External Wound.	Chamber Wounded and Size of Wound.	Time of Operation After Injury.	Anæsthetic.	Result and Remarks.
1. Farina. 1896.	Just above the margin of the left 6th rib near the sternum.	R. V. ¼ in., 3 stitches.			D. 6th day; death from broncho-pneumonia.
2. Cappelen. 1896.	4th left intercostal space in mid-axillary line.	L. V. 4-5 in.	1 hour.		D. Several days. Death from pericarditis. Branch coronary artery cut.
3. Rehn. 1896.	4th left intercostal space near sternum.	R. V. 3 stitches.	Following evening.		R. Empyema.
4. Parozzani.	7th left intercostal space, mid-axillary line.	L. V. ¾ in.	5 hrs.	None.	R.
5. Parozzani.	3d left intercostal space.	L. V. 3-5 in.	½ hr.	None.	D. Death on 2d day from anæmia (?) Interventricular septum had been cut.
6. Fummi. 1898.	Under left nipple.	Apex. Cavity not opened. 1 stitch.	Several hrs.		R. Empyema.
7. Ninni. 1898.	5th left intercostal space.	L. V. 3 stitches.	Quickly.	None.	D. Death on table.
8. Parlavecchio.	5th left intercostal space.	L. V. 1½ in. apex.	8 hrs.	Chloroform.	R.
9. Giordano. 1898.	2d left intercostal space.	L. A. 4-5 in. 4 stitches.	½ hr.	None.	D. Death on 19th day from empyema; abscesses, right lung.
10. Nicolai. 1899.	4th left intercostal space, midway between margin of sternum and nipple.	R. V.	1½ hrs.	Yes.	D. Death after 12 hours.
11. Tuzzi.	4th left intercostal space.	2 wounds, 1 non-penetrating.		None.	D. Death on 22d day from empyema. Pericarditis.
12. Longo.	5th intercostal space (left), 2-5 in. internal to nipple.	L. V. 3 stitches.	At once.	None.	D. Death in 15 minutes.
13. Ramoni.	At 3d left cartilage, 4-5 in. from sternum.	R. V. 2 wounds, 1 non-penetrating. 4 stitches.		None.	R.
14. Marion. 1899.	Shot through breast.	Sutures.			D.
15. Rosa. 1899.	5th intercostal space.	L. V. 3-5 in. Not certain it penetrated ventricle.		None.	R.
16. Horodynski. 1899.		R. V. 1½ c. m. long.			D.
17. Maliszewski. 1899.					D.

CASES OF SUTURE OF WOUNDS OF THE HEART.—Con.

Operator and Year.	Location of External Wound.	Chamber Wounded and Size of Wound.	Time of Operation After Injury.	Anæsthetic.	Result and Remarks.
18. Maliszewski. 1899.					D.
19. Bufnoir. 1899.	6th left intercostal space.	R. V. Gunshot, 22 calibre.			D. Necropsy showed perforation of ventricle and the anterior opening only had been sutured.
20. Pagenstecher. 1899.	4th left intercostal space beneath nipple.	L. V. Near apex; 2 stitches.	16 hrs.	None.	R.
21. Nanu. 1900.	3d left intercostal space, 4 c. m. from edge of sternum.	R. V. 2 c. m long. 2 interrupted catgut sutures.			D. On 5th day from infection of pericardium and pleura.
22. Maselli. 1900.	Below and internal to left nipple, cutting 6th rib.	L. V. Near apex. 2 stitches.	1½ hrs.		D. In 12 hrs.
23. Fontan. 1900.	Six wounds with scissors between 3d and 7th ribs, in cardiac region.	L. V. 12 m. m. long. Continuous catgut sutures. 3 stitches.	6 hrs.	Chloroform.	R.
24. Vaughan. 1901.	5th left costal cartilage divided.	L. V. 2½ c. m. long. Continuous silk sutures. 7 stitches.	¾ hr.	Ether.	D. On table from hemorrhage about completion of operation.

quickly pressed together and held so by a pair of hæmostats, grasping each edge until the wound was closed by a continuous suture of silk in a curved needle, making seven stitches, which did not include the endocardium. The wound in the heart was 2 1-2 cm. long, and shaped like the letter Y, with the right branch about half the length of the left. The pericardium and pleural cavities were then emptied of blood and clots, of which there must have been at least 2,000 c. c., and the pericardium closed with continuous silk sutures. About this time the heart stopped, and neither artificial respiration nor squeezing the heart was able to start it again. The operation lasted less than fifteen minutes. Death was caused by hemorrhage. There was not time to inject salt solution into the veins, though this was intended, as the most important indication was to stop the hemorrhage, and all efforts were devoted to that end.

To the cases reported in the excellent article by L. L. Hill, "Wounds of the Heart; a Report of Seventeen Cases of Heart Suture" (*Medical Record*, Dec. 15, 1900), I have added my case and six others, and have arranged them in tabular form, giving as far as the information

could be obtained from the reports, the name of the operator, year of the operation or report, the situation of the external wound, the chamber of the heart wounded, size of the wound in the heart, time of operation after injury, whether anæsthesia was used, result and remarks.

STUDY OF THE TABLE.

A study of this table of twenty-four cases sutured gives the following results:

Eight recoveries, 16 deaths; mortality 66.6 per cent.

Of the chambers wounded, the left auricle . . . 1
Left ventricle 11
Right ventricle 7
Not given 5

From this it would seem that the ventricles are far more likely to be wounded than the auricles, in the proportion of at least 75 per cent.; in fact, only one case of wound of the auricle is given in this list, and that the left ventricle is the most frequently wounded of all the chambers. Of those who recovered, 2 were wounded in the right ventricle and 6 in the left ventricle (including the apex), 1 possibly non-penetrating, and 1 in the apex, certainly non-penetrating.

MORTALITY.

If we subtract from the recoveries the two cases, in one of which the cavity was certainly not opened, and the other in which the cavity was probably not opened—if so, the opening must have been very small (see Table Nos. 6 and 15)—we find the mortality of *penetrating wounds* of the heart, as shown by this table, to be 72.7 per cent.

TIME OF OPERATION AFTER INJURY IN RELATION TO PROGNOSIS.

If we study the time which elapsed after the receipt of the wound before the operation, we will be struck with the difference in the fatal and non-fatal cases; thus in the former the minimum time was "immediately," and the maximum 1 1-2 hours; time not given in 8 cases; while of recoveries the minimum time was 5 hours, and the maximum over 24 hours; time not given in 2 cases. The obvious inference is that if the patient live after receiving the wound five hours or longer before operation, his chances of recovery are much better than many operated on sooner, as the fact of living five hours without operation proves the wound to be less than the average in severity.

DANGERS.

Doubtless the greatest immediate danger is from hemorrhage; next from shock and entrance of air into the heart. Then comes the danger from pericarditis, empyema, and pneumonia. Of the 24 cases, 1 had pericarditis, 2 empyema, 2 empyema and pericarditis, 1 empyema and abscess of right lung, and 1 broncho-pneumonia—7 cases with infection, all of which were fatal, except the two cases of empyema only.

The urgency of the symptoms and the necessity for prompt and rapid action often prevent the observance of proper aseptic precautions—a fact which probably accounts for the frequency of infection.

CONCLUSIONS.

A review of these cases justifies the following conclusions:

1. The time has arrived when wounds of the heart should be operated on with as little hesitation as wounds of the brain, with the expectation, under corresponding conditions, of getting equally as good results. The mortality must inevitably be high—not from the operation, but from the injury—especially if all cases, including desperate ones, be undertaken. Selection of cases who have survived five or more hours after receiving the wound would give a good per-

centage of recoveries, but such selection is not to be recommended, as it would be unjust discrimination against the severe cases.

2. In all cases of wounds in the region of the heart, with symptoms threatening life, an exploratory operation should be done by making an osteoplastic flap by dividing the fourth and fifth costal cartilages at their attachments to the sternum, the ribs about one inch external to their attachment to the cartilage, and the muscles of the fifth intercostal space, somewhat according to the method of Roberts. This flap turned up as a door on a hinge, gives a good view of the pericardium, and can easily be enlarged upward, if more room is required.

3. While early and speedy operation is often essential to success, yet the importance of asepsis cannot be too strongly emphasized on account of the great danger and disastrous results of pericarditis and empyema. If there has been much hemorrhage a quantity of physiological salt solution, approximately equal in amount to the blood lost, should be injected into a vein while the surgeon is operating on the heart, if it has not been done sooner.

N. B.—Since writing the above five other cases of suture for wounds of the heart have been reported, as follows: Nietert, 2 cases, 1 recovery, 1 death; Watten, 1 case, recovery; Fontain, 1 case, recovery; Ninni, 1 case, death. These make the total number of cases of heart wounds sutured 29, with 11 recoveries and 18 deaths.

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Medical News.

J. P. W. Smithwick, M. D., in an article entitled "Therapeutics of Convalescence from La Grippe," says in the Southern Medical Journal: "During the past year I have made use of Angier's Petroleum Emulsion with Hypophosphites among my patients which were convalescing from la grippe. All of them improved rapidly with its use. I have noted no case in which Angier's Petroleum Emulsion caused digestive or intestinal trouble, it being, on the contrary, well borne by weak and irritable stomachs."

TREATMENT OF DELIRIUM TREMENS.*

By T. D. CROTHERS, M. D., Hartford, Conn.

Superintendent Walnut Lodge Hospital, Connecticut; Honorary Fellow Medical Society of Virginia, etc.

Delirium following the use of alcohol is rapidly increasing and becoming more prominent every year. The "delirium tremens" described in text-books is not often observed, and the type and symptomology has changed. Hallucinations and delusions referring to snakes and demons are not so common, but in their place are delusions of enemies armed with guns, the falling of walls in the building occupied by the victim, or fear of death from violence, etc.

The term "delirium tremens" (or the "D. T.'s," a popular abbreviation) is loosely applied to all forms of delirium and delusions following the use of spirits. The recent text-books separate the different forms of disease arising from the use of alcohol into the following divisions—namely, acute and chronic alcoholism; and differentiate the mental condition of these as "delusional," "melancholic," "persecutory," or "dementia."

Literally, any person using spirits continuously or at intervals to excess, may have, for a short duration, periods of delirium with delusions, also sensory disturbances.

While the active treatment of these conditions is practically the same, the prognosis and later treatment will differ widely. It is important to determine the type and form of the mental disturbance to ascertain if the delirium appeared abruptly or was preceded by signs of mental confusion, or had it been noticed that the patient was controlled by some predominant idea, made manifest by peculiar conduct.

If the delirium comes on abruptly the exciting causes are acute, and point to the formation of toxins and auto-intoxication; but if the delirium was preceded by mental changes, and transient alterations of thought and conduct becoming more fixed and settled, there is evidence of organic changes in the brain.

It is necessary to ascertain if the delirium followed directly from a long period of continuous or periodic use of spirits or was the drink period preceded by some physical or mental disturbance dating from organic disease, traumatism, or psychical shock? Did it follow acute disease, severe exhaustion, or was there some hereditary instability of the nervous system preceding the attack?

Alcohol, in these conditions, may be both a predisposing and exciting cause.

The *symptomatology* will vary with the causes. For instance, if the delirium is especially due to the spirits, there will be more hallucinations and motor disturbances, and also rapid changes with various degrees of intensity.

If the delirium follows some form of traumatism, occurring in persons accustomed to the use of spirits, the delusions will be more prominent, and refer to some tangible object, as actual relations of life.

Should the delirium follow prolonged excess in the periodical drinker, where the alcohol is abandoned before the onset of the delirium, intense hallucinations of short duration and prolonged delusions will appear, usually concentrated on one fixed idea. These latter cases are often sent to insane asylums, where recovery is delayed for weeks and months.

The *general pathology* of all these cases is vaso-motor paralysis, particularly of the blood vessels of the brain. The walls of the blood vessels are both dilated and contracted in different areas, owing to the inhibition of the vaso-motor centres, and as a result the normal flow of blood is either accelerated or retarded. The flushed face and venous congestion so frequently observed are the external symptoms of this condition.

Alcohol also acts on the blood current, altering its composition by increasing the white blood corpuscles and diminishing their movements and uniformity, and also the form of the cells. The nutrition of the nervous system is disturbed by limiting the quantity and quality of nourishment. This breaking up of the composition of the nutrient blood current favors the formation of toxins, which circulate in the blood and become the source of infection for other poisons.

In addition to this, alcohol may excite and develop some latent predisposition, thus increasing the instability of the nerve centres and favoring delirium and delusions in all forms. The poisons formed from alcohol and all other toxins are slowly eliminated, and are capable of producing both excitement and depression.

In brief, these are the conditions to be combated in the treatment of the so-called "delirium tremens" and its associated mental disturbances—namely, the vaso-motor paralysis, derangement of the nutrition, the formation of toxins, the poisoning of the blood, and the development of neuroses.

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The removal of alcohol is the first step in the treatment. But the cessation of the delirium must not be expected to follow the withdrawal of spirits; on the contrary, 24 or 48 hours after this the delirium and delusions will break out with greater intensity. The impression is created that this is due to the sudden stopping of what is called a stimulant.

Experience proves this to be wrong; the delirium will come whether alcohol is slowly or suddenly withdrawn. In some instances, the slow withdrawal of spirits, when accompanied with free elimination through the intestines and kidneys, is followed by a subsidence of the delirium. This is due entirely to the removal of the toxins, and would have progressed more rapidly if the alcohol was removed at once.

Slowly reducing the amount of spirits and giving food and narcotics to overcome supposed exhaustion is most dangerous treatment. Recovery is delayed and complications encouraged, a protracted convalescence always follows, with frequent fatal results from pneumonia or sudden inflammation.

Alcohol is always a source for the formation of toxins, which are active in producing delirium, and unless they are checked recovery is impossible.

This is only a part of the treatment, and must be followed by vigorous efforts to remove the conditions which favor the growth of these toxins and other poisons.

After the removal of the spirits, give small doses of calomel with salines until free catharsis is induced. Continue the salines every other day in decreasing doses until the delirium subsides.

The favorite salines in my practice is a combination of sulphate of magnesia and bi-tartrate of potash (2 parts of the latter to one of the former) in small doses, according to the conditions present, and particularly for its action on the kidneys.

The next in importance is hot air or hot water baths, hot packs, followed by vigorous rubbing. The old-fashioned sweat by steam from hot irons in water under a blanket is excellent.

These measures are absolutely necessary to start up free elimination through the skin. This function must be stimulated daily as long as the delirium prevails; also through convalescence, only less active. Profuse sweating is of equal value, not only by its eliminative action, but from the sedative effect of sudden drainage of toxins through the blood and sweat

glands; also by diverting nerve energy, and removing sources of infection. Frequent sponging with hot salt water is another effective sedative measure that in some instances is almost a specific.

The text-books give elaborate prescriptions of various narcotics to produce sleep, and many authors urge that sleep is the first essential to break up the delirium. This has been found to be dangerous in theory and contra-indicated in practice. The system is already depressed, and all the vital forces lowered, all working under great embarrassment from the poisons of alcohol and the toxins formed in the body, and the effort to produce chemical stupor and narcotism is attended with great peril, by increasing the toxins and diminishing the power to overcome them. Anæsthesia for surgical purposes under the most favorable conditions is dangerous; in the same way the use of narcotics in unknown states of anæsthesia due to alcohol increases the peril of collapse by adding new depressants and toxins.

Also in like manner chloral, bromides, and the coal tar derivatives are depressing and dangerous in this stage of delirium, and should not be given.

For the craze for alcohol, which follows the sudden withdrawal in some cases, strong solutions of cinchona or quassia, given every hour, will soon break up this impulse and be followed by an intense disgust for spirits.

Many authors urge that the alcoholic should be given food freely, believing that delirium is the indication of starvation, which can only be overcome by the administration of concentrated foods and condiments, such as beef tea, hot milk, and other nutrients. This is not supported by experience, and is literally a dangerous practice.

The digestion is enfeebled and the blood is charged with toxins; assimilation and nutrient cell metabolism are deranged, foods at this time becoming centres for the growth of new toxins and new sources of depressant poisons.

Beef tea, milk, and other liquid foods are really culture mediums for the formation of toxins and the perpetuation of the old ones. Should the patient crave food, great discretion is necessary in the selection and quantity of the nutrient to prevent the increase of the poisons. Total abstinence from food during the early stage is followed by the best results.

When the delirium subsides food should be given sparingly, according to the conditions

present, and always giving preference to solid food, if possible. When the patient is treated at home, the friends and relatives will tax the skill of the physician in their demands for active medication. Phosphate of soda granules will meet this indication, and one granule may be given every hour, as mental remedies. Strong, discreet nurses or attendants, who will simply prevent the patient from personal injury, and also carry out the hydropathic treatment literally, are absolutely necessary in each case. Restraint must depend on the patient, and in certain cases should be associated with as much liberty as possible, and if great exhaustion is present, the patient should be kept in bed and massage given daily.

The surroundings should be kept as quiet as possible, and the patient allowed no visitors. The delirium, in most cases, is self-limited, and will cease in a few days; in other cases it may continue, in which instance the reasons for it should be recognized and acted upon. The condition of the heart during the stage of delirium rarely requires any treatment. Hypodermic injections of sulphate of strychnine are useful only in some unusual indication. Hot and cold water bags over the pericardium are safer and more effectual as stimulants. Ice on the nape of the neck is the most powerful excitant that can be used. The danger of heart collapse is very small, and although in some instances the depression is marked, it is functional, and quickly disappears.

When the delirium subsides, states of prostration follow, which are most successfully treated by nux vomica and preparations of arsenic. Strychnine is a very valuable drug, but cannot be used in all persons for any length of time.

Insomnia and neuralgias are common, and while many drugs are useful, much therapeutic skill is necessary to avoid complications and drug additions that are likely to follow. Opium derivatives are very attractive and dangerous by their analgesic and narcotic effect. Preparations of valerian, lupulin, and others of this class are valuable, but care should be exercised not to use alcoholic preparations of these drugs. Aqueous infusions, or acid extracts by the method of Squibb, are preferable.

I have used with excellent results a preparation called *ammonol*, which is chemically ammonated phenyl-acetamide. The effects are that of a stimulant and analgesic, and differing from other coal-tar products in not being a depressant in its action. I have given this at

night for insomnia, for the different myalgias and other nerve disturbances, and also for the relief of special symptoms that are distressing.

Digestion should be looked after carefully during the convalescent period. Tea and coffee and many foods may be the sources of both nutrient and nerve disturbance that will lead up to the use of alcohol again. The nerve centres are deranged, and hyper-sensitive to all irritants and stimulants, and while coffee and tea may be grateful and temporarily relieve the restlessness, the increased nervousness and depression which follow from its use are clear indications of its danger.

The digestion is likewise impaired, and unless the food contains about the due proportions required in health, fermentation and toxemia will result.

If the carbo-hydrates containing starch and sugar are in excess, or the hydro-carbons containing fats, or the albuminoids furnished by meats, eggs, and fish, are deficient or beyond the requirements of the system, sources of digestive poisons are encouraged, and auto-intoxication will follow. Practically, meat in limited quantities, with eggs and cereals, milk and fruits, are the most valuable.

The brain is hyper-sensitive to all forms of drinks and drugs containing alcohol, and their use either as a medicine or beverage is dangerous.

Alcoholic delirium is always followed by organic and functional changes and predispositions, which may very seriously alter the integrity of the brain and nervous system.

Some of the *facts to be made prominent* are as follows:

First. Delirium following the use of alcohol is increasing, and the mortality indirectly from pneumonia and other diseases is also increasing.

Second. Delirium tremens, as described in the text-books, is disappearing, and in its place profound brain changes occur, manifested in delusions and hallucinations.

Third. Different forms of alcoholism are more common, and the treatment of which is similar, but with a varying prognosis.

Fourth. The abruptness or slowness of the approach of the delirium is an indication of the causes and conditions, as the use of alcohol may be the symptom of some serious brain lesion.

Fifth. Delirium following from traumatism, or mental or physical disease, will require longer and more exact treatment.

Sixth. The pathology indicates paralysis,

blood poisoning, and auto-intoxication in all cases, beside other primary states, and suggest the most urgent treatment.

Seventh. The treatment should aim to remove the alcohol absolutely and promote free, continuous drainage through the skin, intestines and kidneys.

Eighth. Elimination is to be obtained by means of hot baths, hot packs followed by vigorous friction daily, salines to increase the intestinal and renal secretions. No food to be given except in special cases. Water and acid drinks, "*ad libitum.*" For the gastritis, use water in abundance.

Ninth. Strong, discreet nurses are required night and day to successfully carry out the treatment. No sedatives or narcotics are to be given until after the delirium has subsided, and then only to meet certain conditions.

Tenth. The condition is that of poisoning, which, with the help of nature, is self-limited, unless interfered with by reckless drugging and over-feeding.

Eleventh. The after treatment is substantially the same as that in cases of extreme exhaustion with anemia, requiring nerve rest, judicious feeding, and the use of tonic medicines, the principal of which are arsenic and nuxvomica and its alkaloids. Out-door life and mental change and quietness are always most effective.

WHY DOCTORS DISAGREE—A PLEA FOR A MODERN CODE OF ETHICS.*

By BITTLE C. KEISTER, M. D., Roanoke, Va.

This is an age of electricity, machines, combines and commercialism, and it behooves the progressive man of medicine to look ahead and not backward if he would keep in touch with the age and times.

Why doctors disagree has been a mooted question of long standing, both in and outside of the profession, and the subject is well worthy the most profound thinkers of the age.

While I do not feel prepared to solve this momentous question to the satisfaction of the entire profession, I hope it will not be considered presumptuous or impertinent on my part to offer a few practical and timely suggestions along certain lines that may serve somewhat as

a searchlight for abler minds, who may be interested in this subject.

Having been an active participant for nearly twenty years in the emoluments, pleasures and vexations that fall to the lot of an average general practitioner, and having been a pretty close observer of men and things, both in this and other countries, I feel like Martin Luther did on a certain occasion, when he said: "I have a certain right to my opinions, even though the devils of earth and hell oppose me."

We have in our profession doctors of various types. We have Dr. Loyal, Dr. Ethics, Dr. Wise, Dr. Bigbiz, Dr. Monopolize, Dr. Gossip, Prof. Blow Horn, Dr. Busybody, Dr. Jealous Eye, Dr. Commercialism, and *old Dr. Knowall*. When we consider such a variety of characteristics in one profession is it any wonder that doctors disagree?

In the city of Philadelphia, in the year 1847, a convention of reputable medical men was held for the purpose of formulating a code of medical ethics for the future guidance of the medical profession of that age. Fifty-four years have elapsed since that code was formulated. The charter members of three-fourths of the State Medical Associations of the United States were suckling babes when that code was written. The oldest members of the American Medical Association, with few exceptions, were not over 21 years old.

In that age there were no specialists, no sanitariums, but few hospitals, no railroad corporations, no clubs or social advertising rings, no cliques or combines of commercialism, homeopaths, no osteopaths, Christian Science healers, etc., etc. Dentistry and pharmacy were unborn. Doctors of medicine were as scarce in that age as our LL. D.'s are at the present age. There was one doctor to every three thousand inhabitants. At the present age there is one doctor to every six hundred inhabitants; in other words, it requires five doctors, with all our modern appliances, modern achievements, etc., to do the work now that one doctor did fifty years ago.

The medical colleges, although the requirements are severer than formerly, are turning out six thousand (6,000) graduates a year. If this continues, how long will it be before there is one doctor for every one hundred of the population?

Considering these facts and the vast array of changes that have taken place in the various attitudes of the profession towards the outside world, is it not natural to conclude that impor-

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tant changes in the old code are essential? Should we not keep pace with the times by so modernizing our code that the profession may be harmonized into one grand body of brethren? We want a code that will grant equal rights and justice to all, and special favors to none; a code that will foster fraternal courtesy towards every reputable graduate of medicine in the United States; a code that will discountenance cliques, rings and clubs, whose object is commercialism, selfishness and self-advertisement.

For the past fifty years the question of medical advertisement has been agitated. There is not a single meeting of the American Medical Association that this great question is not brought up for discussion, and like Banquo's Ghost, it will not down. There is a wide difference of opinion as to what constitutes medical advertising. This is a most vital question of the present age, and I hope we have men in this Society whose minds are sufficiently clear and matured to give this question a thorough ventilation, and that this Society will take the initiatory steps towards bringing about such reforms and changes in the old code as will rebound not only to her honor, but to the elevation of the whole profession of medicine.

On account of the sentimental reverence cherished for our dead forefathers who participated in the formulation of that ancient writing of 1847, and which seems to carry with it some of the sacredness of the Declaration of Independence, our modern thinkers fail to comprehend the importance of a modern code of ethics for the guidance of the medical profession of the present age. We need a code that will treat specifically on the many mooted questions of the age, such as medical advertising, professional etiquette, etc., etc.

For a member of the medical profession to deliberately say that he does not in some way advertise himself or his profession to the public, or is not pleased at seeing his name occasionally in a newspaper, associated with an important surgical operation, or with the illness of a distinguished patient, that good brother deliberately exaggerates or tells a falsehood. "All roads lead to Rome," and it is by no means necessary that a physician should always advertise in a newspaper or by hand bills in order to accomplish his ends; nor does it follow that he is unjustified or unworthy of respect because under the stress of his environments he advertises in one way or another. These are the

views of some of the leading minds of the profession.

Hear what Dr. G. Frank Lydston has to say on the subject in the *Medical News*: "It is my belief that our forefathers, when they wrote, 'Thou shalt not advertise' in the old code, wrote in a pharisaical spirit, without realizing the magnitude of the subject." Dr. Lydston further states that this is the cloak for more inconsistency and hypocrisy than anything ever written for the guidance of medical men. He further states: "Whatever the conditions may have been at the age in which the code was written, conditions are such at the present age as to absolutely demand advertising of one kind or another on the part of medical men." The physician may attempt to gloss over this necessity, as many are doing, but the fact still remains that he must advertise or starve."

The struggle for existence in the medical profession has always been a sharp one, and in the present age it is rapidly growing each year.

From the earliest historic times, physicians have been the promoters of the best interests of humanity. So intent have they been in seeking out the causes of diseases, in relieving humane suffering and pain, and battling with the grim destroyer—death—that they have neglected their own material welfare and have permitted a horde of parasites and vampires to fasten themselves upon humanity, and to absorb many of the benefits which rightfully belong to regular physicians.

Mankind has, more or less, strongly believed in an intangible, supernatural causative factor in the production of disease, and even at the present time among our own progressive and intensely practical people this tendency is shown by the many believers in "Christian Science," "faith cures," and other delusions.

The regular medical profession has always had the innate superstitions and prejudices of mankind to contend with, and has never received that degree of public recognition and support that its gallant fight against disease has merited.

Why is this the case? Why is it that the medical profession is not represented in the Cabinet at Washington? These questions are very practical, but I shall not attempt to answer them here. My better judgment, however, whispers to me that the medical profession of the United States needs a national code of laws, like unto that of Germany, that will reach every class and kind, and be the means of uniting the entire

profession into one great whole. Until this is done we cannot hope to attain that prominence to which it is justly entitled. In the great Empire of Germany the medical profession is supported and honored for her true worth. All the medical institutions and hospitals are amply equipped and supported by the government. The true medical man is honored for his ability and protected by the government. He is encouraged to make research for the cause and cure of disease by rewards of high honors from the government of that up-to-date country. If the government of the United States would do herself the honor as well as the medical profession, by following the footsteps of our fatherland, it would only be a matter of time when the medical profession of the United States would excel the world in matters of scientific research. Then there would be less occasion for so much strife and bitter antagonism as exists in the profession at the present day. Competition would be of a higher type and on more honorable grounds.

We want a code of ethics that will harmonize the difference existing among medical men in reference to the subject of newspaper advertising, and one that will stamp out the cause of so many petit misunderstandings inside the profession. We want a code that will teach the difference between a newspaper card (paid for) and a newspaper puff (unpaid for). We also want a distinction made between Dr. Newcomer, who is a stranger in a strange community, and Dr. Oldcomer, who needs no introduction to the community. We also want a code that will teach common-sense etiquette to those who are too selfish in their make-up to comprehend whose duty it is to make the first call when a new physician enters the field. We want a code that will teach Drs. Wise and Bigbiz to respect the opinions of their fellow-practitioners when called in consultation, notwithstanding a wide difference of opinion may exist between the consultants.

I am acquainted with a well-known M. D. who claims that it is a flagrant violation of the code of ethics to have a plain professional card inserted in a newspaper, yet this ethical gentleman never loses an opportunity to let it be known through the newspaper columns that he is a member of the Board of Health of a certain town, and a very prominent member of a number of secret organizations. See the following, which I clipped from a newspaper concerning this same Dr. Ethics: "*Operation after thirteen*

years.— Mr. J. A. W., a well-known Confederate veteran of this city, had a piece of steel extracted from one of his wrists yesterday. It was a piece of chisel, which had accidentally become imbedded in the wrist thirteen years ago. It had been a source of great pain recently, besides depriving him of the use of his arm. It is hoped the operation performed by Dr. (Ethics) will result in a permanent cure." This Dr. Ethics is a prototype of a very large class of medical men who need a rigid code of laws to keep them in line. This is the class that would say to Dr. Newcomer or Dr. Last, Sit thou supinely down and let the community remain in blissful ignorance of your presence.

"Oh! for a whip in every honest hand,

To lash such fellows naked through the land"

Many worthy practitioners who have spent long years of arduous toil in preparing themselves for their life's work, on the success of which their own and possibly the existence of their families depend, are confronted by this class (Shysters) of medical men, as well as by many other unhallowed obstacles, such as free clinics, free dispensaries, and a host of charitable institutions which treat not only the deserving poor, but in many instances, those who are amply able to pay for professional services. Away with a code of ethics that takes no cognizance of such irregularities and inconsistencies on the part of the profession!

These so-called oracles who manifest so much righteous indignation at the insertion of a paid card in a newspaper, in many instances, if they are influential or well-established in a community, never lose an opportunity to secure free local puffs, or, what is still worse, will try by some underhand and disreputable method to secure the patients and blacken the reputation of a fellow-practitioner.

If it is correct medical ethics for the well-known physicians, surgeons, or gynecologists, *et id omne genus*, connected with institutions of medicine, hospitals, dispensaries, railroad corporations, boards of health, etc., etc., to blazon their names forth to the world, is it not also right for the obscure general practitioner, at least, to let the world know that he still lives?

If it is in the province of a code of ethics to teach medical men to be consistent and courteous, we need one that will teach them the very great significance of inspiring their patients with a sufficient amount of confidence in their skill to prevent them from becoming discontented with their services, and on account of

this discontentment will consult Dr. Newcomer or Dr. Last.

Here lies the sacred key that unlocks the main cause of doctors' quarrels, jealousies, and misunderstandings, and until we can formulate a law and have it enacted by the Legislature to debar a sick man of his natural privilege of consulting whomsoever he pleases, we need not expect to smooth over the idiosyncracies of some medical men.

Strange as it may seem, the tendency on the part of many doctors is to blame and censure Dr. Last for all the losses in their patronage, while in reality it is plainly their own fault in not being able to hold their patronage after securing it.

There is one class of medical advertising practiced in some of the larger towns and cities that should be denounced by all reputable physicians. I refer to the commission advertising business, where professional drummers are employed on a commission by such men as Dr. Bigbiz and Dr. Monopolize.

I had the rare honor of being called to the bedside of one of these professional drummers recently in the absence of the family physician, Dr. Bigbiz, who chanced to be out of the city. I was not long in ascertaining the fact that Dr. Bigbiz was the old family physician, of my patient, and also that his success was largely due to my patient's untiring efforts in securing patronage at the rate of five to twenty dollars for each paying family, his own family practice being done gratis.

These are some of the degrading things that many so-called reputable physicians stoop to do in order to secure patronage. What stronger plea could be present than this for a new code of ethics for the guidance of medical men of the present age?

In conclusion, let me say we need a code that will harmonize and unify the profession into one great band of fraternal workers for the good of mankind, a code that will teach justice to all and special privileges to none. If it is right for the distinguished men of our profession to permit their names to appear in the newspapers, it is also right to grant the same privilege to men in humbler positions in the same profession. If it is correct ethics for Dr. Osler, Dr. Rixey, Dr. Mann, or Dr. McBurney to allow their names to appear in public print, it is equally right for Dr. Smith or Dr. Brown or Dr. Jones to enjoy the same privilege.

While I am opposed to all forms of injudicious advertising and chicanery on the part of

the medical profession, I am not opposed to judicious announcements on the part of any reputable member of the profession; provided, he is sincere, honest, and consistent. I see no objection to any reputable physician, when he first locates in a new field, making a judicious announcement or inserting a professional card in a newspaper setting forth the facts of who, where and what he is. Neither can I see any reason why the names of reputable medical men should be kept in the background or omitted in the newspaper accounts of important cases of sickness or surgery; provided, honesty and consistency prevail.

These are only a few of the many idiosyncrasies that characterized the sentimentality of our forefathers, and, strange to say, old notions are very tenacious, and they are still entertained by some of our younger followers of Galen and Hippocrates.

"The mills of the gods grind slowly,
And the fittest only shall survive."

THE PROPHYLACTIC CARE OF THE BREASTS BEFORE AND AFTER LABOR.*

By JOHN F. WINN, M. D., Richmond, Va.,

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When the fact is considered that there is scarcely any pain worse than that caused by an abraded or fissured nipple, and that the simplest nipple wound offers an easy entrance for microorganisms which may lead to septic mastitis, no argument is needed to show that the prophylactic management of the breasts, before as well as after labor, is a subject of paramount obstetric interest and value. For that reason this paper is limited to the prevention rather than the cure of septic conditions of the breast.

It is necessary to bear in mind the difference between congestion and infection of the breast. Congestion or simple hyperemia is attendant upon the establishment of the milk secretion, which generally occurs about the third day, and, while it may be painful because of the engorgement, it does not cause fever. An infected breast, on the contrary, does produce fever, and while a differential diagnosis may sometimes be difficult because of the similarity of the local symptoms, the fact remains that the two conditions are totally and primarily distinct. For a

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long time milk retention was believed to be a factor in these inflammatory processes, but many obstetricians now hold to the belief that this stasis of the milk is the result, and not the cause, of inflammation. Some admit that this condition may favor bacterial growth, and that the traumatism inflicted upon the delicate lining of the milk ducts by pressure, may afford a suitable environment for septic processes; but the opinion generally prevailing is that engorgement of milk is not alone sufficient to cause inflammation. The writer accepts the statement that "there is no milk fever," and believes that this term should be banished from our vocabulary. Certainly, if any fact is established, it is that this fever of the third day is dependent upon infection of some part of the parturient tract.

As to the etiology of mastitis, it is agreed that any of the pus-making germs may be the offender, the one most frequently found being the staphylococcus; the next in frequency being the streptococcus. The lochia, from the nature of circumstances, is often a very fertile medium of infection, and we cannot be too rigid in our orders to nurses, as well as patients, in reference to this source of danger. Unfortunately it is the custom of many women to remove with their own hands the soiled perineal pads. The next moment they infect the nipple by grasping it with the thumb and finger for the purpose of placing it between the infant's lips. Another cause is found in the bacteria of the mother's mouth. Who has not seen a mother apply her own saliva on the tip of her finger to moisten the nipple, when, because of its dryness, the child refuses to draw? Obviously, since decayed teeth are so frequently the result of pregnancy, what better source of infection than this?

Other ways of contamination are soiled clothing and sheets; and, last but not least, the hands of the nurse, who, either from forgetfulness, carelessness or ignorance, handles the breast with fingers soiled by lochial or fecal discharges! This is no pen picture, but a statement based upon cases that have come under my personal observation, where experienced trained nurses were in attendance, but whose continuous "good luck" in the management of the breast with its resultant self-confidence, had engendered a laxity in aseptic methods born purely of indifference and neglect.

Of all the predisposing causes of mastitis, abraded and fissured nipple rank first in importance. Since sore nipples, then, are so easily produced, more easily prevented, but not so

easily cured, it is proper to consider first the measures that should be directed to the care of the nipples during pregnancy, and particularly those which experience counts most useful.

CARE OF NIPPLES DURING PREGNANCY.

First of all, the various astringent lotions believed by the laity to have the property of "hardening" the nipple, such as alum, tannin, glycerine, etc., should be condemned. What is needed is not a hardening, but a *softening* of the nipple—a condition of greater elasticity and not one of brittleness and dryness. To produce this desired elasticity, nothing has served me so well as cocoa butter or cocoa oil, applied twice daily during the latter weeks of pregnancy, first bathing the nipples and areola with sterile water, or better, a solution of boric acid, and then covering them with sterile gauze pinned to the under garment. If the nipples are defective in development, they should be kneaded daily with sterile fingers, and, as far as possible, the short and sunken nipples should be drawn out by gentle friction.

TREATMENT OF SUNKEN NIPPLES.

When lactation begins, too much stress cannot be placed on the importance of the strictest asepsis on the part of everybody and everything coming in contact with the breast. If the sunken nipple must be drawn out as before labor, the danger of infection will be minimized if gentle pressure is made on the sides of the areola; and if the nipple must be seized by the fingers, it should be handled with sterilized gauze. Bathing the nipple after each time of nursing with a saturated solution of boric acid should be strictly observed, and a careful but gentle cleansing of the child's mouth should be enjoined before it is put to the breast.

LENGTH OF TIME OF NURSING.

My observation convinces me that one of the most important things connected with lactation is the length of time the infant shall remain at the breast. Of course, this will depend in great measure upon the amount of milk secreted, but unless the milk supply is very limited, the time had best not exceed fifteen minutes. Infants, as a rule, are given too much milk rather than not enough, as evidenced by the frequency of colic in the absence of special instructions concerning the important subject of feeding. In many cases ten or twelve minutes will be sufficient time for nursing, especially if the flow of milk is free and abundant. So, after all, this question must be decided in each case by the conditions present. Of course, the breasts will be drawn alternately.

FREQUENCY OF NURSING.

The interval that shall elapse between the times of putting the child to the breast is perhaps of more importance than the number of minutes it shall be permitted to draw the nipple of a primipara. The physician cannot be too dogmatic in his instructions to a young mother, for upon the observance of his orders will largely depend her exemption from sore nipples. After lactation has been well established, this interval should never be shorter than two and a half nor longer than three hours. The nursing should be guided by the clock; no guess work as to time should be permitted. If the child is asleep, it should be awakened when its feeding time arrives, but as soon as practicable it should be trained to go from 11 or 12 o'clock at night until morning without nursing, both for the comfort of the mother as well as for a period of rest for the child's stomach.

THE IMPORTANCE OF VIGILANCE DURING THE COLOSTRUM PERIOD.

If a nipple is going to be tender it will, in a majority of instances, be noticed during the earliest days of lactation; and in looking for the cause, none is more potent than the *prolonged and too frequent nursing practiced during the first three or four days after labor*. The child, in some instances, is placed to the breast as often as every hour during this colostrum period, in the absence of instructions. Of course, this is all wrong. Indeed, close observation on this point convinces me that even the stereotyped interval of two and one-half hours is too short a time for the colostrum days. What the child needs at this period of life is rest, more than food. If it were hungry, nature would have provided the milk supply from the beginning. The colostrum, if only a few drops, will have the effect designed—that of driving out the meconium and preparing the digestive tract for the milk that is soon to follow. But when the child is made to tug away at the nipple (which is now being drawn for the first time) for 20 and even 30 minutes, with this process to be repeated every two hours, and sometimes oftener, what is to prevent the very extensive abrasion or deep fissure which appears? The wonder is that the woman has any nipple left at all.

How much better to let the child sleep, and, in turn, the mother, and place it to the breast only at such intervals as shall be necessary to *teach it to draw*, and at the same time to get the amount of colostrum necessary for purgation! For several years I have been governed by the following scheme of hours for the colostrum

period, and so efficacious has it proved to be I offer it in detail:

During the first day, unless a relaxed uterus demands the reflex effect of nursing, the child is not placed to the breast until three hours after its birth, and thereafter at intervals of five hours during the remainder of the first 24 hours; during the second day, the interval is four hours; during the third day, three hours. When lactation is well established, the nursing interval is reduced to two and a half hours, and under no circumstances is the period shortened.

A VALUABLE ADJUNCT TO REDUCE THE FORCE OF

SUCTION.

The writer would here emphasize a point which he has never seen mentioned, and which in his experience is a most valuable adjunct in the prevention of sore nipples. It has for its object the *lessening of the force* necessary to draw the milk from the deeper portions of the tubules, especially during the first week of lactation, beginning with the colostrum period. Since adopting this plan in connection with the longer periods of rest just named, he has had absolutely no trouble with the breasts. It is this:

Just before the child is put to the breast, the nurse is directed to very gently massage or stroke the gland from the periphery toward the nipple; the object being to invite the flow of colostrum, and, later, the milk up to and immediately under the region of the areola. When the areola is seen to be erected, the child is now put to the breast. The result is the efforts at traction are so slight that the nipple is scarcely pulled upon at all. Indeed, the flow of milk seems to be so easy that, apparently, all the child has to do is to swallow the milk which flows, as it were, by gravity.

TREATMENT OF SORE NIPPLES.

If, despite all preparatory treatment, the nipple should become sore, a well-fitting, soft rubber shield will afford great comfort, and will be a safeguard against infection. Cocaine has given great relief when applied to supersensitive nipples without cracks. In these cases, however, it will be found best to remove the child temporarily from the breast, though a cure can often be effected by using the nipple shield in these cases. Many well-known and useful remedies have long been popular, such as equal parts of castor oil and bismuth, applied after each nursing; compound tincture benzoin applied directly to the fissure; ichthyol is often curative when other remedies fail, and, finally,

the time honored solid stick of silver nitrate is one of the best applications for nipple cracks.

THE ADVANTAGES OF THE BREAST BINDER.

To prevent the excessive engorgement and congestion of the third day, I know of nothing to equal the benefits derived from a properly adjusted breast binder, and preferably that known as the Y-binder. Its efficiency is greatly enhanced by the addition of cotton, which better equalizes the pressure. By pinning the lower edge of the upper limb of the Y to the upper edge of the lower limb in front, all portions of each breast are equally compressed and supported. This special form of binder has greatly the advantage over all circular binders, such as the "Murphy" binder, for example, in that the nipples are free, permitting the nursing of the child without removing the binder; and, furthermore, permitting the egress of milk from the engorged breast in the intervals between nursing. Its advantage over the "figure of 8" bandage is the simplicity of its application with the least disturbance of the patient. To accomplish the best results and to make more certain that it is properly adjusted, the physician should apply it himself; but if for any reason it must be entrusted to the nurse, she should be particularly instructed to lift the breasts upward and toward the middle line. Care should likewise be taken to secure a comfortable and supporting pressure, and not a squeezing process.

TO DECREASE MILK SECRETION.

When it is desired to limit the secretion of milk, either in the engorged or the inflamed breast, there is nothing so efficient as the tripod—liberal purging by an active saline cathartic, the restriction of liquids, and the application of this Y-binder. With reference to diet, however, it is important that very explicit orders be given and enforced. It will not suffice to say, "reduce the amount of liquids." The order must be—*no milk* to be taken at all, and only a very small quantity of water, tea or coffee. In other words, the patient must be brought to a state of thirst. She is to eat dry food for at least two or three days. Under the influence of dry food, purging and the breast binder the secretion of milk can, in a very few days, be wholly arrested, if desired, as would be the case when the child is dead.

MASSAGE AND BREAST PUMP.

A word of caution is necessary about massage and the breast pump. Both are much used, and both are abused. Too much rubbing is frequently a source of harm, and the breast pump

is likewise of doubtful utility. It must be granted that *massage*, when properly executed by one skilled in the art, does give relief to a breast over-distended by milk, but when unskillfully performed there is great danger of bruising an already sensitive gland, and more harm than good will have been done. Of course, if inflammation already exists, massage is positively contra-indicated. If in doubt about its utility, be guided by the effect produced. If it increases pain it should be discontinued. Whenever massage is employed it should be in the form of a gentle stroking over the course of the lactiferous ducts from the periphery to the nipple. Regarding the *breast pump*, it must be counted as a very unsatisfactory means of relief for a sensitive and congested breast, although it is about the first remedial measure that suggests itself to the majority of nursing mothers. It should be borne in mind that the fullness and discomfort of the third day is caused more by blood than milk, and a breast pump can do nothing less than increase this congestion. Again, the suction of a pump is continuous, while that of the child's mouth is intermittent, to say nothing of the danger of bruising by the pump. These are sufficiently good reasons, it would seem, for not using the breast pump under the condition just mentioned. A safer and better means is the Y-binder, especially when re-inforced by cotton evenly distributed over the entire breasts.

TO MAKE Y-BINDER.

The efficiency of the Y-binder depends very much upon the material and the manner of applying it; and, at the risk of making this paper, which is already long, even longer, I will describe it. The bird's-eye diaper will be far better than towels or cotton cloth. To make: Fold three diapers longitudinally to the width of 4 inches. To one end of diaper No. 1 pin diapers Nos. 2 and 3 in such manners that they will diverge at an angle of about 45 degrees. This gives the single Y-binder. To apply: Place No. 1 (which corresponds to the vertical stem of the capital letter giving its name) under the patient's back, lift the breasts upward and toward the middle of the chest, carry the lower limb across the breasts below the nipples and the upper limb the same way above, and lap the free ends, one over the other, to form the same angle as that first made on the opposite side. Now pin to these the end of No. 1, drawing gently enough to give comfortable support. As stated above, the edges of the two limbs can be pinned

in the middle of the chest and thus cause the binder to fit more snugly to the inner side of each breast.

The double Y-binder has one advantage over the single binder described, in that it is easier of application in the absence of an assistant to lift up the breasts. In making this, five diapers are required; two diapers being fastened to each end of diaper No. 1. Those forming the limbs of each Y must be shorter, however, than those composing the single binder; a good length being about 14 inches. To apply: The upper and lower limbs, respectively, are brought together and pinned in front, re-inforced by cotton, if desired.

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SERUM THERAPY.*

By CHARLES R. GRANDY, M. D., Norfolk, Va.

Theoretically there is no branch of therapeutics so enchanting as serum therapy, but practically, except in one disease, the general profession has obtained little from it. The manufacture of these serums is, however, still in the experimental stage, and even if they have been put on the market, they, for the most part, lack the test of general use. Though the results obtained with diphtheria antitoxin have been very brilliant, other serums have met with distinct failure, in consequence of which most physicians have gotten to distrust them all, and to consider them untried remedies, only to be used when everything else has failed.

Nevertheless, there are other valuable serums besides the diphtheria antitoxin, but the knowledge of most physicians concerning them is very limited. The general practitioner is, however, not to blame for this state of affairs, which is in a great measure due to the lack of a practical treatise on the subject. Thus the text-books on the practice of medicine give little more than an account of diphtheria antitoxin; those on therapeutics give more on the subject, but they are not thoroughly up-to-date, and do not give their information in a form which can be readily gotten at by a busy practitioner; while the bacteriologies, as a rule, confine themselves to animal experiments and the theoretical side of

the matter. On the other hand, the magazines and year books give lengthy discussions on the various serums, but these papers are often greatly at variance, and it takes exhaustive reading to come to a conclusion. Having recently had occasion to read up on serum therapy, I recognized how difficult it was to obtain anything practical on the subject, and determined to put the little I was able to collect into a short paper, which, I trust, may be of some service to the general practitioner.

THEORY OF SERUM THERAPY.

I think it wise to begin with a short account of the theory on which serum therapy is based, and a few words as to the manufacture of serums. This, of course, will be very elementary. Bacteria produce disease not by mechanical irritation, but by means of certain poisons (toxins) secreted by them. Each pathological bacterium produces a distinct toxin, which, when injected into an animal, will cause the same symptoms as the bacteria which secreted it. There is a class of diseases—the acute, infectious diseases—which tend to run a fixed course, and are self-limited. In these diseases the body tries to withstand the bacteria and their toxins, and often finally overcomes them. It does this by secreting a substance, which renders the toxins harmless—an antitoxin, which, however, is not secreted by the body cells until they are irritated by the presence of the toxin. If the toxin is present in very large quantities, the person may succumb before enough antitoxin is produced to successfully check the progress of the disease. An antitoxin is not, as a rule, bactericidal, but merely destroys the toxins and allows the phagocytes, which would otherwise have been killed, to vigorously attack the bacteria. There are bacterial diseases which are not self-limited. Here, though an antitoxin may be formed, the body resists primarily by means of the phagocytes, and by walling off the diseased area.

When a person has just recovered from an acute infectious disease he has quite a large amount of antitoxin in his body, and blood serum from convalescents has been used successfully in treating cases of measles, scarlet fever, typhoid fever, pneumonia and diphtheria. But as this method is impracticable as a general therapeutic measure, beasts have been experimented with, and in certain diseases a successful antitoxin has been obtained.

HOW ANTITOXINS ARE MADE.

In general the following is a brief outline of

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the way an antitoxin is prepared. Bouillon cultures are made of the bacteria of the disease for which an antitoxin is desired.

The germs are killed either by an antiseptic, such as trikresol, or by heating to 60° or 70° C., which destroys the bacteria without influencing the toxin, after which the dead bacteria are removed by filtration. The animal, most often a horse, is now injected with a small quantity of this filtrate, and these injections, with gradually increasing doses, are kept up for several months. This procedure causes the horse's cells to produce an antitoxin, which increases in strength with the increase of the toxin. The horse is finally bled from the jugular vein under strict antiseptic precautions, and the serum is allowed to separate from the corpuscles. It is then sealed in aseptic vessels and is ready for use. Some manufacturers add preservatives, such as trikresol or carbolic acid before sealing, but this does not prevent a serum from rapidly degenerating when not kept on ice. A fixed quantity of this serum, let us say a cubic centimeter, does not, however, always contain the same quantity of antitoxin, as the serums from different horses vary in strength. Consequently, if we really wish to know the amount of antitoxin we are using, the serum should be standardized. This is done by experimenting with guinea pigs. Thus, if a certain amount of toxin will kill a pig of fixed weight, it is determined how much of the serum will be necessary to neutralize it. A number of guinea pigs are injected with twenty-five times the amount of toxin necessary to kill, and each one with a different amount of the antitoxic serum, and the amount which exactly neutralizes the toxin and saves the pig is carefully noted, as it gives the strength of the serum. I am sorry to say that only a few of our antitoxins are thus standardized, and until the manufacturers do this we can never be sure of our dosage, which should be in units instead of in cubic centimeters.

In certain cases the patient is made to manufacture the antitoxin himself by being injected with a small quantity of the toxin. This, however, must only be done as a preventive and never as a curative measure, when it would merely add more poison to that already present in the body.

I will now take up the individual serums, and give a short account, as far as I am able, of their uses, limitations and dosage, and will, in some

cases, add where they can be obtained, and their cost.*

Bubonic Plague.—I will treat this disease first, because both a preventive and a curative serum are manufactured, allowing a clear distinction to be drawn between the uses or prophylactic and curative serums in general.

(a) *Haffkine's serum* is merely a toxin, made by heating a bouillon culture of the plague bacillus to 70° C. for an hour, allowing the dead bacilli to sink, and decanting off the clear fluid. It should never be given to a patient suffering from the plague, where it, being a toxin, merely increases the virulence of the disease. It is, however, of great service as a prophylactic, where the dose is 2 1-2 c. c. These injections have been used extensively in India, where over 12,000 persons have been inoculated.

It was shown that under like circumstances twenty times as many uninoculated people took the plague as inoculated, and that the mortality in previously inoculated persons was 78 per cent. to 90 per cent. lower than in the uninoculated. The immunity lasts from four to six months.

(b) *Yezsin's serum*, on the contrary, is a true antitoxin, made in a horse by the usual method. It is of but little service as a prophylactic, but is very useful in treating the disease. This treatment should be begun as early as possible, and 30 to 40 c. c. should be injected daily. This not only improves the symptoms, but reduces the number of bacilli found in the blood. The mortality in cases treated with the serum is reported to have been 14 per cent.; in those without it 70 per cent.

Thus the contrast between the actions and uses of these two serums—toxin and antitoxin—is clearly shown. The toxin is only to be used as a preventive inoculation, whereas the antitoxin is of especial value in curing the disease, though it likewise gives a short immunity. And this distinction applies to other diseases as well as the plague.

The Marine Hospital Service was prepared to furnish either serum should there be use for them. But like other serums, they degenerate with time, even if kept on ice, so they may not

* The author wishes it to be expressly understood that this is done merely as a matter of handy reference, and that he takes no responsibility for the prices quoted nor for the character of the serums furnished by the firms mentioned. Nor does he claim to give the names of all the serum manufacturers, but only those of the American firms with which he is acquainted.

now be on hand in Washington. Mulford can furnish the Haffkine prophylactic serum.

Diphtheria.—In this disease serum therapy has accomplished such brilliant results that its value is universally recognized. The serum is a true antitoxin, and is accurately standardized, a unit being the quantity necessary to neutralize a hundred-fold fatal dose of toxin in a guinea pig weighing 250 grams, or one antitoxin unit exactly neutralizes one hundred toxic units. The horse is used in its preparation, and is treated in the manner heretofore briefly described.

As there still may be a few doubters as to the efficacy of this antitoxin, I will quote statistics from the German hospitals, where 42,000 cases have been collected. For the four years before antitoxin was used, the mortality in non-operative cases was 41.4 per cent.; for the next four years with antitoxin it was 16.5 per cent. The operative cases in the pre-serum four years show a mortality of 60.38 per cent.; in the post-serum years, of 36.32 per cent., or 25 in 40 cases were saved by antitoxin. Why, then, have some of us obtained unsatisfactory results with antitoxin? It is generally because the doses have been too small. Less than 1,000 units should never be given, and, as a rule, we had better give 2,000 units. In severe cases, which have been running some time, we must give 3,000 to 4,000 units or more. The antitoxin treatment should be begun as soon as a diagnosis is made, for it is certainly not right to wait till the patient is in extremis before starting to use it. In getting antitoxin we should make sure that it is fresh, as it degenerates with age, and should be less than six months old, and it should also have been kept on ice, for hot weather will ruin it. Diphtheria antitoxin is generally kept on hand by the city boards of health, or it can be obtained through the State boards of health, or direct from the manufacturers (e. g., Milliken, Mulford, New York Board of Health, Parke, Davis & Co., Fred Stearns). Prices vary with the concentration of the serum, and also with the manufacturers, 2,000 units costing from \$1.25 to \$4.50.

Whether antitoxin injections are protective or not is hard to determine, as one can never tell whether a person exposed to diphtheria will take it or not. Theoretically, we suppose that such injections are protective for a few weeks.

Pneumonia.—There is now on the market an anti-pneumococcic serum (a true antitoxin), which is reported to be of value. Tyler has re-

cently collected quite a number of cases, and considers it of the greatest value in acute lobar pneumonia. It reduces the temperature, making it fall by lysis instead of crisis, and gives the patient relief, lessening dyspnoea and allowing sleep. Its action seems to be entirely that of neutralizing the toxin, as the consolidated lung does not resolve earlier than it would otherwise do. Although this serum needs the test of time and extended use, it promises much, and is likely to come into general use after a few years. The dose is 20 c. c. every six hours, or 40 c. c. twice daily. It is at present only manufactured in this country by Mulford, and costs \$2.75 for 20 c. c. It has not been standardized as yet, and deteriorates quite rapidly; so we must be careful to use only the fresh serum.

Tetanus.—The results obtained from the use of antitetanic serum as a cure for tetanus have been very unsatisfactory. In animal experiments, it is useful when injected before or with the tetanus bacilli, but it has little or no effect when symptoms of tetanus are already present. Thus it seems able to neutralize the toxin when it is still in the blood, but it appears to be of no service after the poison has entered the nerve cells. Clinical experience shows good results only in the milder chronic cases, in which the prognosis is always much more favorable—the severe cases being seldom modified by the serum. Intradural injections have been resorted to, but the results have been only a trifle more favorable than from subcutaneous injections. Still some good results have been gotten when the serum was injected at the first onset of the disease, but the results were no better than those from the injections of carbolic acid. As tetanus is such a hopeless disease, we may use the serum in order to give the patient every possible chance; but it will be well to remember, before ordering it, that this treatment is expensive, costing from \$25 to \$50, and that good results are anything but certain.

Twenty to eighty c. c. of the antitoxin should be administered as soon as possible, and this dose should be repeated every six hours. It can be obtained from Milliken, Mulford, New York Board of Health, and Parke, Davis & Co., and 20 c. c., costing \$3.00.

As a prophylactic, it has been successfully used in veterinary work, and it should be thus used in 5 c. c. doses when a person has been wounded in a locality where tetanus is supposed to be present, and especially in wounds from

toy pistols, which are notoriously dangerous. This serum is standardized.

Streptococci Infections.—Very different results have been reported from the use of anti-streptococcal serum—in one case it has acted brilliantly, in another it has been of no service whatever. The reasons for this are not hard to find. Though it has been used for erysipelas and septicaemias in general, it is naturally of no service in infections caused by other bacteria than the streptococcus, having no action on the staphylococcus, gonococcus, colon bacillus, etc. Besides this, there seem to be different forms of streptococci, and the serum is only potent against that form whose toxin was used in its manufacture.

Finally, it has, as a rule, only been used in desperate cases, in which all other forms of treatment had failed, and even here much too small doses were generally given. In order to expect good results from anti-streptococcal serum (1) we must be sure that we have a streptococcus infection, but even then we cannot be sure that it is the right variety of streptococcus; (2) in severe cases we must give 20 to 40 c. c. every four or six hours, but larger doses can be given without harming the patient; (3) we must see that the serum is fresh, serum over three months old being worthless, and it must be kept on ice; (4) the serum must be used along with surgical treatment, and not in place of it. A smaller dose (10 c. c.) is said to be of use for symptoms arising from wounds infected by the streptococcus, where it will prevent a general septicæmia. As this serum has generally been used blindly as a last resort, and without regard for the principles just laid down, I feel that it has not had a fair trial, and that with a full recognition of its limitations, future use will firmly establish it among our most useful remedies. It is manufactured by Milliken, Mulford, New York Board of Health, and Parke, Davis & Co. Twenty c. c. cost \$1.75.

Tuberculosis.—We all remember the furor which followed the announcement that Koch had discovered a cure for tuberculosis, and the general disappointment when tuberculin was found to be of little therapeutic value. Most of us counted the failure decisive, but it did not prevent further experiments in the same line, and attempts at making a successful serum for tuberculosis are still being carried on. The first tuberculin was merely the sterilized bouillon cultures from which the tubercle bacilli had been filtered, and which, by analogy, were sup-

posed to contain the tubercle toxin. Therapeutically, it proved not only to be of little value, but to be very variable, and further investigation showed that tubercle bacilli secrete very little toxin. To overcome this, in making the new tuberculin, Koch crushed the bacilli and made a glycerin extract from them, feeling that in this way he must obtain their active principle. Von Ruck follows the same process, but uses water instead of glycerin. There have also been various attempts at making a tubercle antitoxin, notably those of Margliano in Italy and Fisch in this country. Both inject animals with tuberculin, the former using asses, the latter horses, and the injections are kept up as in the preparation of diphtheria antitoxin. This serum (an antitoxin in contradistinction to tuberculin, a toxin) has been tried and good results have been reported from its use in early cases of tuberculosis, as have also been reported from the use of tuberculin. But we must remember that a good percentage of early cases of tuberculosis recover any way, that only the most favorable cases have been experimented with, and that it is probable that these cases would have recovered without the serum as well as with it. Tuberculosis is not a self-limited disease.

The body fights the tubercle bacilli more by phagocytosis and a walling off process than by means of an antitoxin. Hence it is doubtful if a serum like Margliano's, which is not bactericidal, is of much, if any use. A person dying from pulmonary tuberculosis is killed more by the toxins produced by germs following in the wake of the tubercle bacillus than by the tubercle toxin. Against such toxins the serums of Margliano or Fisch or the antitoxin formed in the body by the injections of tuberculin would naturally have no effect. Our past experience with these serums is certainly not more satisfactory than the climatic treatment of the disease, and for the foregoing reasons I doubt if we will ever be able to secure a successful serum for the cure of tuberculosis.

On the other hand, the tuberculin test is of value in cattle, and should be more extensively used in diagnosing early tuberculosis in man. The test is made by injecting 1-10 milligram of tuberculin and carefully noting any local or bodily reaction. As an early diagnosis is all important in treating tuberculosis, tuberculin may, in this way, give us the good results which we at first hoped to get from it as a curative agent. For any who wish to try it, I will add that Margliano's serum can be obtained from Mul-

ford or Parke, Davis & Co., at \$3.00 per 20 c. e., and that the daily dose is 4 to 5 minims, gradually increased to 15 minims, and that Fisch's serum can be gotten from Milliken. Tuberculin for human practice costs \$1.00 for 2 c. e., and can be gotten from the various manufacturers.

Typhoid Fever.—Numerous attempts have been made to obtain a curative serum for this disease, but they have all met with failure. Fresh hope was kindled by the discovery that blood serum from a patient recovering from typhoid had a markedly destructive action on the typhoid bacilli (the well-known Widal reaction); and more especially when this reaction was obtained with a serum produced by injecting animals with toxins from typhoid cultures. This serum was found to protect guinea pigs, when injected at the same with the typhoid bacilli, but its action is not antitoxic, but purely bactericidal (in contradistinction to diphtheria antitoxin), and no curative results have been obtained from it. On the other hand, a prophylactic serum has been made by killing the typhoid bacilli in a bouillon culture by lysol, or heat at 60° C. and filtering out the dead bacteria. This serum has been used as a prophylactic in the British army in India and South Africa, and markedly successful results have been reported. When one remembers that more deaths result in modern warfare from typhoid fever than from bullets of the enemy, its usefulness can be readily appreciated. In private practice, however, we should seldom have occasion to make use of these inoculations. The possibility of procuring a curative serum for typhoid fever is still open to us, and work in this line is being diligently prosecuted, but its achievement seems as far off as it was ten years ago. The protective serum is not on the market, but it could be easily made if there was a call for it in any quantity.

Asiatic Cholera.—Much of what has just been said about typhoid fever applies to cholera. A reaction, similar to the Widal reaction, can be obtained with serum from a cholera patient and spirilla, and an injection of such a serum into the peritoneal cavity of a guinea pig, along with the spirilla, protects the pig. An attempt has been made to procure an antitoxin by injecting dogs with the cholera toxins, but the results from the use of this serum have been anything but brilliant (a recovery of one in three). As in typhoid fever injections of the cholera toxins have been used as a prophylactic by Haff-

kine, and such good results have been reported, that these inoculations would be certainly tried, if cholera should again appear in the civilized world.

Diseases whose bacteria have not been positively identified.—The first step in making either a prophylactic or a curative serum is to get a pure culture of the bacteria causing the disease. If we get a culture of bacteria which happen to be present, but which do not produce the disease, we may be able to obtain an antitoxin which is potent against these organisms, but which will have no effect on the disease itself. Thus if a streptococcus is found to be present in an autopsy on a case of pneumonia, an antitoxin can be made from this bacterium, which will protect animals inoculated with this streptococcus, but which will have no effect on a true case of pneumonia, which is produced by the pneumococcus, and not by the streptococcus. When a bacteriologist finds an organism which he supposes to be the cause of the disease, he almost always tries to make an antitoxin, but this antitoxin will have no effect on the disease unless the true cause of the malady has been found. Consequently, we can put little faith in any new serum until we are sure that it comes from the bacterium which really produces the disease in question. Keeping this point in mind, we will discuss a few diseases whose causes are not positively proven.

(a) *Yellow Fever.*—Both Sternberg and Sanarelli have claimed to have isolated the bacterium of yellow fever, and Sanarelli has produced an antitoxin, which he considers of value. But other investigators (Reed and Carroll) have gone far to prove that Sternberg's bacillus is nothing but a modification of the colon bacillus, and that Sanarelli's bacillus is the hog cholera bacillus, both of which are widely distributed, and merely happened to be present at the autopsies. It has lately been proven that the mosquito transmits yellow fever from the sick to the well, and it is probable that an organism resembling the malarial organism is the cause of the disease. Consequently we must not expect much from Sanarelli's serum. The matter is still, however, in the experimental stage, and we can only wait for further developments.

(b) *Scarlet Fever.*—Class has isolated a diplococcus, which he considers the cause of scarlet fever. He has also produced a serum in a hog which will protect guinea pigs from injections of this diplococcus. But it still remains to be proven that this diplococcus is the true

cause of scarlet fever, and, until this is done, we need not consider the serum.

(c) *Syphilis*.—Serum obtained from persons with tertiary syphilis has been used to treat secondary symptoms. Though good results were reported, they were certainly no better than those obtained with mercury. The organism of syphilis has never been positively identified. Even if identified, the immunity which beasts show to the disease would prevent the manufacture of a curative serum, which will, in consequence, probably never be obtained.

(d) *Leprosy*.—While the bacillus lepræ has been found in many cases of leprosy, the disease has never been reproduced in lower animals, and consequently it has not been proven to be the cause of the disease. The bacillus has, however, been cultivated, and an attempt is being made to procure a curative serum. But as leprosy, like tuberculosis, is not a self-limited disease, it is doubtful whether a successful serum can be obtained, even if we have in this bacillus the true cause of the disease.

(e) *Rabies*.—Although the germ of hydrophobia has not been isolated, Pasteur discovered a method of preventive inoculation, which, as it can be used during the long period of incubation, amounts to a curative measure. It was found that the central nervous system of animals which had succumbed to rabies contained most of the poison, which after the death of the animal gradually loses its strength. By beginning with injections of an emulsion of a spinal cord 15 days old, and gradually increasing the dose by injecting fresher material until the cord used is only 2 or 3 days old, a tolerance to the poison is produced. It is, nevertheless, very hard to obtain accurate statistics as to the worth of this treatment, as it can seldom be ascertained whether the patient has been really infected before coming for the treatment. By inoculating animals in the same way, Marks claims to have obtained a hydrophobia antitoxin which is of use after the symptoms have appeared, but his work is still in the experimental stage, and we must await further developments.

Diseases primarily effecting the lower animals.—Successful preventive inoculations have been made in anthrax, black leg, hog cholera, and chicken cholera. These are made with attenuated cultures of the bacteria producing the several diseases. From the glanders bacilli a substance (mallein) has been obtained which greatly resembles tuberculin, and which, like it, can be used as a diagnostic test. As this

paper is only intended to deal with human practice, I trust that this brief reference to the foregoing serums will suffice.

Antivenomous Serum.—Before closing, it will be well to mention that a successful serum has been made to counteract the deadly effects of the cobra venom, which strongly resembles the bacterial toxins. The blood serum of animals immunized by increasing doses of the venom has already saved a number of people bitten by the cobra, among them Chalmette, the discoverer of the serum.

An attempt has been made in this paper to put the present status of serum therapy in a short, practical form—a form which can be readily grasped by the busy practitioner. Theoretical points have only been mentioned when absolutely necessary as an explanation of the practical matter, and long statistics have likewise been omitted. The paper must, therefore, be viewed as a practical summary rather than as a scientific treatise, and as such I offer it for your consideration.

Editorial.

“Protest Against the Appropriation of State Funds for Professional Education.”

Such is the title of a pamphlet issued by the University College of Medicine, Richmond, Va., containing the addresses by Drs. Stuart McGuire, L. M. Cowardin, and J. A. Hodges, of Richmond, and the “reply” a week later by Drs. Christopher Tompkins and George Ben. Johnston, made before the committee of the Constitutional Convention during January, 1902, with a *stenographic report of the discussion on the subject*. We understand that the subject was dismissed by the committee as being a matter which should be discussed by the State Legislature and not by the Constitutional Convention, called together for a different purpose.

It is unfortunate that broad principles cannot be discussed without the interpolation of material that is personal—thus diverting attention from that which is general in its bearings to that which is personal.

The Medical College of Virginia has issued a pamphlet that contains some of the prepared papers read before the committee, but does not

contain the discussions. Whoever is interested in this matter can receive a full report in pamphlet form of all the speeches and discussions, stenographically reported, that occurred about the matter, by addressing a postal request to Mr. William R. Miller, 1112 east Clay street, Richmond, Va.

Monument to Dr. Hunter McGuire.

"The Hunter McGuire Memorial Association," as we go to press, has just secured the unanimous consent of the Committee on Public Grounds, etc., of one branch of the Virginia Legislature—now in session—to place the monument proposed to be erected to the memory of Dr. Hunter McGuire in the Capitol Square, Richmond, Va. Statues and monuments of Virginia warriors and statesmen already ornament the grounds; and there is no reason whatsoever why space in the Capitol Square may not be granted to the monument of the surgeon whose name was linked with that of "Stonewall" Jackson in greatness, and whose reputation had become far more than national. It is so seldom that we find States willing to give place in their parks to perpetuate the memory of other than warriors or statesmen that the medical profession should especially be proud of the fact that it has gained this step to State recognition.

The Seaboard Medical Association

Held a most profitable meeting December 17th and 18th, 1901, at Norfolk, Va. Dr. J. E. Sebrell, of Courtland, Va., presided with dignity and ease. Dr. Livius Lankford, of Norfolk, Va., delivered the *Address of Welcome* in behalf of the profession of Norfolk, Portsmouth and Berkley. Dr. H. W. Lewis, of Jackson, N. C., responded in the name of the visitors. Dr. A. K. Tayloe, of Washington, N. C., delivered the annual oration—subject, "Duty." Of the forty papers read and discussed during the session, most of them were exceedingly well prepared. Nearly every member in attendance expressed himself as being greatly helped by the papers. Dr. J. R. Gildersleeve, Tazewell, Va., ex-president of the Medical Society of Virginia, was in attendance during each of the sessions. Three banquets and "an old Virginia oyster roast" at Ocean View, Va., were among the entertainments provided. Rarely have medical men enjoyed such feasts.

The Association is to meet during the fall

or winter of 1902 at Wilson, N. C. The following officers were elected for the current session of 1902: *President*, Dr. Albert Anderson, Wilson, N. C.; *Vice-Presidents*, Drs. J. F. Bryant, Franklin, Va., and Armistead K. Tayloe, of Washington, N. C.; *Secretary*, Dr. John A. Bagby, Newport News, Va.; *Treasurer*, Dr. Israel Brown, Norfolk, Va.; *Orator for 1902*, Dr. Stanley H. Graves, Norfolk, Va.

Thus closed the most successful meeting this far held of the Seaboard Medical Association.

Book Notices, etc.,

Are accidentally crowded out of this issue— a number of which have been prepared; also news items, obituary notices, etc. The annual volume concludes with the next issue, and we hope to have room in that issue for all matter accepted for this annual volume.

Validity of the Phenacetin Patent Affirmed.

The United States Circuit Court of Appeals, Third Circuit—the court of last resort—on February 5, 1902, filed its decree, affirming the validity of the Phenacetin Patent. As this is the court from which there is no appeal, the Farbenfabriken of Elberfeld Co., 40 Stone street, New York city, has just issued a warning to druggists, notifying infringers that they will be relentlessly pursued to the full extent of the law, because every one who has infringed has done so wilfully, and with full warning as to the danger which they incurred. "Infringers who have hoped to escape responsibility by secret purchases from peddlers, or through the mails, will find that their transactions are known to the patentees, and they will have no one to share with them either the defence of the suit or payment of damages." Druggists will find it to their interest to carefully read the pamphlet.

In Tongaline and Lithia Tablets the laxative and cathartic effects of Tongaline, being combined with the diuretic action of lithium salicylate, the kidneys are not compelled to do all the work as is the case when lithia salts or lithia waters are administered, but are materially assisted by the extraordinary eliminative action of Tongaline upon the other emunctories.

THE Virginia Medical Semi-Monthly.

(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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Original Communications.

HAEMOPTYSIS.*

By JOHNSON ELIOT, M. D., Washington, D. C.

This subject is suggested by rather an unusual number of cases seen during the past summer and fall, and it is with the thought that if others have had similar experience, to assign some reason for their frequency.

My cases varied in severity from a mere coloration to a profuse flow, and but one terminated fatally.

In this paper nothing new or original is attempted, but only a *resume* upon present knowledge.

Hæmoptysis, as defined by Billings, is an expectoration of the blood from the lungs and air passages below the epiglottis. This is, I think, a little broad, as hemorrhage from the larynx, such as is often seen in singers when forcing the voice, or in others making use of the voice in a faulty manner, would be wrongly included.

I would limit the term to hemorrhage taking place in the bronchioles and pulmonary tissues. This, unnecessary to give an anatomical description of the lungs, is as an ever branching tree, beginning at the trachea and ending in the alveoli of a spongy nature, supplied with nerves, unstriated muscular fibre, and plentifully supplied with blood vessels.

The vessels expanding, on one hand, from the pulmonary artery and contracting on the other to the pulmonary vein.

Hæmoptysis is not in itself a disease, but dependent upon various causes, the chief of which is tuberculosis, and to this the paper will be limited.

Many authorities say little upon this subject, passing it with bare mention.

It is met with in all stages, but of the first stage I would speak, referring naturally to pulmonary tuberculosis.

* Read before the Medical and Surgical Society of the District of Columbia, January 2, 1902.

A majority of the cases of phthisis go through the entire course of disease without having hemorrhage; the remarks, however, will be limited to those in which it does occur.

Hæmoptysis should not be lightly regarded as Stricker's investigations in the German army show. Presumably, only healthy individuals would be found here. During a period of five years there were admitted to the military hospitals 900 patients suffering with pulmonary hemorrhage. He divided the cases into three classes—those occurring spontaneously with no apparent cause, those where cause may have been some military exertion, such as drills, and those from injury. Of those without cause, 86 per cent.; of those with cause, 74 per cent., and those from injury, 50 per cent. subsequently developed tuberculosis. I am aware of the belief that hemorrhage does not predispose to phthisis, but these statistics are exceedingly perplexing.

We find the greater number of hemorrhages in adults and the middle age. Aker, of this city, reports a fatal case in a child of three years.

Sexes are about equally affected, a slight excess of males being in my cases.

Naturally it would be found more in localities where tuberculosis is prevalent, such as dampness and soil conditions.

The immediate cause being the giving away of vessels under strain greater than the vessels can stand, when hemorrhage occurs in the early stage of phthisis the vessels will be in a state of nuclear proliferation, or by a consolidation of tissues blocked, favoring a venous stasis, and also partaking of the general weakened condition of the system. Small, aneurysmal dilatations, or necrotic spots of erosion, are found.

The bleeding may be either arterial oozing or from a ruptured vessel of large size—an important distinction to make as having a direct bearing upon the treatment. The diagnosis is easily made, when from a capillary oozing the blood is raised with little difficulty by coughing, is frothy, mixed with mucous

either streaked or bright red. There is the sensation of heat and oppression in the chest, and always an undue amount of nervous excitement.

Osler states that when blood is brought up in large quantities, mouthful at a time, it comes from either an eroded vessel of large size or from a ruptured aneurysmal dilatation. Such profuse hemorrhages occur when cavities have formed and the arteries laid bare.

In examining the patient he should be disturbed no more than absolutely necessary, auscultation should be used, strong percussion is contraindicated, as well as other active means of physical exploration, until bleeding ceases or has been arrested.

The prognosis varies. When due to cardiac lesions, or cancerous affections, the outlook is bad.

In tuberculosis I have met with only one fatal case directly due to hemorrhage. The patient, a female 18 years of age, having a large cavity in the lower lobe of left lung. For two days had small, recurrent bleedings, when, without cause, blood gushed from the mouth, and death ensued in a few minutes.

Most persons, unless depleted by excessive bleeding, claim relief from the pulmonary trouble following the bleeding and frequently improvement is noted from that time. Possibly the occurrence of hemorrhage causes a realization of the conditions, making them more careful in regard to their general health or hygiene. The treatment is both immediate and remote. It is impossible to secure the bleeding vessel by surgical means. The bleeding should be stopped and measures instituted for a general tubercular treatment, which would prevent a recurrence.

The nervous excitement which is always prominent, should be allayed by the use of opium, hypodermically administered. At the same time, to prevent the bowels from becoming locked, a cathartic, preferably a saline, given.

Absolute rest should be enjoined, the patient prohibited from talking, the head and shoulders raised and ligatures applied tightly around the limbs.

The room should be cool, crushed ice sucked, and an ice bag applied to the chest. The controlling influence of ice upon the pulmonary vaso-motor system is not thoroughly established, but Rossbach's experiments show that the tracheal mucous membrane may be influenced by external applications.

He further proved that a continuous application of ice to the chest induced congestion of a nervous type. It should be applied for about half an hour, and then removed.

Warm applications, dry cupping and mustard, by relieving the internal vessels, have been recommended. An unstimulating diet, and unless in collapse, alcohol should be withheld, using hyoseyamus or camphor.

Under diagnosis, it was stated that the size of the vessel influenced the treatment. Ergot and digitalis, by contracting the arteries, favor the closure of the small vessels, but at the same time raising the blood pressure. When the large vessels are ruptured, they are useless. Here the treatment should be expectant.

In capillary hemorrhage they, with atropia, are my preference, and I think their contracting power far outweighs the raised blood pressure of the general system.

In robust individuals vivisection has been practiced. The use of nauseants, ipecac, until emesis is induced, is recommended by some. Gallic acid, acetate of lead, and alum interfere with the digestive organs, though also raising blood pressure, they are largely used. Acetate of lead causes most violent gastralgia; chloride of lime, in large doses, gives good results by increasing the coagulability of the blood, and also, according to Ingals, arresting the disease.

Gelatine injections are also spoken of highly. They are used hypodermically, injected into the skin of the abdomen.

Hemorrhage has occurred under all forms of treatment, but I have noticed a small majority of hemorrhages occurred in those taking either the iron or manganese salts.

The hygienic conditions should be inquired into, and in the early stages sanitarium treatment should be instituted. An elevation of 1,600 to 1,800 feet does not predispose to hemorrhage.

Hoagland and Campbell, insisting that there is only an apparent increase of red cells, 50,000 corpuscles to c. c. per 1,000 feet. This increase is at the expense of the internal circulation, and soon subsides.

718 H Street, N. E.

As the result of numerous clinical tests, it has been found that an injection of Tongaline is a specific for hydrocele.

SYPHILIS DOMESTICA.*

By JAMES THACHER BOUTELLE, M. D., Hampton, Va.

Family syphilis is the syphilis of the virtuous and innocent, that midnight assassin of health that creeps upon its victim unawares, and whose injuries appear sometimes long after the first stroke is given, and whose tracks are so well covered by the innocence, ignorance and respectability of the victim that we, the guardians of the family health, are often for a long time deceived as to the nature of the malady. In the vicious and the dissipated, we are on the watch for this disease, and readily recognize it in spite of all the falsehoods that can be invented, and we also easily recognize the fault of parents or grand-parents in the hereditary forms of infantile syphilis, and in the peculiar teeth and strenuous diathesis of adults, but occasionally when it makes its appearance in some doubtful or obscure form, or is an adjunct complicating other diseases in patients, whose lives and surroundings seem to preclude any suspicion of a lack of virtue, and no history of accidental infection is known, a physician is naturally slow in arriving at a correct diagnosis.

Before going further into this matter, I will speak of certain peculiar and obscure forms of syphilis which are sometimes met with, and which serve to illustrate the difficulty of a quick diagnosis in cases presumably virtuous in the highest degree.

It is occasionally found that after a primary lesion the secondary lesions do not appear, generally on account of thorough medical treatment, but in rare cases, when no treatment has been given, the first manifestation may be a tertiary lesion years after the appearance of the chancre. In two cases I have found tertiary lesions, without obtaining any history of primary or secondary. Dr. E. L. Keyes, in his work on venereal diseases, states: "More rarely the secondary stage may be skipped entirely, this also usually under treatment, and the disease may only show itself after a longer or shorter period of latency, in the tertiary gummatous stage. I have seen a number of instances of this sort occurring after almost every variety of treatment, and after no treatment at all."

None of several other authorities that I have consulted mention this fact, all stating that the primary is invariably followed by secondary within two years.

I will illustrate this by narrating some cases from my own experience:

CASE I.—A young man, of excellent character and habits, was led by some companions into a spree, and while intoxicated had connection with a prostitute. Soon after a small sore appeared upon the penis, which was pronounced by an excellent surgeon to be a chancre. He was treated promptly, and had none of the secondary eruptions, and considered himself well until about five years after, when a gumma formed in the antum of Highmore, and went rapidly on to complete destruction of vomer, palate, nasal bones, etc., and he barely escaped with his life, but with deformity enough to ruin his life and prospects.

CASE II.—About 12 years ago a respectable man of middle age, married, with children, I believe, but have never seen them, consulted me for a tumor in the middle of one buttock, for which excision had been advised by some physician. It was situated over the middle of the gluteal muscles, about the size and shape of a hen's egg. It resembled either a fatty tumor or a wen, but was too hard for a wen, and did not present the diagnostic characteristics of fatty tumor. It was not adherent, and was evidently not malignant. I was at a loss to make a diagnosis, until he told me that about 12 years before he had syphilis, and was thoroughly treated by a fort surgeon and entirely cured, and had had no symptoms whatever for more than ten years. That settled the diagnosis of gumma immediately, and I declined to operate until I had tried medical measures. I gave him the mixed treatment, biniodide of mercury and potassium iodid, and the tumor was gradually absorbed, and was entirely gone in about three weeks. I then treated him off and on for about a year pretty thoroughly, and then considered him well. A few years after this Dr. Williams mentioned to me that this gentleman was losing his mind and becoming parietic, and had gone to Baltimore for treatment at Johns Hopkins Hospital. It immediately occurred to me that there must exist a gummatous tumor of the brain, and I gave Dr. Williams the history of his case as I knew it, and advised his notifying the Baltimore doctors of these facts, which he did, and the patient was restored to health, came home, and resumed his former employment. He has died within a year or two, but I do not know the particulars of his last illness.

CASE III.—A respectable colored man, with wife and family, industrious and of good habits,

* Read before the Elizabeth City County Medical Society, January 13, 1902.

consulted me for severe pains in his breast. After stripping him for examination, I noticed several small tumors at different points over some of the ribs; they varied in size, the largest being about the size of half an English walnut, rounded in shape, but tender. I found no disease of the thoracic viscera. As these tumors were evidently not the ordinary fatty tumor, I suspected gummata, having then the case just reported in mind, and questioned him closely about chancre, eruptions, glandular swellings, etc. He denied ever having had anything but a slight gonorrhoea in his youth, could not remember ever having had a sore or any eruption, and a careful examination showed no signs of scars on skin or mucous membranes. Apparently he was perfectly willing to own up to anything he could remember. I put him upon mixed treatment for syphilis, and the pains were soon relieved, and the tumors disappeared.

CASE IV.—A white man, married, with two healthy children and healthy wife, complained of strange sensations, a feeling of weight, and pain in one side of his head; often this would overcome him so that he would have to stop work and sit down. After a short time he would burst out with a profuse sweat and be entirely relieved for a time. He was a strong, vigorous man physically and mentally. He became very discouraged, as no treatment seemed to do any good. Finally one side became slightly paralyzed. I then questioned him as to syphilis, and he stated that he had never had intercourse with a prostitute, but on one occasion ten or twelve years before his present illness, or before he was married, he had exchanged kisses with one, and soon after had a sore mouth, which one doctor said was nothing, but another declared it syphilitic, and put him on treatment, which cured it. He had never had any other symptom whatever. I then began the mixed treatment of hydrag. biniodid. and potass. iodid., and he rapidly recovered from the paralysis and headache. I will say that I had treated this man's father previously for paralysis of one side, which I do not know to have been a result of syphilis, and did not think so, as he had many children, all healthy except one, who died of phthisis. After a short period of health, my patient was again paralyzed completely on one side, and became so weak that his life was despaired of. But on large doses of potass. iodid., which he stood remarkably, taking 400 grains a day for two or three weeks, with occasionally 500 grains in a day, he was again restored and

gradually regained the use of the side. It is curious that during his convalescence, while still considerably paralyzed, he begat one healthy child, and since its birth has laid the foundation of another. About a year after his recovery from the paralysis, he was attacked with hiccough, for which I tried everything I knew, inhalations of amyl nitrite giving temporary relief, but the singultus gradually grew worse until he took to bed. I then gave the potass. iod. again in very large doses, stopping the hiccough in a few days.

Last fall, about two years after his recovery from hemiplegia, he consulted me for rheumatism, which was readily relieved by aspirin in 15 grain doses, but which returned at intervals. Two or three months ago he began to suffer from pain in one little toe, especially severe at night or when he was sitting still. Ichthyol applications did no good, and aspirin gave only temporary relief. I considered it rheumatic, but ordinary treatment did no good, and he consulted two other physicians, and received treatment for gout. About three weeks ago he came to me stating that the pain was intolerable, and that he could get no rest at night, and that the pain began in the leg and reached its intensity in the toe. The toe was not red or swollen, but was very tender to touch. He was willing to have the toe amputated, and at first I thought this might be necessary, but as the pain was in the leg also, and worse at night, I decided, remembering my former experiences with him, that it was a symptomatic pain of nerve syphilis, and put him on potass. iodid., beginning with gr. xv. t. i. d., and increasing gr. xv. per diem. When he reached 165 grains a day the pain had entirely gone, and has not returned.

These cases are sufficient to show that the diagnosis of syphilis is not always easy in obscure cases. The case of paresis I have mentioned might have gone on to complete destruction of intellect, as the patient did not then have sense enough to inform his physician of his previous experience, and in the case of paraplegia, my only reason for suspecting it was that I could not think of any other cause. If I had not had this experience when the attack of singultus occurred, I dare say the patient would have hiccoughed himself to death. But these cases occurred in men into whose history we are more likely to inquire, knowing the chances of fallibility in the youthful flesh of the male. When, however, some obscure form occurs in a woman, whom we have every reason to judge

pure, and no reason for suspecting the husband of being syphilitic, our difficulty becomes greatly increased. It is a delicate matter to handle, and too pointed an inquiry may destroy the happiness of a household. We may cause the wife to suspect the husband, or vice versa. If we ask the husband if he has ever had syphilis, and he has not, he suspects immediately that we have diagnosed it in his wife's case. He would probably not own up to it if he had. Perhaps it is best not to be too curious, and, at any rate, to be absolutely sure of the diagnosis before hinting at blood poisoning. To treat the case and say nothing to any one I think the best rule of conduct. The disease may have been communicated by a nurse or "granny" during a confinement, or by some of the rare accidental ways other than sexual intercourse. Of course, this rule applies only to the late or obscure forms, for, if acute secondary symptoms exist, we are obliged to say, "blood poisoning," and advise all precautions against infection of the rest of the family. The following cases are of interest in this connection, and have suggested the subject of this paper:

The first case occurred in 1885. A lady of good family and high character, twice married. The first husband was a confirmed steady drinker, and died of disease of the liver. By him she had two healthy and strong children. The second husband was a periodical drunkard. I had treated him at times for the effect of sprees, but never for venereal disease, and I had no reason to suspect him of syphilis other than the fact that all drunkards are especially liable to contract the disease. I was not the family physician, but was called to attend the husband through an attack of acute rheumatism. During my attendance the wife consulted me for rheumatic pains in the limbs, from which she had suffered greatly for a long time. The pains were not in the joints, but in the ribs, arms, and limbs. They were worse at night, and she used opiates to get any sleep or relief from pain. On examination, I found the bones studded with very numerous small nodes. As far as I could ascertain by judicious questioning, she had never had any of the secondary forms of syphilis. A mixed treatment of hydrarg. biniod. and potass. iodid. soon gave perfect relief from pain, and the nodes gradually absorbed, I believe, or at any rate were much less noticeable when I left the case. After the recovery of her husband and herself, her former physician was employed, but discharged again the following

year, as she was very ill and got no relief from his treatment. This time I found her with a very intense syphilitic iritis. Pain was agonizing, and photophobia excessive. She was very weak, nervous and hysterical, and at first opiates were necessary very freely to relieve pain and excitement, but again the mixed treatment gave relief, one eye becoming very good, but the other still slightly inflamed. After the acute symptoms had passed away, she again employed her family physician. I treated her no more, but he called in a surgeon from a distance, who removed one eye. She has died within a few years, but I do not know any details of her last illness. The husband died of paralysis a few years ago. In this case, finding the small nodes gave me the clue to the diagnosis. I do not think her physician ever suspected syphilis or treated her properly for it. I never tried to discover how the syphilis was acquired, and all my questions were as to the occurrence of previous sores, eruptions, etc., all of which she denied. The peculiar interest of the case is the appearance of tertiary lesions, with no history of primary or secondary.

The other case is more recent, and although almost entirely well, is still under treatment. A young married lady of irreproachable character. Her husband is a clean-looking man, of good habits, industrious and respected. They have two children, the eldest strong and well, except for chronic enlarged tonsils. The other, about 3 years old, has had infantile paralysis, and walks "parrot-toed." The valgus internus is most marked in one of the feet. Her father and mother I have known for many years, and they are healthy old people. I had never treated her before, but was called to attend her for ulcer of the leg, which had existed three or four months, causing great pain and lameness. She had decided to go to bed and put herself under my treatment. The ulcer was upon the anterior surface of the leg, about the middle, about 1 1-2 inches in diameter, rather superficial, inflamed and surrounded by a large areola of inflamed skin. Surface of ulcer red, adjacent parts very tender. At first I considered it a simple inflamed chronic ulcer of the leg, and treated it with local applications and rest in bed, but in the course of my attendance other symptoms became noticeable. She said she had suffered from rheumatism for several years, and now could not sleep at night on account of pain in the affected limb, from the hip down. Aspirin in 15 grain doses relieved this pain, but she had

to take it every night to get relief. She feared that another ulcer was coming upon the other leg, as there was a slight swelling about the middle of it, which was the way in which the first ulcer had appeared. I found a slight induration, but nothing more. Soon after a round swelling came upon the forehead, having the appearance of a boil, and this I proposed to lance when pus formed. She then complained of rheumatism in one wrist, and here I found a small lump, movable, on anterior surface about two inches above radial articulation. At this I began to suspect syphilitic disease, but did not feel absolutely certain. The leg ulcer was anterior, and we may take it as a certainty that as a rule all ulcers anterior to the middle are simple or varicose, and all posterior to the middle line are syphilitic. But there is no rule without exceptions. When the lump on the forehead reached the size of a chestnut it became reddened, but not very tender, and I thought I detected fluctuation. On opening it only a drop or two of thin pus escaped, and the mass cut like soft gristle. This made me certain that I was dealing with gumma and syphilitic pains, so I began treatment with hydrarg. proto-iodid. The gumma I had lanced began to subside and heal, the rheumatism improved, and the ulcer of the leg began to cicatrize rapidly at the edges. Soon after I began the mixed treatment with gratifying results, the gummata disappeared, and the ulcer healed entirely, and she resumed her household duties wearing an elastic stocking. After remaining in good health about a month she was attacked with paralysis of one side of the face, the mouth being drawn to one side. There was complete loss of power in the eyelid of the affected side, with inability to close the lids at all, and vision was partially lost. Of course, I diagnosed gumma of the brain. Resumed the mixed treatment as before, but got little benefit. Then gave sat. sol. potass. iodid., increasing the dose every day until she took 72 grains a day, at which dose I continued, as all the symptoms were rapidly subsiding. At the present time the paralysis has almost entirely gone, but I shall continue the treatment for a considerable time. In answer to my questions, she said she had never been ill except with the ordinary diseases of childhood, never had any eruptions on the skin, sore throat, or glandular swellings. Had always been very healthy up to the birth of her first child, since when she had suffered more or less from rheumatic pains.

This case is evidently not hereditary syphilis,

as the symptoms are the regular tertiary of acquired syphilis. As a matter of curiosity, I should like to know if the husband had ever had syphilis, but do not like to ask, for fear of arousing mutual suspicions and causing family unhappiness, whereas by holding my tongue and keeping my knowledge to myself, I am armed for treatment on any further occasion. I propose to lock the skeleton up in my cupboard.

The chief lesson to be drawn from these cases, seems to me, that we must not allow ourselves to be blinded to the existence of this infernal scourge by respectability, refinement, innocence and purity of life, as these are not always safeguards against the insidious foe.

THE PHYSIOLOGY OF THE PROTEIDS, WITH ITS BEARING ON THE DIETETICS AND TREATMENT OF URAEMIA.*

By GREER BAUGHMAN, M. D., Richmond, Va.

The name proteid is given to that large class of food stuffs which contains N in their make up.

In the mouth they undergo no digestion, being merely chewed up, mixed with the alkaline saliva, and swallowed in the shape of a bolus.

The HCl of the stomach combines with the now alkaline proteids and causes some of them to become acid albumins, also called synoin. The pepsin causes a series of hydrolytic changes to take place in these acid albumins, whereby the complex acid albumins combine with water and split up into more simple compounds, known as proto- and hetero-proteoses, which, under the influence of pepsin, again combine with H₂O, forming other proteoses (dentero-protease), and these, in their turn, by hydrolytic cleavage, form peptones.

Upon passing into the intestines it was formerly thought that alkali albumin was formed from the remaining proteids. But now it is believed that the more powerful trypsin of the pancreas acts directly on the reindigested nitrogenous food, and by hydrolytic cleavage turns it into dentero-proteose, and finally into peptones. One of the peptones, known as hemipeptone, is further reduced to even simpler substances, known as amido-acids.

The final products of the proteids, which are

* Read before the Richmond Academy of Medicine and Surgery, January, 1902.

found in the intestines are: peptones, leusin, tyrosin, aspartic acid, gentomic acid, lysin, tryptophan.

None of the proteids are absorbed in the mouth, because no chemical change takes place there in them.

But little is known about the absorption of proteids in the stomach; some, however, are absorbed there.

It has been estimated that 85 per cent. of proteids are absorbed before they reach the large intestine. As we have seen, most of this must have taken place in the small intestines.

This leaves 15 per cent. to be absorbed in the large intestine.

The proteoses and peptones are absorbed with great avidity by the intestines. We know also that proteids, which have not undergone any change, may be taken up by the bowel, for instance, enemas of egg, milk, and beef juice, even that which has not been previously digested by pepsin, etc. Acid albumin (syntonin) has the power of slowly passing through the intestinal wall. Leusin and tyrosin, as well as the other end products, are slowly absorbed.

A very interesting and poorly understood process takes place as these substances pass through the cells of the intestinal wall. It is a known fact that peptones are never found in the blood. When injected into the blood they act as a poison, even killing the animal. In the cells of the intestines they undergo a dehydration and a recombination into more complex albumins.

They are finally discharged into the capillary blood vessels, and not into the lacteals.

The blood of a man 25 years old contains 191.70 parts of proteids and extractives in 1000. The proteids are fibrinogen, paraglobulin (serum globulin) and serum albumin; combined proteids are hæmoglobin and nucleo-albumins; extractives are fats, sugars, urea, lecithin cholesterin, etc.

All of the proteids absorbed from the intestinal tract are carried through the liver by the portal vein. In the liver they stimulate the formation of the bile, and are then carried by the hepatic vein and vena cava, to the right heart, through the lungs to the left heart, and from there are pumped into the tissues of the body.

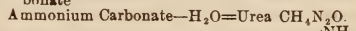
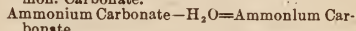
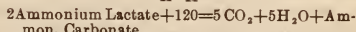
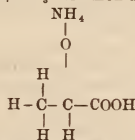
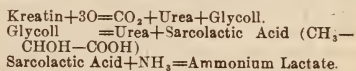
According to Voit, the proteids are used in two ways by the tissues of the body to produce energy and heat. They may be directly katabolized as they may first be anabolized to form tissue cells, and then katabolized to form energy. This theory is not accepted by all physiologists.

Just how the proteids are broken up and finally brought down to urea is not positively known. We are pretty certain, however, that one or both of two processes are used:

(1) Some are reduced to CO_2 , H_2O , and NH_3 , in part recombined, forming urea.

(2) Some more directly; glycoll, leusin, kreatin, sarcolactic acid being mild products of the katabolism.

Probably kreatin, which is largely found in muscle, is the principal mid product by which the albumins are broken up, producing energy and finally converted into urea, which is eliminated from our system by way of the kidneys.



The kreatin in our bodies has two sources: 1. It comes from lean meat eaten, in which case it is carried to the liver, dehydrated, forming kreatinin, and eliminated from the kidneys in that shape; 2. the kreatin in our own muscles after exercise. This undergoes the cleavages probably as shown before, and gives into the blood sarcolactic acid, ammonium lactate, and ammonium carbonate. These three substances circulate through the liver, and are there converted finally into urea.

It is not absolutely necessary for the liver to do this final process of conversion into urea, because we find that even after the removal of the liver in animals, urea continues to appear in the urine. The same occurs in cases of severe degeneration of the liver. Some of the final change may and does take place in the other glands of the body.

To sum up: Proteids are changed in the intestine and stomach into peptones, which are absorbed into the blood as albumins. These pass through the liver, stimulating the formation of bile, and are finally, by means of the blood vessels and capillaries, carried into the

tissues; here part are directly katabolized, part build up the cells, and are finally katabolized into sarcolactic acid, ammonium lactate and ammonium carbonate, more of the latter. These substances, carried by the lymph, are finally changed in the liver and other glands into urea.

It has been found that the urea output remains pretty much the same—whether resting quietly or undergoing violent exercise. So we must conclude that in addition to being used as energy, a good part of the proteids are burned up as heat, though the muscles be at rest.

The only storehouse for the urea is the blood; as fast as it is manufactured in the liver it passes out into the blood current. Urea is constantly present in the blood from .0348 per cent. to .1529 per cent., and if the two kidneys are removed it constantly increases in amount till the animal dies.

Urea leaves our bodies by the kidneys, bile, skin and milk. In the kidneys we have, in 24 hours, about 30-34 grammes on an average (13) this is 2 per cent. of the substance of the urine. Not only does the N leave by means of urea, but also by kreatinin, uric acid, hippuric acid, xanthin bodies and amido-acids. The tubules excrete the urea, the lining cells of the tubules selecting the urea from the blood.

The skin may excrete an appreciable amount of urea—8 grammes in 24 hours. Nitrogen also is gotten rid of here by the kreatinin. According to Reid, 4.7 per cent. of the N given off from the body is excreted by the skin. This quantity is greatly increased during uræmia.

Both bile and human milk have traces of urea.

Although not being at all certain as to just what causes the symptoms which we group under the head of uræmia, there are certain facts with which we are acquainted:

(1) That the urea is always diminished in the urine. This is one of the earliest and most delicate tests for nephritis

(2) That albumin and casts are present in the suddenly diminished urine.

(3) That there is usually some well marked lesion in the kidneys.

(4) That œdema is almost always present.

(5) That the arteries are contracted, pulse increased in tension.

(6) That there is local œdema of the brain frequently.

(7) That small punctate hemorrhages are found in the liver and kidneys often, usually in puerperal eclampsia.

Some of the theories advanced as to the causation are:

(a) Retention of urea in the blood, with change of it into am. carb.

(b) Sudden increase in the arterial pressure, passing through the diseased arteries of serum with acute œdema of the brain. This serum, in turn, pressing on the vessels of the brain, causing anæmia with the attending convulsions, or coma.

(c) The most probable is that the increased quantity of urea, or some other product of the urine, which is not expelled, causes a contraction of the vessels of the spinal cord and brain, with the production of anæmia and attendant cramps.

It seems to me that the treatment of uræmia should be started in anticipation of its arrival, and should resolve itself into—

(1) Stoppage of income of proteids.

(2) Prevention of the formation of urea in the body.

(3) Hastening the elimination of urea by the unusual channels after the kidneys have been tried and fail.

(4) Treatment of the attack.

(1) We can prevent the income of proteids by appropriate food. In order to do this we must remember not only that sirloin steak has prot. 15; leg mutton, 15; pork shoulder, 13.6; turkey, 16.1; oysters, 6; milk, 3.6; but also that vegetables contain a great amount of N; peas having 26; beans, 23; corn meal, 19.2. From among these we would naturally choose milk.

(2) Rest in bed will meet the second requirement. While muscular rest at first does not affect the metabolism of proteids (the free proteids being still manufactured into heat), the continued rest in bed, with no proteid food, will finally get rid of all the uncombined proteids, and then there will begin a lessening of the urea.

(3) The sweat normally contains quite an appreciable amount of urea, so we would naturally stimulate that by hot packs, drugs, etc.

The same applies to the flow of the bile. And it seems to me more sensible to use calomel, which clears out the duodenum, allowing the bile to flow, rather than a cholagogue, which might stimulate the liver to an increased activity in the manufacture of urea; where uræmia is actually present, one of the hydragogues is better, quicker.

The best way of all to get rid of the urea in

the blood is to bleed and replace the blood lost with normal saline solution subcutaneously.

(4) The attack is to be controlled with injections of morphine, start with 1-2 grain every 2 hours, or by inhalations of chloroform with chloral (30 grs.). *Veratum viride* has been found useful.

Let me, in conclusion, emphasize the necessity of proper diet, rest in bed, and that old-fashioned method of treatment, bleeding, combined with normal saline infusion.

THE PHYSIOLOGY AND PATHOLOGY OF METABOLISM.*

By G. W. DRAKE, M. D., Hollins, Va.

The effect of normal metabolism is health; the effect of abnormal metabolism is sickness—acute or chronic, momentary or longer.

The sickness is in the cells in which the abnormal metabolism occurs. It may begin in a few cells, and extend to many others, contiguous or far removed.

The purpose of this paper is to impress the importance of knowing the rules that regulate normal metabolism, and of recognizing the early symptoms of abnormal metabolism.

The rules of normal metabolism are learned by studying physiology, and we are glad to note that physiology is a compulsory study in the public schools of our country, and that the teachers in these schools are required to pass a satisfactory examination in this important science before having committed to their care the training of the youth of our land.

The *φασκυ-λογία*, or nature science, should no longer be considered a medical science, but take its place among the natural sciences.

Nothing would contribute more to the health and longevity of the human race than a universal knowledge of hygienic physiology. It should be compulsory in the curriculum of every high school, college and university in our country.

Metabolism, as applied to the tissues of the human body, is the compound process of throwing down old matter and taking up new, constituting an essential part of the life history of all animal cells.

The maintenance of the proper balance be-

tween the two processes anabolism and katabolism is normal metabolism; a disturbance of equilibrium is abnormal metabolism.

Material man is a mass of tissues; tissue, a mass of cells; cell, a mass of molecules; molecules, a mass of atoms; atom, the indivisible unit of matter.

The physiologic function of the cell depends on the number, nature and relative positions of the molecules in its protoplasm, and the atoms in the molecule.

The sum of the functions of the cells constitute the function of a tissue or organ, and the sum of the functions of the tissues is the function of the whole body.

As the cell is the histologic and physiologic unit of the organism, its normal metabolism is of paramount importance.

Life is in the cells of the body, and will continue so long as normal metabolism is maintained.

The most essential constituent of the cell is the nucleus. It is, in my opinion, a little storage battery of energy, which furnishes the motive power for nutritive motion, reproductive motion, and locomotion.

The most important constituents of the nucleus are the nuclein molecules. Any deficit in these molecules impairs the activity of the cells, and is a forerunner of abnormal metabolism.

Normal metabolism depends on a proper supply of food to the cells, and a constant renewal of energy from the nerve centres in the brain and spinal cord.

The blood may carry around in its circulation food for the tissue cells, but if they are not continuously reinforced by energy from the nerve centres, they will not appropriate nutritive matter, and will shrivel and die.

The nervous, muscular and other tissues often suffer starvation, and are denied nutrition, because the stomach is not hungry.

Anorexia is an expression of the abnormal metabolism of the gastric cells, and is a serious trouble, demanding prompt treatment, because waste does not wait for repair, but continues independently of food supply.

The preparation of food for the various tissues of the body depends on the normal metabolism of specific glandular cells in the alimentary canal and its accessory organs.

The enzymes are the normal metabolites of these cells, and when deficient, indicate a condition of abnormal metabolism of the digestive organs, which needs to be corrected.

* Read before the Medical Society of Virginia, at its session in Lynchburg, November 5-7, 1901.

The usual treatment of such conditions is by the administration of pharmaceutical enzymes.

This is rational therapeutics, but the reason, in my judgment, is not in the direct action of these ferments on the ingested food, but rather in their nutritive and stimulative effect on the glands of the digestive organs.

For this reason it is best to administer them before and after meals, allowing sufficient time for them to be absorbed and to reach the glandular cells, which they are designed to stimulate to increased metabolism.

This theory answers the objection to giving the pancreatic ferments by the stomach on account of the absence of the alkaline medium essential to their action, the purpose being to stimulate the pancreas—not to supply directly the deficient ferments.

In the treatment of indigestion, whether buccal, intestinal, or gastric, all the ferments may be administered effectively by the stomach.

The health of the human organism means the health of its tissue cells, and is the expression of the normal metabolism of all its organs.

Abnormal metabolism may affect either circumscribed areas or extensive parts of the body, producing local hypertrophy or general obesity, local atrophy or general emaciation, tumors, benign or malignant, and all the other "ills flesh is heir to."

Only sick people complain. Imaginary diseases have a material basis of disorder. There is a material pathology for every ache and pain, or bad feeling of any kind; and it is the duty of the physician to interrogate every organ and tissue until he discovers the seat of the trouble.

Christian Science, faith cure, and all such therapeutic novelties, proceed on a false conception of disease in not recognizing its material origin.

Neurasthenia is a weakness of the nervous system, and is often caused by the presence of toxic substances formed from the products of the abnormal metabolism of its own or other tissues. These poisons need to be neutralized by antidotes or eliminated by evacuates.

Ennuis is often caused by auto-intoxication, and is frequently relieved by a dose of castor oil.

Diabetes mellitus is caused, not by the ingestion of too much carbo-hydrate food, but by the abnormal metabolism of the liver and pancreas, as shown by the persistence of glycosuria on a restricted proteid diet.

The normal metabolism of the liver and pancreas must be restored by therapeutics addressed to these organs, or the whole body will suffer.

It must be remembered that sugar can be made from proteids, but the body suffers emaciation when such material is used. Therefore carbo-hydrates should not be excluded from the diet of the diabetic.

Since abnormal metabolism is the basis of all the disorders and diseases of the body, its prevention and cure should be the chief study of physicians.

In the prevention of abnormal metabolism nothing is more essential than a normal diet—that is, one containing, in quantity and kind, its appropriate food for every tissue cell in the body. A healthy equilibrium must be maintained by ingesting measured quantities of proteids, carbo-hydrates, fats, water and minerals.

When the income of food is not equal to the expenditure of tissue metabolism, the individual is living on capital, and there is loss of body weight.

Nitrogenous equilibrium is not necessarily associated with carbon equilibrium. The loss and gain of N by the animal body may be equal at the same time that the loss and gain of C are unequal.

Carbon equilibrium is not so essential to the general health of the body as nitrogenous equilibrium, but it helps to maintain the latter by retarding metabolism.

With a scientific understanding of the chemistry of the external and internal secretions, also the blood, and all the excretions, it is impossible to study intelligently the various problems of abnormal metabolism.

Chemistry must furnish the key to unlock the hidden mysteries of physiology and pathology, and with its ptomaines and leukomaines, anabolites and katabolites, toxins and antitoxins, solve the problems of disease and its cure.

Physiologic and pathologic chemistry have made important discoveries in recent years, and have laid the foundation for more rational therapeutics.

As a result of these discoveries the laboratories of pharmaceutical chemists are teeming with a new line of medicines, animal extracts, which, in my opinion, are soon to take the place of the vegetable extracts and alkaloids.

Extracts of the stomach and pancreas have long been used for the diseases of these organs, but not until a comparatively recent date have extracts of thyroids, ovaries, testes, thymus, parotids, mammae, supra-renals, etc., been introduced into therapeutics.

The thyroids, supra-renals, and pituitary bodies are no longer mere anatomical curiosi-

ties, but are objects of physiologic interest and pharmacologic importance, and their chemical extracts are destined to occupy an important place in organotherapy.

The comparison of the products of normal metabolism with those of abnormal metabolism furnishes the indications for rational medication.

Poisonous products of abnormal metabolism require to be treated by biologic antitoxins, if caused by the presence of pathogenic bacteria; but if the result of autotoxæmia, by chemical antidotes and evacuants, or therapeutic agents from a contrary physiological action.

Let the good work go on of trying to discover an antitoxin for every bacterial toxin, and a physiological alternative for every form of abnormal metabolism.

In the study of the physiology and pathology of metabolism nothing is more essential than a practical knowledge of the chemistry of foods and the chemistry of waste products.

With such knowledge the physician is in a position to work out the problems of auto-intoxication by excess of waste products, including uric acid, but not excluding all the others.

I did not see in the paper or discussion that any one advised a plan which I have adopted—not in every case, but whenever there is the slightest laceration or any suspicion that sepsis might occur: I take a solution of carbolic acid and glycerine, one to thirty-two (about 3 per cent.), soak a ball of absorbent cotton about the size of a small walnut in this solution, and introduce it into the vagina about three inches. This may be renewed every twelve hours for several days. This does not *stop* the flow; on the contrary, it increases it, and helps to bring down the uterus to its normal size in a much shorter time.

And will it not prevent the entrance of the numerous germs and kill any that may be already in? I think so. Dr. Old calls attention to the fact that the "normal vaginal secretion is a very strong antiseptic and germicide," and that the "germs are in the vulvar canal." Well, then, the draining out of the liquid to which I have referred will render protection of all the parts against invaders.

I do not agree with Dr. Browning about letting the woman get up to use the commode, and thus wash out the vagina. I think there is danger of heart-clot. It is true that the Doctor says, "if the flow is not too great." But this point needs to be emphasized, and closely watched, for the flow is sometimes, taken altogether, much greater than we think.

And now, another thing. I notice that it is the opinion of some that the doctor ought not to examine the uterus with his finger more than *once*, or possibly *twice*. The reason given is the danger of infection. But will not the woman be running the gauntlet of other dangers? as, for instance, a slow and exhausting labor, or a lacerated perineum? I think by the proper guidance of the head we may save a perineum that would otherwise be rent in twain. And if the labor is slow, with pain after pain and no progress, may we not help the poor woman to "get through," as she so appealingly asks?

Now, this is a little off from the subject, but I will venture a suggestion. I was taught never to give ergot until after the head comes out. But I have laid aside this teaching, not for want of respect for my teachers (for I honor their memory), but because I think that when a man goes out to practice medicine, he ought not to pin himself too closely to the professors and text-books. But he ought to know what he wishes to accomplish, be thoroughly acquainted with the uses and powers and limitations of the

PROPHYLAXIS AND TREATMENT OF PUERPERAL SEPSIS.*

By CHARLES S. WEBB, M. D., Bowling Green, Va.

Formerly Professor of Practice of Medicine in Southern Medical College at Atlanta, Ga.

I have read with much pleasure and profit Dr. Edward McGuire's valuable paper on "*Prophylaxis and Treatment of Puerperal Sepsis*" in the issue of the *Virginia Medical Semi-Monthly* for February 21, 1901, and the discussion of the paper before the Medical Society of Virginia. I thank the Doctor and the others who endorsed him for his very vigorous protest against the intra-uterine douche. I have also given up the vaginal douche, except in special cases. I do not see that it ought to be used in *every* case, as advised by Dr. Lankford, nor do I use the "thick layer of cotton over the parts," which he thinks important to "prevent the micro-organisms from getting in."

*This paper was written in the form of Correspondence to the Editor of the *Medical Semi-Monthly*; but as it continues the discussion of the subject of *Prevention and Treatment of Puerperal Sepsis*, we have introduced it in this department as an "Original Article."

means at his disposal, and then proceed on what seems to be the best and safest plan for the welfare of his patient. And so, when the labor is slow, when the os has long been largely dilated, and is soft enough to be easily dilated to the fullest extent necessary, and still the labor drags along, I give five drops of ergot (fluid extract) every fifteen minutes, and watch the effect. I have thus delivered in two hours after beginning the ergot cases that I verily believe would have dragged along with pain after pain for twelve hours longer. Did it do any harm? None that I have ever seen, but, on the contrary, we often have the baby born alive which would otherwise have been dead from long pressure.

I have written this much, not with an idea of pushing my views on anybody, but realizing that medicine is not an exact science, I think that by the collision of opinions the truth is elicited.

I notice that in the discussion of Dr. McGuire's paper the doctors gave their experience as to mortality. So, let me say that I have never seen but two cases of puerperal sepsis, both fatal, and in neither of these cases was a physician called until after the initial chill. This speaks well for the "non-interference" plan, because (with the exception of five years in Atlanta) my practice (and *observation*) has been in small towns and the *country* where in very many cases the midwife is the only attendant.

Correspondence.

GASTRO-INTESTINAL THERAPY.

Editor Virginia Medical Semi-Monthly:

Sir.—Referring to the interesting contribution of Dr. J. N. Upshur, which appears in the issue of your journal for December 13, 1901, I should like to offer a number of suggestions by way of comment, as a means of supplementing his teachings bearing upon the therapeutics of gastro-intestinal disorders. Necessarily, I shall refer to the incompleteness of the measures proposed, in view of the fact that he speaks of the need for scientific investigation to discover and intelligently interpret the pathological conditions, complex, functional and organic, located in the gastro-intestinal tract, outside of it, proximate or remote. Nevertheless, these remarks are

couched in a friendly spirit, my sole object being to develop the physiological basis of treatment in accordance with the evidences furnished by modern scientific research.

Our author outlines the treatment as follows: (1) Diet; (2) drugs; (3) mechanical means, and (4) environment—to include proper exercise or complete rest—adding that the "indications for a successful therapy has as its foundation the discovery of the true cause"; but a critical examination of the paper shows that lavage is the principal feature in his therapeutic system. Indeed, the conclusion is almost irresistible that without lavage all treatment must be fruitless of results, and yet the successful management of many cases without it naturally leads to an inquiry as to whether or not this method is absolutely necessary. That it may prove advantageous in many instances is not denied, but that it is indispensable there is room for doubt, and for the very good reason that it does not remove the cause.

Cleansing the stomach by means of lavage, instead of being vaunted as our therapeutic goal, should rather be regarded as a station on the line, and a flag station at that, to be quarantined and renovated when the abnormal condition becomes aggravated; but proper precautions should be taken by the medical attendant to prevent this untoward condition by medication directed to the real cause, which, in most instances, is constitutional. This is a logical deduction, confirmed at every possible point both by physiological experimentation and clinical observation. Thus we employ apomorphine hypodermically to empty the stomach of a drunken man, and long before the drug has had time to reach the stomach, its specific action has not only emptied the organ, but the man recovers from his debauch as if by magic. Again, take a patient who suffers from nausea after the hypodermic use of morphine and lavage prevents vomiting.

These two clinical facts will serve in part to illustrate my position. In the first instance, lavage would not be considered, because vomiting is produced through the action of apomorphine upon the vomiting centres in the medulla; in the second instance, vomiting is prevented by removal of the offending substance, morphine, which is carried to the stomach for elimination just as other toxic substances are brought there, and this is the point I wish particularly to develop.

As a result of defective tissue change (metabolism), or reversion of cell function, poisons

are generated within the body called cytotoxines (cell-poisons), and in my opinion, the first object of the clinician should be to eliminate this factor by an investigation of the stomach contents. When these poisons are found in either the stomach or intestine, suitable measures should be adopted with a view to prevent their formation, but judging from the general character of the current literature upon gastro-intestinal diseases, I am led to infer that physicians are satisfied when once the percentage of hydrochloric acid has been determined by an examination after a test meal. At the present day all treatment seems to be based upon this one theory, so that "looking into the stomach" has become a sort of a fad. Even Professor Ewald, in a recent article (*International Medical Magazine*), tells us how to administer hydrochloric acid in very large doses by means of a stomach tube, and the probabilities are that unless some one calls a halt, the internal anatomy of the fashionable invalids will soon be burnt to a crisp.

Other illustrations showing the intimate relations existing between the general system and the gastro-intestinal tract might be cited, as follows: In the case of rheumatism affecting the joints with gastro-intestinal catarrh, colchicine will afford prompt relief, because of its influence upon the cellular structures involved and its stimulant (irritant) action upon the cells of the intestinal mucosa. We know how a cold affecting the general system is sometimes said to "run off at the bowels," how frequently vomiting accompanies the onset of typhoid fever, and how the "striking in" of a rash is liable to create fever and delirium and arrest the secretions. So that, following out this line of thought, there is a reasonable exercise for the inquiry, why stop at the flag station? Why not go to the chief cause? And if it cannot be removed, reduce it to a minimum—always bearing in mind that catarrh of the stomach or intestines is mainly a local manifestation of constitutional derangement. We must not lose sight of the true character of other catarrhs, as of the bladder, of the bronchi and of the naso-pharyngeal space, because there is usually a sympathetic influence pervading the entire mucous system, and eventually the catarrhal habit is formed.*

The question, then, is, what are the logical

*This subject is considered more in detail in a small brochure entitled "*Dyspepsia: Its Causation and Systemic Effects—A Study in Reconstructive Metamorphosis, Physical and Physiological.*" Sent by mail for a two-cent stamp.

physiological remedies clinically adapted to overcome this habit and to preclude the necessity for regular and systematic lavage? Our author admits that bitter tonics are practically useless, although he recommends strychnine in full doses, one, two or possibly three times daily (grain, 1-20), long continued. Dr. Ewald relies upon nux vomica in large doses, since it was demonstrated in laboratory experiment that nux vomica was the most efficient remedy to stimulate the motor functions of the stomach. He also recommends massage and electricity as "other measures which act upon the motility of the stomach—that is, upon its power of emptying itself of its contents." No doubt these "other measures" are demanded to overcome the tetanic muscular contractions set up by the continued administration of nux vomica, and here I take the precaution to interpolate a word to the effect that clinical observation shows the superiority of strychnine in combination with arsenic in the form of strychnine arsenite. The physiological effect of strychnine alone must be considered as well as its clinical effect. It arrests oxidation in protoplasm, and when "long continued," produces fatty degeneration; hence, it is easy to understand why the "other measures" are required to improve the motility of the organ. Combined with arsenic, this objection is partly overcome, since arsenic favors oxidation and promotes the elimination of waste products. The best results attend the use of small or moderate doses at short intervals for a few days or a week, after which it should be discontinued for an interval. The most happy effects are obtained by the conjoint use of nuxlein, in consequence of its influence upon cell function.

Ordinarily the treatment just outlined would be considered about as good as could be suggested, along with lavage, but I do not consider it at all adapted in the early stage, for the reason that it does not strike at the initial cause, which, as previously intimated, arises chiefly from defective internal respiration. Let us, first, increase the oxygen-carrying capacity of the blood by giving an alkali, say lithia, combining this with a saline, so that when taken in concentrated solution together they will favor or create an endosmosis. Thus taken at the proper time—when the stomach is empty, or supposed to be empty, an hour before breakfast, and again on retiring—such a combination flushes the lymphatics, overflows the intercellular spaces, the current being guided into the main channel through the physiological action of the contain-

ed saline. In ordinary cases of indigestion with gastric or intestinal catarrh, in lithemia, uric acid diathesis, neurasthenia, and associated insomnia, hypnotics and anodynes have no place, and for lavage is substituted alkaline-saline treatment, which stimulates the vegetative functions, making the cells work.

JOHN, AULDE, M. D.

Kennett Square, Pa.

Proceedings of Societies, Etc.

CLINICAL SOCIETY OF MARYLAND, BALTIMORE.

The meeting was held February 15, 1901, at the College of Physicians and Surgeons, the president, Dr. W. J. Todd, in the chair; Dr. H. O. Reik, secretary.

Case of Accessory Thyroid Gland.

Dr. John R. Winslow exhibited what he believes to be a rare growth at the base of the tongue. It answers in every way to the description of cases of accessory thyroid gland at the base of the tongue, and he believes there are only twelve or thirteen such cases reported in medical literature.

A Mastoid Operation, with Healing Under Blood Clot. Exhibition of Patient.

Dr. Harry Friedenwald said that this patient has interested us in many ways since he came into the hospital on the 11th of December. He had then had a fever for a week, with a temperature ranging from 101° to 102.5°. He had some slight rales, with pain in the chest, and *Dr. Lockwood* thought he was going to develop pneumonia. An eruption made its appearance over the body, and in a very few days the diagnosis made itself clear as one of syphilitic fever; he still presents many of the marks on his body. His temperature remained above 101° for a week, and then, under specific treatment, it returned to normal and the patient seemed to be getting well. At the end of the second week he again complained of severe pain in the head, at first around the mastoid region, and the possibility of mastoiditis was considered. He had a double purulent otitis media, the duration of which was not known. His tem-

perature rose to 105.5°, and during the next few days frequently reached that point. The pain was very definitely located in the right mastoid region, but the sensitiveness was so diffuse that we hesitated about an operation, and awaited developments. Two days later they occurred in the form of a very extensive erysipelas, which lasted for two weeks.

Even when he got well of the erysipelas, however, his clinical history did not end, but after several days of normal temperature he again began to complain of intense pain in the right mastoid region, and the diagnosis of acute mastoiditis was very evident. There was some slight swelling and tenderness, definitely located about the antrum and neighborhood of the tip. A mastoid operation was performed, the bone found very much sclerosed, and it was evident this was not a recent otitis, for we never find such a marked degree of sclerosis in fresh cases of otitis, and it always indicates a long-continued process. We found pus in considerable quantity both at the tip and in the cells near the antrum. The parts were thoroughly cleaned and irrigated with a normal salt solution, and in order to try this case again, the healing under blood clot, even under unfavorable circumstances, we allowed the wound to fill up with blood and sewed up the soft parts. At the second dressing there were a few points where there was a little suppuration, evidently stitch abscesses, and at the end of two weeks the patient had entirely recovered. The otorrhœa has disappeared, and the left ear is also well.

DISCUSSION.

Dr. Cone asked whether, in healing up under blood clot, any special precautions were taken to get rid of any pus that might be present but invisible, before the wound was allowed to fill with blood?

Dr. Friedenwald: Only mechanical means. The wound was mopped out and washed with normal salt solution; no antiseptics were used.

Dr. Cone: This case is a very interesting one to consider in connection with other work that has been done to secure healing under blood clot; for instance, in osteomyelitis. We have always felt in those cases that we had to treat the wound very thoroughly before allowing it to fill with blood, in order to increase the chances of per primum healing. This case shows that you can get a wound to heal in a very short time under simple blood clot. I recently had

a case of healing of the tibia under blood clot in one week, but I swabbed out the bichloride, and then washed with normal salt solution.

Dr. Cohen: Was this wound sewed up without any drainage?

Dr. Friedenwald: Yes.

Dr. Reik: This case illustrates very well the value of the blood clot method. I have used it in six cases, and in four of these the wounds were perfectly healed and the patients discharged at the end of a week. One case showed a partial breaking down of the clot, which drained from the lower part of the wound, and the latter healed with but slight delay, while in the other case the clot broke down completely. When successful, we are able to discharge such patients in a week or ten days, whereas if the wound be packed or drained it requires three weeks or more to secure healing. Should the clot break down, as it did in one of my cases, the stitches may be easily removed, the wound cleansed and packed, and the patient is no worse off than if this had been done at the time of the first dressing. It certainly seems desirable to give this method a much wider trial.

Dr. Pancoast: Were any cultures taken in any of these cases reported by Drs. Friedenwald and Reik?

Dr. Friedenwald: Cultures were taken in this case, but I am not able to say at present what was found.*

Dr. Reik: In three of my cases the staphylococcus was found; in one the streptococcus, and I believe no growth was obtained in the other two.

Dr. Bernstein: It strikes me that we are running great risks to allow a wound of that sort to heal up by blood clot. Occasionally you will get perfect union; but every one knows the perfect culture medium that blood clot makes, and when you have the pneumococcus, the staphylococcus, or the streptococcus in the wound the risk is great. The operation I have done, and which Koerner and Jansen do, gives quite as brilliant results; and it strikes me it eliminates that very large element of danger—the risk of general infection—from this beautiful medium. The operation is to entirely clean out the bone, do the radical operation, and then perform the flap operation and drain the ear from the external auditory canal. You sew up the post-auricular wound immediately, and in the case I had in Maryland University Hospital recently

*Dr. Friedenwald reported subsequently that the cultures and smears showed mixed infection, staphylococci and streptococci.

the patient was up and about on the fifth day, and discharged on the seventh day. In that case the hearing before the operation was so bad that you had to yell at him; and after the operation he could hear whispered sounds at six feet. This operation has been universally successful, and Jansen told me last summer that he did not know what a loss meant.

Dr. Friedenwald: With reference to the Koerner operation, while it is an excellent operation in chronic diseases where you wish to clean out the whole antrum and middle ear, it is not indicated in such cases as the one described. It is certainly a very much more radical operation than the simple Schwartze operation, and you may destroy some of the functioning parts of the middle ear in doing it. In the typical mastoid operation you simply open and clean out that part of the mastoid which is infected.

The danger of healing under blood clot cannot be very great, for it has been tried now in quite a large number of cases by Blake, of Boston, and others; and in Blake's hands its success has been really astounding. It was after reading his report that I tried it, and with the most satisfactory results.

Gastrostomy—Exhibition of Patient.

Dr. Bevan said that the case before you is one of gastrostomy done for a stricture near the cardiac end of the stomach. The patient was transferred from the medical to the surgical side of the hospital on December 20th. She had been in the hospital before for trouble of a specific character, and there remained well-marked evidences of it. The local indications calling for treatment were intense emaciation, which had been progressive and rapid, with almost absolute inability to swallow. Examination with various probes showed an obstruction thirteen and one-half inches from the teeth, through which not even the smallest probe would pass; some fluid would pass. An operation to open the stomach and bring its edge up to the margin of the skin wound and feeding entirely through this was tried. The progress of the case has been uneventful, except that she has put on flesh with great rapidity. She almost died on the table because of her great weakness, but is now able to walk about, and takes a great deal of active exercise. What is equally of importance is that since the operation was performed she has become able to swallow some liquid food, because, I suppose, of the rest that has been given to the strictured tissue.

Popliteal Aneurism.

This man entered the house last Monday week, giving the history of syphilis, dating back some nine or ten years, for which he had received practically no treatment. Last May he detected a small lump in the popliteal space. In a short time this began to enlarge, and finally attained enormous size, so that when he came in, there was an enormous mass occupying this whole space, and destroying all normal relations about the knee joint. The mass was semi-fluctuating, and had an indistinct pulsation. There was no bruit, but the diagnosis was made of a ruptured popliteal aneurism; and, acting on that, incision was made and this mass dissected out.

The sac had ruptured and the entire space was filled with blood clot. I saw no free blood, but a tourniquet had been very carefully applied. As rapidly as possible, the incision was extended, a double ligature passed around the upper portion of the popliteal, and the sac was enucleated until the extreme limit of the dilated vessels was met with, and then these were tied and the mass removed. We have thought it advisable to treat the wound as a local one. The temperature reached at one time 103°, but is now below 100°.

Popliteal aneurisms are of unusual occurrence. In an experience of many years, I have met with but two in which the vessels had ruptured, and the conditions were similar to this. They were treated in the same way, and I believe the method is preferable to that more commonly used of amputation.

DISCUSSION.

Dr. Randolph Winslow asked *Dr. Bevan* whether in the case of gastrostomy the wound leaks, and whether when food is put into the wound any of it runs out?

Dr. Bevan: To a very slight extent it does.

Dr. Winslow: I understood you to say you merely stitched the stomach wall to the integument, and did not perform any of the other operative measures, such as suggested by *Carter* and others?

Dr. Bevan: No, there was no effort at valve formation.

Dr. Winslow: Was it the intention to have a permanent fistula, or a temporary one?

Dr. Bevan: Merely a temporary one.

Dr. Winslow: Of course it depends entirely upon what the condition is due to, whether the trouble is malignant or whether it is a stricture

of the œsophagus, as I take this to have been. If the condition is a malignant one, then of course the operation is only performed after the patient is unable to swallow, and the fistula is expected to be a permanent one. In that case, I think one of the methods of operation which seeks to form a valve for the purpose of preventing regurgitation through the fistula should be performed. If, on the contrary, the fistula is a temporary establishment only for nutrition until the patient is in condition for further operation, then the method adopted by *Dr. Bevan* is eminently proper. *If it is to be permanent*, I do not think this method should be adopted, as it will certainly leak, cause excoriation of the skin, and the patient will be uncomfortable. It does give a better opportunity to attack the stricture by sounds from below or by means of the string saw. Then the rest, as *Dr. Bevan* has said, from the irritation of swallowing and of food passing over the inflamed tissue is of vast benefit in these cases. It is probable that *Dr. Bevan* will have to resort to further procedures for the correction of the stricture that is present—such as passing graduated sounds or the employment of a string, by means of which the stricture is sawed so that instruments can be passed. I have operated a number of times, in all but one for cases of acute stricture, the result of corrosive poisoning. In one case I could not succeed in establishing continuity of the œsophagus, and after a year the patient died. In another case, after feeding the child through the fistula for a long time I succeeded in overcoming the stricture and sent the child home with a patent œsophagus.

Dr. Bevan: The theory on which the operation was done was that there existed a syphilitic stenosis near the cardiac end of the stomach, and the operation was intended merely for temporary effect, and to afford the facilities for dilating from below upwards. With that end in view, the operation was made as high up on the stomach wall and as near the cardiac end as we could reasonably make it.

A Case of Chorea in an Adult.

Dr. George J. Preston: This case is a very unique one, in my experience, and one that is certainly very difficult to assign to its proper class. History is briefly as follows: His father died of bronchial trouble; his mother in confinement, and one sister died of pulmonary tuberculosis. Personally, he has had the usual diseases of childhood. When about three years

of age—and this may be of some importance— he was suddenly awakened from sleep by a fright, and choreic movements set in, and have persisted ever since. You will see the peculiar movements about the face and head as he sits here, and observe his peculiar gait as he walks. His speech is broken and indistinct, and articulation very peculiar. There is no mental weakness, and a physical examination reveals nothing abnormal. The muscular movement is tolerably constant, except when he sleeps.

The interesting point in this case is the diagnosis. The movements are choreic; but certainly it is not a case of chorea vulgaris, the movements differing very much from that; nor is it a case of some of those peculiar forms of chorea, the fibrillary—the variety described by Dubini as occurring in Italy—nor the electrical chorea, belonging, perhaps, to the class of ordinary habit choreas. In the last year or two I have seen several cases of this distinct habit chorea, and I have a most typical case now under my care of a young girl who has had it: the most of her life. The movements are electrical; she will be sitting quite still, and all of a sudden there will come this quick electric-like movement. Unfortunately, that variety is incurable, and fortunately it is not very common. This case does not seem to belong to any of these forms, and it is a question whether it should be classed with the Huntingdon variety. About twenty-five years ago, Huntingdon described a class of choreas that were distinctly hereditary. His father and grandfathers had been practicing on Long Island for many years, and had observed a number of cases such as he described. It runs through from two to five generations, begins between thirty and forty years of age, and always has a certain amount of mental complication. The cases run a comparatively short course, and finally terminate in dementia. This case began in early life, has been running for something like thirty years, and is not interfering with the man's mental condition at all. He has been able to do hard manual labor all his life and support a family of a wife and three children.

It does not seem to belong to the class sometimes described as chronic chorea, which is practically identical with the Huntingdon variety; nor to the class of cases known as *athetosis*, for in both of these there is usually marked mental deterioration. I have seen but one case anything like it, and that was a case of congenital

chorea that I described a few years ago, where the movements were like these, but more exaggerated. The movements of the tongue and facial muscles had been of such a nature that that patient had never learned to talk. She was very intelligent, particularly fond of music, learned to play the piano well, and could understand everything that was said to her, but was totally unable to express herself. This man has never been able to learn to write, though he went to school for five years, and progressed as far as the grammar school.

In attempting to make a diagnosis, the only thing we can say is that the case belongs to the chorea group. It emphasizes the fact that we cannot speak of chorea as a distinct disease with a clear onset of symptoms and a complete entity, but must consider it as a symptom complex—a set of symptoms, with varying pathology and symptomatology, but conforming to a certain general type. Then a case like this could be said to belong to that group, while we recognize the fact that none of the choreas have a distinct and decided pathology, but that all are symptoms complex of some general condition which must certainly be a disturbance of the motor cortex.

DISCUSSION.

Dr. Hermon: This case is very interesting from the diagnostic point of view, but it would also be interesting if Dr. Preston would tell us what therapeutic measures he has taken. There are certain cases which we cannot classify in a distinct group, especially in nervous diseases, and we then usually have recourse to the term hysteria. It is possible that this is one of the cases in which our inability to classify would lead us to take this course.

Dr. Abercrombie: What effect have acute affections had upon his condition?

Dr. Preston: He has had most of the acute diseases, practically all of those of childhood, and pneumonia, rheumatism, and syphilis, all of them subsequent to the time the chorea form movements began.

In reply to Dr. Hermon's question, the man has not been long in the hospital; no very definite measures have been tried as yet. He has been given some sedatives and medicines of that nature. The theory of hysteria occurred to me early, but as these symptoms have been going on for thirty years without any abatement, and seem to belong so certainly to the choreic group, I have thought it belonged to that class.

EXHIBITION OF SURGICAL CASES.

Strangulated Hernia.

Dr. J. W. Chambers said this patient was operated on two days ago. About four days ago, while splitting wood, he felt an acute pain in his abdomen and a lump appeared. This was followed by vomiting and nausea, and a physician who was called in from Havre de Grace sent him into the hospital. He arrived about 8 o'clock Tuesday night, and his trouble was recognized as strangulated hernia. On Wednesday morning the hernial sac was removed, and was found to be a congenital one. I used the Murphy button in closing up the wound, and his recovery has been good. Stitches were used over the button to reinforce it, for I do not think it is the best means to employ, and should be better satisfied when possible to avoid the use of the button. I have had trouble with it at times, and in one case, although the patient did well for six days, it then caused ulceration and perforation. I think the time has about passed for the use of these mechanical methods; and I never employ them without rather wishing I had not.

Fibro-Adenoma of the Breast.

Dr. Chambers merely wished to show this specimen, which is a tumor of the breast, removed from a child of seventeen. It is an immense tumor to remove from a child.

Recurrent Carcinoma of the Breast.

Dr. Chambers said that this man had a carcinoma removed from the breast eight years ago, and six weeks ago I removed another growth of the same character, and exposed the pleura pretty thoroughly; but the patient within twenty-four hours was sitting up, and in three days was about the room, and able to leave the hospital at the end of the week. This was against protest, of course, but the wound is practically well. At the operation the lung collapsed for a few moments, but soon filled up with air. I am inclined to think the second growth was independent of the first, as there was no evidence of metastases.

EXHIBITION OF MEDICAL CASES.

Enlargement of the Heart.

Dr. Carey Gamble showed two cases of enlargement of the heart that are of considerable interest. *The first man's history* is as follows:

He had led a pretty rough life, and had three attacks of inflammatory rheumatism. In addition, he has suffered with lues and several attacks of urethritis. Eighteen months ago he was taken with a feeling of pain and pressure about the breast, as though something were clutching him about the breast bone, with pain referred to the cardiac area. He was employed up to a year ago at hard laboring work, but lately has not been able to do very much. He came in January 1st with swelling of the face, hands, and feet, and we found a classical case of aortic regurgitation. You can see the pulsations in the neck and the wave that extends to the anterior axillary line. He has the Corrigan pulse, and the capillary pulse is visible in the finger nails. When the skin is scratched he has the alternate fading and blushing that is sometimes noted. Over the second space he has a distinct systolic and diastolic murmur, typical in tone and transmitted into the vessels of the neck. When he first came in there was obliteration of the second sounds, but since he has been here the second sound has returned and is distinct in spite of the murmur.

CASE II.—This man has not given us any history of angina-like pain, and the only history of illness we can get is that he had an attack of inflammatory rheumatism four years ago, from which he recovered after a continuous illness of six months. He went for a short time on an oyster boat, where he developed pain about the breast, cough and swelling of the legs and abdomen. The murmurs are much more complicated than in the other case. He has a thrill distinctly localized and presystolic in time. In the second inter-space there is a diastolic and systolic murmur transmitted to the left, and a systolic regurgitating murmur towards the axilla. He has also the Corrigan pulse. From his anemia, we thought probably he had involvement of the kidney, but we have not been able to find either casts or albumen in the urine. Probably his life on the bay, with hard labor and poor food, had much to do with his condition at the time he came in. The provisional diagnosis in this case is that he had first an aortic regurgitation, and probably a stenosis and regurgitation of the mitral valve.

DISCUSSION.

Dr. Henkel asked what the treatment has been in these cases?

Dr. Gamble: Principally, rest. They have been kept flat on their backs, and both were

given small doses of infusion of digitalis. It seems to have had a good effect. The three things they have had is rest in bed, digitalis and diet.

EXHIBITION OF SURGICAL CASES.

Result of Large Abdominal Incision for Liver Abscess.

Dr. I. R. Trimble brings this case simply to show the result of quite a large abdominal incision. Six years ago he was run over by a wagon, and was laid up in bed for two months, after which he went back to work at street paving. On June 5th, after an attack of acute pain in the side, he came to the hospital with a distinct fluctuating mass that was made out at the time to be a liver abscess. He refused to be operated upon then, but returned June 30th; and an extensive incision was made, running down below the anterior-superior spine of the ilium. He was in very bad shape, and we packed the wound and made a free opening into the liver and another in the gall-bladder. He made an uneventful recovery, except that we cannot find any liver dullness on the right side at all. The large abscess had left the right lobe simply a shell.

Drainage for Empyema.

CASE II.—Three months ago this child had typhoid fever, followed by pneumonia and pleurisy, and I saw him with an enormously dilated left chest and dullness up to the second rib. He seemed to be dying of empyema. At the operation we resected two ribs to allow free drainage, and he has gotten along very well, as you see. The lung is expanding and coming, as you can determine by percussion. We did not irrigate in his case.

Rupture of Quadriceps Extensor Muscle—Cocaine Anesthesia.

CASE III.—This is an interesting case in two or three different ways. The man is 73 years old. When a young boy about 17 he was thrown from a horse and a double direct inguinal hernia resulted. Four weeks ago he fell down stairs, and when he got up, was unable to bend his knee. Examination showed that he had ruptured the quadriceps extensor. It is the only case of the kind I have ever seen. A 1-2 per cent. solution of cocaine was injected, and the muscle was stitched to the tendon tissue over the knee cap. I have not tried movement yet, but hope for a good result.

I want to call attention to the *action of cocaine in this case*. We estimated that he got about 1-2 grain under the skin, but before he left the table he was delirious, with a pulse of 160, and respirations 45 per minute, and we feared he would die. From the time the cocaine was injected until the knife laid bare the tissues certainly was not more than three minutes.

Dislocation of Hip.

CASE IV.—This man is a B. and O. brakeman, who nine weeks before I saw him received a backward dislocation of the hip. When he came in he moved about with difficulty. A physician had reduced the dislocation, as he thought, but had really dislocated it again forward over the pubes. The bone was gotten back with some difficulty; he was put up in a long splint, and at the end of three weeks was walking around as you see.

Monstrosity.

Dr. Harvey G. Beck exhibited a rare case of monstrosity (published in *Maryland Medical Journal*, September, 1900). The specimen showed a number of abnormalities, such as hairlip, cleft pale acrania, hydronephalocele, and spina bifida. The child was a still-born female, weighing 219 grammes, and measuring 27 c.m. in length by 24 c.m. in circumference of the body. The mother was 25 years of age, and her two former labors were of normal character. No history could be ascertained that would suggest an explanation for the monster.

Book Notices.

Practice of Obstetrics by American Authors. Edited by CHARLES JEWETT, M. D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. *Second Edition, Revised and Enlarged. Illustrated with 445 Engravings, 48 of which are in Colors, and 36 Colored Plates.* Lea Brothers & Co., New York and Philadelphia. Large 8vo. Pp. 786. Croth, \$5, net; leather, \$6, net; half morocco, \$6.50, net.

That the first edition, published two years ago, has been exhausted, is evidence of professional approval. In the present edition, extensive revisions have been made. Important alter-

ations pertain to the pathology of pregnancy, and to obstetric surgery. Drs. A. T. Bristow and M. A. Crockett have done the important revision work of the chapters contributed by Drs. Browning (deceased) and Etheridge. Beside these two authors an the editor, the following is a list of the contributors to this magnificent scientific and useful consultation and text-book: Drs. E. H. Bartley, Brooklyn; A. H. Buckmaster, University of Virginia; J. C. Cameron, Montreal; H. D. Chapin, New York city; R. L. Dickinson, Brooklyn; J. C. Edgar, New York city; A. McL. Hamilton, New York city; F. Heurotin, Chicago; W. P. Manton, Detroit; C. D. Palmer, Cincinnati; J. O. Polak, New York city; H. Robb, Cleveland; J. M. Van Cott, Brooklyn; H. N. Vineberg, New York; J. Clarence Webster, Chicago, and J. Whitridge Williams, Baltimore. The plan of the book cannot be improved. Each contributor has brought his chapter fully up to date. Of course, some of the teachings are debatable, but not one of them stands without full authority. It is the book the doctor wants for frequent reference.

Commercial Trusts—the Growth and Rights of Aggregated Capital. By JOHN R. DOS PASSOS, of the New York Bar. Author of "*Stock Brokers and Stock Exchanges*," etc. G. P. Putnam's Sons, New York and London. The Knickerbocker Press. 1901. Cloth. 12mo. Pp. 137.

The Putnam's Sons are alive to public interests. This is No. 97 of a series of monographs (?) or "*Questions of the Day*"—the publication of which is doing great good. The book before us is an able "argument delivered before the Industrial Commission at Washington, D. C., December 12, 1899, corrected and revised." After some preliminary remarks deprecating hasty and ill-considered legislation upon the subject, trusts are defined, objections to aggregations of capital are considered, and the history of the rise and growth of aggregated capital is given. After showing the impossibility of controlling natural operations of trade or evolutions of business by written laws, etc., the evils of trusts are brought out, and legal questions are discussed in a fair and impressive manner. The book (which we presume can be bought for a dollar or less) furnishes food for thought, as it also bases itself on a statement of fact as generally recognized. It can be read through in two or three hours, and would correct many an evil if its teachings were properly digested.

Editorial.

Osteopathy, etc., in Virginia.

Last year, Drs. J. E. Warinner, Brook Hill, Va., for the Medical Examining Board of Virginia, and Landon B. Edwards arraigned some "doctors of osteopathy" before the Hustings Court of Richmond for violation of the medical practice laws of Virginia. The charge was that they were practicing medicine in this city without having the certificate of examination of the Medical Examining Board of Virginia. They affix the title "D. O." to their names, and are graduates of a "college of osteopathy." Their claim was that they used neither drugs nor instruments in their treatment of diseases; hence were not practicing medicine or surgery in the legal meaning of the term, although they charge fees or rewards for their services, and claim to have effected cures of the sick. They recognized the necessity of a knowledge of anatomy, physiology, etiology, symptomatology, pathology, the principles of diagnosis of diseases, etc., but excluded themselves from the legal category of practitioners of medicine because they adopt other modes of treatment than the use of drugs or instruments! And yet these people were not charged professional license taxes—State or city! Judge Witt dismissed the case, as he said there was no statute under which they could be tried.

Later on, another case came up in the Halifax County (?) Court—Judge Barksdale presiding. Judgment was rendered in effect similar to that of Judge Witt.

Dumbfounded by these judicial decisions, the Legislative Committees of the Medical Society of Virginia and of the Medical Examining Board of Virginia, under legal advice,* formulated an amendment to the present law so as to cover all possible cases. The law had stood the test of every known case of quackery until the outrageous instances referred to.

Senator E. J. Harvey, Stuart, Va., introduced the amendment in the Senate, and it was referred to the committee of which Senator Barksdale is chairman. The "osteopaths" introduced a counter bill before the committee asking for an examining board of osteopaths.

Dr. R. S. Martin, Stuart, Va., president of the Medical Society of Virginia, and secretary of the Medical Examining Board of Virginia, read an exhaustive paper before the committee, embodying the views of the profession of medi-

cine in favor of the amendment proposed by Senator Harvey. Drs. H. M. Taylor, George Ben. Johnston, John N. Upshur, Stuart McGuire, and others of the profession of Richmond, all expressed themselves strongly in favor of the amendment—requiring “osteopaths” and all other “pathies,” etc., to be examined by the Medical Examining Board of Virginia before professionally attending the sick or injured for fee or reward. Indeed, in our opinion, Dr. Johnston, in his apparent earnest plea for the proposed amendment, conceded too much with reference to consultations with irregulars with the certificate of the Board of Examiners.

The “osteopaths” were represented by legal counsel, and an imported “doctor of osteopathy.” They claimed that osteopaths are not practitioners of medicine because they do not use drugs nor resort to surgery. They have to be graduates of a school or “college of osteopathy,” in which anatomy, physiology, diagnosis, treatment of disease according to their peculiar methods, etc., etc., are taught. In the audience before the committee were a number of persons whose different diseases were promptly diagnosed and treated by their methods, who had come to testify to the curative value of their modes of treatment.

One of these parties stated that at one time he was very sick, that reputable doctors—both regulars and homeopaths—prescribed for him, and he got no better. Then he put himself under the treatment of osteopaths, who at once put their hands on the spot, and whereas he was sick, now he is well. He believed in osteopathy, and therefore “doctors of osteopathy” should not be required to pass examinations before the Medical Examining Board.

But the astounding (?) testimony of the above witness and of Major N. V. Randolph (which was very much like it) is not to the point. Such testimonials can be found attached to the vilest quackery and most dangerous patent medicines advertised in the daily newspapers. Both witnesses acknowledged they did not know in what “osteopathy” consisted. Such witnesses, of course, were introduced to muddle and mystify the main point at issue, which is not: Are “osteopaths” doctors of medicine? But it is: *Are these men seeking to practice a profession for the cure of disease—therefore presumably medical in the usual acceptance of the term—for fee or reward?* If so, they should be placed in the same category with others offering professional services to the public which in-

volve the health and life of persons under their charge. They should be required to stand examination before the Medical Examining Board of Virginia on all important branches involved in a knowledge of medicine, to which Board, if they wish, one familiar with the special treatments of osteopathy may be attached—just as is arranged for the benefit of homeopaths. The testimonials of the witnesses produced—ignorant alike of the laws of health and of the essential branches of the practice of medicine—do not give sufficient endorsement of the attainments of these “osteopaths” and other quacks to exempt them from the provisions of a proper law on the subject.

The regular profession opposed separate boards of examiners, as the Board does now, with reference to “osteopaths,” or any other “pathy.”

In justice to the homeopaths of the State, who are in accord with the regular profession in reference to “osteopaths” and other “pathies,” it may be said that the few graduates of homeopathic schools who have appeared before the Board have stood, in general, very creditable examinations. Although the Board is composed of twelve practitioners of the regular school and two of the homeopathic, we have never heard of a case where injustice was done or unfairness of examination exercised toward any one because of his or her choice of school of practice.

No law exists in Virginia, nor is one in anticipation, which restrains a party having the certificate of the Board from practicing any “pathy” that he pleases. But for humanity’s sake, and for the sake of advancement in education, compel whoever undertakes to treat disease for fee or reward to be tested as to his knowledge of the human body in health or disease before he is permitted to trifle with the ailments that flesh is heir to. No other “specialty in practice” that we know of is exempt from the provisions of the law. Why exempt osteopaths? If osteopaths are exempt, why compel every other doctor in the State to submit themselves to the Medical Examining Board? If osteopaths can practice their specialty without professional license or tax—city, county, or State—where is justice in the law which taxes regulars, homeopaths, etc., in the cities from \$50 to \$75 a year?

Neither regular nor homeopathic doctors have opposed the practice of “osteopathy,” or “eclecticism,” or “allopathy,” or “electrology,”

or "hydrotherapy," or "faith cure," or any other special practice that proves successful in the treatment of human diseases. But he is no less than a criminal charlatan or a fool that denies the value of vaccination, or of diphtheria antitoxin, or who would undertake to treat recurrent appendicitis by means of massage alone, with a claim of 95 to 100 per cent. of recoveries!

The Senate Committee, with the dissenting vote of Senator Harvey, as we understand it, declined to report favorably the amendment proposed by the State Board of Medical Examiners, or any modification thereof, but favored a separate board for osteopaths. The committee, however, at a subsequent meeting, recognizing that their action met with the disapproval of their constituents, rescinded their action of the previous week, and practically left it to the doctors to formulate their own amendment.

The Richmond Academy of Medicine and Surgery (Dr. Lewis C. Bosler, president), the (Richmond) Church Hill Medical Society (Dr. R. D. Garcin, president), by unanimous votes approved the action of the Legislative Committees of the Medical Society of Virginia and the Medical Examining Board of Virginia. Doctors—able representatives of the profession—from Newport News, Portsmouth, Williamsburg, Sussex, Charlotte, Fredericksburg, Charlottesville, Petersburg, Lynchburg, Tazewell, etc., all hurried to this city to interview their legislative representatives to see what was the matter, and to urge the adoption of the measure which would require osteopaths to pass the Medical Examining Board. The homcopaths of the city were also favorable.

A modification of a clause in the Indiana law, which apparently covers all cases of persons proposing to practice the healing art in Virginia was unanimously approved by the doctors' committee, and all other doctors to whom it was referred. The doctors who had come to the city had interviewed their senators, and everything seemed favorable for their vote at 1 o'clock March 19th—the special hour appointed for consideration of the bill. The doctors who had come to the city for the most part returned to their homes on the 18th instant—confident of victory as the result of their efforts.

About mid-day of March 19th, those interested in the measure began to assemble in the Senate, then in session, in anticipation of the special order at 1 o'clock. Then, as a thunder-

bolt from a clear sky, it became known to the doctors that a prominent member of the local profession, without authorization from the committee of doctors, or without notice to them, had interviewed some of the senators, asking them to favor recommitment of the bill. Senators, friendly to the bill, had heard that the bill would be recommitment by request of the doctors, and did not understand why it should be further considered. When pressed by a number of doctors to explain his reasons for so doing, he stated that he did not understand the bill to be presented. When the amendment proposed was shown him—practically an extract from the Indiana law, which is even more sweeping than the original amendment, he expressed approval, and said he would at once—now only a few minutes to 1 o'clock—see the senators to whom he had spoken, who were in their seats, and withdraw his request to recommit. But it was too late to overcome the general influence his requests had exerted, and the vote to recommit was carried. So that the "doctors' bill" sleeps the sleep of all such recommitment bills so near the end of the legislative session.

Of course, "killing the bill" for this session leaves "osteopaths," and the like, free for another year, at least, to practice without examination, license, or tax.

Abbott's (Effervescent) Saline Laxative

Is an ideal saline laxative and cathartic, composed of *sulphate of magnesia* in effervescent combination, from which all irritants are removed, and that disagreeable taste of Epsom salts, which has rendered the use of this most important therapeutic agent so objectionable, has been entirely eliminated. The dose is entirely according to the effect desired—from one to three or four heaping teaspoonfuls in a half to two thirds of a glass of cold water, being the limit of usual needs for adults. It acts without griping or hyper-catharsis, and does not induce debility in the slightest degree. We are doing the profession a good in calling their special attention to this *palatable* preparation of Epsom salts.

Index of Annual Volume VI.

This issue completes Annual Volume VI of the *Medical Semi-Monthly*. Much matter has to remain over for early issues of Volume VII. The *Index* of the Volume now completed will be sent out with the first April number.

Need of Doctors in Legislature, etc.

The astounding ignorance of the average legislator with regard to public medical matters, as evinced in the recent discussions of quackery, etc., before the Virginia Senate, compels the request that reputable doctors will offer themselves as candidates for election for both the next House of Delegates or Senate of Virginia. Regular practitioners in the several counties, as a body, are an honorable set of men, seeking the truth, and know the opinions and wishes of their constituents about as well as any other set of citizens. Their habits of thought and daily experience make them fair-minded and liberal in their views.

The Convention of Virginia is soon to adjourn. New districts or new divisions of the State are to be made, and the time limit of a number of the present members of the General Assembly is about ended. New men are to be elected, and we implore the profession of some of these districts to send some representative medical men to the next Legislature. With other disgraceful defeats of the profession in subsequent Legislatures, the tone of the high-minded, honorable doctors of the State will become degraded in public esteem, and charlatany and quackery will become a political power in the State.

The reputable doctor of wide experience in his county or district needs rest from his rounds of professional work in the winter time, as the city doctor seeks it in the summer. Richmond during the winter legislative sessions would be a pleasant resort. During his off hours from legislative duties there are two medical colleges in the city, at either of which he could attend the clinics or drop in to hear lectures. Between 500 and 600 medical students are in the city during the winter months. There are two ably conducted, regular medical societies in the city, at both of which he would be welcome. There are plenty of places of attraction, and homes for social enjoyments. So that, beside gaining much-needed rest for himself while yet his expense are paid by the State, he can serve his constituents and the profession greatly in being able to correct errors and to direct needed legislation for the good of the profession and his home people. We do not want the political trickster, but the high-minded, honorable doctor, in the Legislature. There are only two or three of the latter in that body now; and they are too few to cope with intriguers, or legislators now there who are ignorant of medical

wants, which, if satisfied, must redound to public good. Honesty of purpose and effort and fidelity to trust, are needed rather than the swapping of doubtful favors.

Correction.

Dr. W. H. Prioleau, Asheville, N. C., who contributed the excellent paper on *Abnormally Small Meatus Urinarius—Important Bearing in Genito-Urinary Diseases—Operation* (read before the South Carolina Medical Association) to this *Semi-Monthly* for February 21, 1902, has his post-office address printed incorrectly. In the *Table of Contents* his address is *correctly printed, Asheville, N. C.*; but on page 529, under the title of the paper, it is wrongly given as "Washington, D. C." How such typographical errors creep in will be hard to explain.

Frauds Against Antikamnia.

The Antikamnia Chemical Company, of St. Louis, Mo., claims no proprietary right over the recognized coal tar analgesics, antipyretics, etc., but it has won for itself "a good name" in introducing combinations of these in powder and tablet forms, which are favorably known the world over. They have long since adopted distinguishing jars and labels for their several preparations, which enable them to be readily recognized on the shelf of the apothecary or office-practice doctor. That the popularity with the profession and druggist of these preparations, should lead to unprincipled imitations of jars and labels and tablets, was to be expected. But it was never dreamed that reputable corporations and new companies, recognizing the code of right and seeking to do unto others as they would that others should do to them, would ever descend to the method of so closely imitating the jars, labels, and tablets of the Antikamnia Company as to be evident attempts to deceive or mislead. We are glad our attention has been called to this matter, in order that we may caution doctors and the drug trade to be on the lookout for these frauds. "*False in one; false in all.*"

The Florida Medical Association

Will hold its twenty-ninth annual meeting at Tampa, Fla., April 9th, 10th, and 11th, 1902. Dr. A. J. Wakefield, *Jacksonville*, is President, and Dr. J. D. Fernandez, *Jacksonville*, remains the earnest Secretary and Treasurer that he has been for years. In the section on *Surgery*, Dr.

J. N. D. Cloud will read a paper on *Brain Surgery*; Drs. C. B. Spratt and J. E. Boyd have a paper on *Hip Amputation by Wyeth Method*. In *Medicine*, Drs. B. G. Abernathy, U. S. Bird, J. S. Helms, and W. P. Adamson, of Tampa, will, respectively, read papers on (1) *What Can We Do to Reduce Mortality in Children?* (2) *Pain*; (3) *Treatment of Malarial Hemoglobinuria*, and (4) *Clinical Microscopy*. Dr. J. Harris Pierpont, of Pensacola, will present *A Plea for the More Common Use of the Microscope in Diagnosing Diseases of the Urinary Passages*. Dr. R. L. Goodbred, of Mayo, will read a paper on *Foreign Bodies in the Ear and Nose, with Constitutional Symptoms*. In the section on *Diseases of Children*, Dr. John MacDiarmid, of DeLand, will have a paper on *Diagnosis and Treatment of Lobar Pneumonia*, and Dr. J. H. Colson, of Waldo, will have one on *Therapeutics of Infancy and Childhood*. In *Gynecological Section*, papers will be read by Dr. J. D. Love on *The Perineum*, and by Dr. R. H. McGinnis, reporting a *Case of Cystic and Dermoid Tumor of the Ovary*. Other papers will be presented by doctors not named. Everything looks as if it will be a most interesting session.

Obituary Record.

Dr. Lawrence Ashton,

A non-resident Honorary Fellow of the Medical Society of Virginia, died at his home in Dallas, Texas, March 6, 1902. He was born in King George county, Va., August 29, 1845. His father, Dr. H. D. Ashton, who died many years ago, was a practitioner of wide influences in his section of Virginia. Dr. L. Ashton attended the academic course at the University of Virginia. He graduated in medicine from the Medical Department of the Columbian University, of Washington, D. C., and later from the Medical Department of the University of the City of New York, 1872, when he also became a private student of the late Dr. Alfred L. Loomis. He located in Fredericksburg, Va., and for years was esteemed among the prominent rising doctors of his section. He joined the Medical Society of Virginia in 1874, and attended most of the annual sessions till he moved to Dallas, Texas, 1890. He was a vice-president of this Society, 1876-77, and was a member of the Medical Examining Board of Vir-

ginia from its establishment, in 1884, till he moved to Texas. His interest in professional work was a striking characteristic. Gentle and kind to the needy, brave in the battles of his chosen profession, no one doubted the sincerity of Dr. Ashton. Loved, of course, by his friends, his enemies—if he had them—were compelled to admire his character and respect his presence. In 1890, he moved to Dallas, Texas, carrying with him the honors he had won in Virginia. He soon established himself in successful practice in his new home, and soon ranked as one of the most prominent physicians of Northern Texas—taking active interest in the promotion of the professional interests of his adopted State. It was chiefly through his noble work, while chairman of the Legislative Committee of the Texas Medical Association, that the present laws governing the practice of medicine in that State were enacted. The Dallas Medical College, in great part, owes its successful existence to his untiring efforts in advocating the necessity of its establishment in Dallas. Hence, he was made president of the college and professor of the practice of medicine in that institution. He was a frequent contributor of valuable papers to medical journals, society transactions, etc. In 1887 he married Miss Nannie Green, daughter of Captain Duff Green, of the Northern Neck of Virginia—an accomplished Virginia lady—who survives, as also an adopted daughter, the niece of his wife. He was a consistent member of the Episcopal Church. He was buried in the cemetery in Dallas.

It is hard to realize that Dr. Ashton is dead. His disease is put down in the Dallas papers as pneumonia. When he left Virginia in 1890, he was in the prime of life, and appeared to be in robust health. Beside the power of his abilities in the profession and in the communities in which he lived, he was always a great social favorite among his friends and acquaintances. He was a pure, good man, moved by every true cause for sympathy to render help, but strong and ready to fight the battles of right when persuasion or reason failed to convert the views of opponents.

I fully regard Chionia as an excellent remedy, and am highly pleased with its action in all cases of hepatic torpor, and can especially laud its action in many cases of sick headache.

Newark, Ind. J. J. Young, M. D.

Index to Volume VI.

APRIL, 1901-MARCH, 1902, INCLUSIVE.

EXPLANATIONS.—This Index is divided into TWO PARTS—FIRST, Index of Contributors, which also gives the titles of their articles, etc.; and SECOND, Index of Subjects.

In the INDEX OF SUBJECTS, the alphabetically-arranged italicized lines call attention to titles which represent original articles in this Volume.

Notices of books, colleges, deaths, journals, personals, and proceedings of societies, etc., are indexed in the INDEX OF SUBJECTS under the respective words Book Notices, Colleges, Journalistic, Obituaries, Personals, and Society and Board Proceedings, etc.

INDEX OF CONTRIBUTORS AND TITLES OF THEIR ARTICLES.

ANDERSON, CAM., M. D., Holston Bridge, Va. Physic- ians' Orphan Home, Tennessee-Virginia.....	184	CARPENTER, J. G., M. D., Stanford, Ky. The Early Operation for Appendicitis from a Pathological Stand- point	131
ARLINGTON CHEMICAL CO., Yonkers, N. Y. Memoria in Eterna	404	CARR, WM. F., M. D., Washington, D. C. Benefits of Medical Societies—The Value of Papers and Their Dis- cussion; of Pathological Specimens; of Social Features, etc.	365
ARONSTAM, N. E., M. D., Detroit, Mich. Devirgination, 82; The Medical Jurisprudence of Toxicology.....	497	CARRINGTON, CHARLES V., M. D., Richmond, Va. The Unsanitary Condition of the Virginia Penitentiary..	5
ATKINSON, W. B., M. D., Washington, D. C. A Case of Addison's Disease Treated with Supra-Renal Extract...	120	CARSTEN, J. H., M. D., Detroit, Mich. Case of Movable Liver—Hepatectomy	269
AULDE, JOHN, M. D., Kenneth Square, Pa. Gastro-Intes- tinal Therapy	570	CLAIBORNE, JOHN HERBERT, M. D., Petersburg, Va. Treatment of Purpura	479
BAIRD, T. M., M. D., Sweet Chalybeate, Va. Sweet Cha- lybeate Springs, Va.	90	CROTHERS, T. D., M. D., Hartford, Conn. Some Obscure Injuries Following the Toxlc Use of Alcohol, 257; Treatment of Delirium Tremens	540
BAUGHMAN, GREER, M. D., Richmond, Va. Physiology of the Proteids, with Its Bearing on Dietsetics and Treat- ment of Uremia	564	DAVIS, G. A., M. D., Summit Point, W. Va. The Posi- tive Value of Antidiphtheritic Serum As a Remedial Agent, with Illustrative Cases	205
BISHOP, FRANCIS B., M. D., Washington, D. C. Hemi- plegia	367	DEAS, W. A., M. D., Richmond, Va. albuminuria With- out Manifest Organic Renal Lesions	8
BOSHER, LEWIS C., M. D., Richmond, Va. Sarcoma of the Testicle	474	DEAVER, JOHN B., M. D., Philadelphia, Pa. Appendiceal Fistula, 325; Some Experiences with Blood Examination.	437
BOUTELLE, JAMES THACHER, M. D., Hampton, Va. Syphilis Domestica	561	DeSHAZO, J. BEVERLY, M. D., Ridgeway, Va. Repeal the Special License Tax—Report of Committee—Es- sentials for Success	461
BOVEE, J. WESLEY, M. D., Washington, D. C. The Use and Abuse of Ecboles, 115; Nephro-Uretrectomy—A Report of Two Cases, 434; Emmenagogues; Their Indica- tions and Uses	509	DICKINSON, S. W., M. D., Marlon, Va. Delusions in Medicine	345
BRADY, E. T., M. D., Abingdon, Va. Two Cases: (1) Transvaginal Band Obstructing Labor; (2) Prolapsed Ovary Simulating Direct Inguinal Hernia	303	DILLARD, JOHN W., M. D., Lynchburg, Va. A New Supra-Vaginal Hysterectomy Forceps	453
BROTHERS, ABRAM, B. S., M. D., New York, N. Y. Pevic Inflammation in the Female; Its Diagnosis and Management by the General Practitioner	329	DOOLITTLE, JOHN C., M. D., Independence, Iowa. The Relation of Pelvic Diseases to Insanity	154
BROWN, C. N., M. D., Webster, W. Va. Some Thoughts on Cystitis	141	DRAKE, G. W., M. D., Hollins, Va. Physiology and Pathology of Metabolism	567
BROWN, PUGH ULPIAL, M. D., Troy, Ala. An Opera- tion for Tubal Pregnancy, Complicated with Appendicitis and Fibroid Tumors of Uterus	317	DREWRY, WILLIAM FRANCIS, M. D., Petersburg, Va. The Present Status of Epileptics in Virginia	293
BROWNRIGG, ALBERT E., M. D., Concord, N. H. Clinical Value of Some of the Newer Hypnotics—Dermoll; Chlorotone; Hedonal	177	DUNN, JOHN, A. M., M. D., Richmond, Va. A Case of Severe Mastoid Neuralgia, 16; (1) Strabismus—(2) Ex- planation of Choked Disc, and Changes in the Optic Nerves Consequent Upon the Existence of Brain Tu- mors, 274; Glaucoma, 298; Three Cases of Cataract Ex- traction Where Absolute Glaucoma Existed in the Op- posite Eye	318
BURGESS, THOMAS D., Metawan, W. Va. Penetrating Gunshot Wound of the Abdomen	176	ELIOT, JOHNSON, M. D., Washington, D. C. Hemoptysis	559
BURNETT, CHARLES H., A. M., M. D., Philadelphia, Pa. The Arrest of Progressive Hardness of Hearing, Tinnitus Aurium and Ear Vertigo by Inecudotomy	137	ELLIS, JAMES N., M. D., Atlanta, Ga. The Angiotribe— Its Use and Abuse	399
CAMPBELL, MICHAEL, M. D., Knoxville, Tenn. Brain Softening	370	ELTING, ARTHUR E., M. D., Albany, N. Y. Resume of the Subject of Actinomycosis, with Report of a Case of Actinomycosis Abdominalis	321
CANAN, C. W., M. D., B. S., Ph. D., Orkney Springs, Va. Europen in the Treatment of Cystitis and Urethritis, 159; Autopsies, How Made and Their Interpretation	181	EVANS, JAMES, M. D., Florence, S. C. State Medicine..	37
CANNADAY, C. G., M. D., Roanoke, Va. Supra-Pubic Cystotomy, with a Report of a Successful Operation Under the Influence of Local Anesthesia with Schleich's Solution	248	FITCH, W. E., M. D., Savannah, Ga. The Conservative Surgical Treatment of Appendicitis	308

FRY, HENRY D., M. D., Washington, D. C. The Surgical Treatment of Painful Menstruation	372	MOORE, EDWARD KEMP, M. D., Philadelphia, Pa. Some Experiences With Blood Examination	437
GAY, JR., GEORGE W., M. D., Richmond, Va. A Clinical Resume of Typhoid Fever	139	MUSSER, J. H., M. D., Philadelphia, Pa. Chronic Myocarditis	453
GILDERSLEEVE, J. R., M. D., Tazewell, Va. Higher Medical Education	341	NEFF, WALLACE, A. M., M. D., Washington, D. C. Gunshot Wound of the Abdomen	413
GORDON, WILLIAM S., M. D., Richmond, Va. The Uric Acid Diathesis and Its Treatment	422	NUCKOLS, MARVIN E., M. D., Richmond, Va. Angina Pectoris	418
GRANDY, CHARLES R., M. D., Norfolk, Va. Serum Therapy	552	OSLER, WILLIAM, M. D., Baltimore, Md. Medical Aspects of Cancer of the Breast	84
GRAY, A. L., M. D., Richmond, Va. Tonsillitis from the Standpoint of the General Practitioner	173	PEDIGO, LEWIS G., M. D., Leatherwood, Va. Clinical Odds and Ends of Uric Acid	427
GRAY, WM. B., M. D., Richmond, Va. Anchylostomum Duodenale in Virginia	269	PRESTON, J. W., M. D., Keystone, W. Va. Some Observations Made in Handling Recent Epidemics of Small-Pox	245
HARRISON, J. PROSSER, M. D., Richmond, Va. Case of Twin Conception; Almost Painless Miscarriage of One Fœtus at Seven Months; Other Child Born at Term; One Placenta	249	PRIOLEAN, W. H., M. D., Charleston, S. C. Abnormally Small Meatus Urinarius. Important Bearing in Genito-Urinary Diseases—Operation	529
HARRISON, VIRGINIUS, A. M., M. D., Richmond, Va. Placenta Previa	107	PRITCHARD, WILLIAM BROADDUS, M. D., New York, N. Y. The Limitations of Surgery in the Treatment of Nervous and Mental Diseases	125
HAZEN, E. H., M. D., Des Moines, Iowa. New Findings in Ophthalmology	149	RANDOLPH, JR., B. M., M. D., Philadelphia, Pa. The Clinician and the Hematologist	522
HENSON, J. W., M. D., Richmond, Va. Spina Bifida	441	RARDIN, JOSEPH S., M. D., Portsmouth, Ohio. Inagination of Ileum Following Appendicitis in a Child Aged Four Months and Twenty-Seven Days	398
HIGGINS, F. W., M. D., Cortland, N. Y. Blood Examination, from the Standpoint of the General Practitioner	420	RAVOGLI, A., M. D., Cincinnati, Ohio. Clinical Notes on Gleet	270
HODGDON, ALEX. L., M. D., Fishing Point, Md. The Value of Sulphate of Quinine in the Treatment of Malarial Fevers	500	RINKER, C. F., M. D., Upperville, Va. Treatment of Fracture of the Humerus Without the Use of Coaptation Splints	524
HOGE, JR., M. D., M. D., Richmond, Va. Pathology of the Liver	14	ROBINS, CHARLES R., M. D., Richmond, Va. One Hundred and Twenty-Five Consecutive "Abdominal Operations" Occurring in My Service with Dr. George Ben. Johnston, with Remarks	1
HOPKINS, E. GUY, M. D., Richmond, Va. Practical Results from Examination of the Stomach Contents	116	ROSENBERG, LOUIS J., LL. B., Detroit, Mich. Devirgination, 82; The Medical Jurisprudence of Toxicology	497
IRVINE, ALEXANDER, M. D., Cooper, W. Va. Paracæ Anesthesia, or Sedation and Galvanization Used Simultaneously	46	SATTERTHWAITE, THOMAS E., M. D., New York, N. Y. Endo-Cardiopathies; With Critical Notes and New Figures	29
KEISTER, BITTLE C., A. M., M. D., Roanoke, Va. Report of Cases—1. Eczema Squamosum; 2. Ambulatory Typhoid Fever; 3. Lacerated Cervix Uteri, etc.; 4. Hemorrhoids Removed with Angiotribe; 5. Recurrent Appendicitis Treated Without Knife, 61; Why Doctors Disagree—A Plea for a Modern Code of Ethics	543	SHANDS, A. R., M. D., Washington, D. C. Coccygodynia—Case and Specimen, 157; The Early Diagnosis and Treatment of Hip Disease	448
KUYK, D. A., M. D., Richmond, Va. The Significance of "Running Ears." Treatment by the General Practitioner	44	SHEPARD, CHARLES H., M. D., Brooklyn, N. Y. Auto-Intoxication and Its Treatment	297
LANKFORD, LIVIUS, M. D., Norfolk, Va. Address of Welcome to the Seaboard Medical Association of Virginia and North Carolina	480	SHERILL, J. GARLAND, M. D., Louisville, Ky. Analgesia from the Spinal Subarachnoid Injection of Cocaine	111
LEIGH, SOUTHGATE, M. D., Norfolk, Va. Strangulated Hernia	449	SHROPSHIRE, WALTER, M. D., Yoakum, Texas. Malarial Infection and Its Prevention	197
LOFTON, LUCIEN, A. B., M. D., Emporia, Va. Catalepsy Due to Ingestion of Muscadines	408	SHUTE, D. KERFOOT, A. B., M. D., Washington, D. C. Empyema of the Frontal and Ethmoidal Sinuses, Complicated with Orbital Abscesses	77
LYON, IRVING PHILLIPS, M. D., Buffalo, N. Y. A Review of Echinococcus Disease in North America	445	SIMONS, MANNING, M. D., Charleston, S. C. Presidential Address Before the Southern Surgical and Gynecological Association	374
LYNCH, JUNIUS F., M. D., Norfolk, Va. Report of a Case of Subcutaneous Injection of Paraffin	249	SLAUGHTER, R. M., M. D., Theological Seminary, Va. Sporadic Trichiniasis, With Report of a Case	525
MAGRUDER, E. M., M. D., Charlottesville, Va. The Crepitant Rale	477	SMITHWICK, J. W. P., M. D., La Grange, N. C. Eosinate of Silver for Specific Urethritis; Also for Gonorrhœal Conjunctivitis	494
MAYS, THOMAS J., M. D., Philadelphia, Pa. Collective Investigation of the Influence of the Silver Nitrate Injections on Phthisis	234	STILES, CHARLES WARDELL, Ph. D., Washington, D. C. Insects as Disseminators of Disease	53
MCCONACHIE, A. D., M. D., Baltimore, Md. The Oculist's Relation to the General Practitioner	485	STOAKLEY, WM. S., M. D., Cheriton, Va. Vaccine, Not Virus, is What is Wanted	405
MCGUIRE, EDWARD, M. D., Richmond, Va. Prophylaxis and Treatment of Puerperal Sepsis	514	STONE, I. S., M. D., Washington, D. C. Sudden Death Six and One-Half Days After Gastro-Enterostomy, 130; Choledeochotomy	493
MCGUIRE, STUART, M. D., Richmond, Va. Past, Present and Future of Cancer	355	TAYLOR, HUGH M., M. D., Richmond, Va. Surgical Interest of the Sub-Peritoneal Tissue	253
MCKIMMIE, O. A. M., M. D., Washington, D. C. Foreign Bodies in Ears	533	TALIAFERRO, VALENTINE, M. D., Richmond, Va. Intravenous Infusion of the Normal Salt Solution	42
MEIER, G. C., M. D., New York, N. Y. Treatment of Insomnia by Hedonal	395	THOMAS, GEORGE H., M. D., Romney, W. Va. A Brief Note on the Treatment of Rheumatism by Aspirin	496
MICHAUX, JACOB, M. D., Richmond, Va. Ventral Fixation of Uterus for Anteflexion With Great Dysmenorrhœa, 151; A New and Original Method of Operating Upon the Inguinal Canal, 181; Ventral Fixation for Anterior Displacement of Uterus—An Original Operation	205	TURNER, WM. D., M. D., Ferguson's Wharf, Va. Christian Science and Eyesight	261

UPSHUR, J. N., M. D., Richmond, Va. Medical Treatment of Diseases of the Kidney, 250; Gastro-Intestinal Therapy	389	WEBB, CHARLES S., M. D., Bowling Green, Va. Prophylaxis and Treatment of Puerperal Sepsis	569
VANDER VEER, A., M. D., Albany, N. Y. Resume of the Subject of Actinomycosis, With Report of a Case of Actinomycosis Abdominalis	321	WELLS, WALTER A., M. D., Washington, D. C. Intubation in Laryngeal Diphtheria, With Special Reference to the Influence of Antitoxin	468
VAUGHAN, GEORGE TULLY, M. D., Washington, D. C. Case of Suture of Stab Wound of Heart, With Remarks on and a Table of Cases Previously Reported	536	WHITE, JOSEPH A., A. M., M. D., Richmond, Va. Some Interesting Cases of Headache Due to Nasal Trouble....	12
WALLACE, W. H., M. A., Disputanta, Va. A National Board of Medical Examiners	459	WILLIAMS, ENNION G., M. D., Richmond, Va. The Mosquito	306
WALSH, J. E., M. D., Washington, D. C. Scarlet Fever in the District of Columbia	58	WILLIAMS, J. WHITRIDGE, M. D., Baltimore, Md. Problems Involved in the Treatment of Eclampsia, With Illustrative Cases	83
WALTON, GEORGE E., M. D., Daytona, Fla. Uses of Buffalo Lithia Waters of Virginia	122	WILSON, J. T., M. D., Sherman, Texas. Importance and Difficulties of the Correct Diagnosis of Insanity in its Medico-Legal Aspects	192
WARNER, L. H., A. M., Ph. G., M. D., New York, N. Y. Clinical Examination of the Blood	304	WINN, JOHN F., M. D., Richmond, Va. Prophylactic Care of the Breasts Before and After Labor	546

INDEX OF SUBJECTS.

(Initial Italics indicate subjects of Original Communications to the VIRGINIA MEDICAL SEMI-MONTHLY, Volume VI.)

Abbott Alkaloidal Co., 28; — saline laxative	111	Alexander's operation, new method for	181	— in baby, 398; Recurrent —, 64; Ileum invaginated by —, 398; Operations for — and fibroid uterus complicating tubal pregnancy	317
Abdomen, gunshot wounds of, 413; penetrating wound of —, 176		Amenorrhœa, emmenagogues for	509	Appropriation of State funds for professional education; Protest against	557
Abdominal fixation for anterior uterine displacements, 161, 205; large — incision for liver abscess, 577; — metastasis of cancer, 86; <i>Consecutive abdominal operations</i>	1	American mistletoe ebolic	114	Arabian elephant foot and mosquito	55
Abscess of liver, 1, 2; tropical — of liver, 15; large incision for — of liver, 577; iliac or lumbar — ? 253; orbital —, 77; ovarian —,	2	Ampliphone, see also <i>Stethoscope</i>	144	Army canteen abolished	148
Absinthe, a cause of Addison's disease	121	Amyloid degeneration of liver ..	16	Army, Dentists for, 72; Examinations in — for Medical Department, 291; Degradation of medical department of —, 411; Reforms needed in Medical laws about —,	386
Academy of Medicine and Surgery (see also <i>Society, Board Proceedings</i>)	411	<i>Analgesia</i> (see also <i>Anesthesia</i>) spinal, 93, 94; — from spinal subarachnoid injection of cocaine	111, 206	Arctic for chorea	127
Acetic acid antidotes carbolic acid	237	<i>Anchylostomum duodenale</i> in Virginia	269	Arthritis, Osteo —, Diagnosis of, 379; Treatment of Spondylitis	144
Acetyl salicylic acid, see <i>Aspirin</i> .		Anemia cause of severe neurasthenia	312	Ascites, Landon's sign of slight 334	
Achylia gastrica	117	Anesthesia by spinal cocainization, 51; cocaine — for rupture of Quadriceps extensor muscle, 577; faradic and galvanic — simultaneously, 46; local — for removal of piles, 167; local —, with Schleich's solution for supra-pubic cystotomy, 248; hydrogen peroxide for local —,	284	Asiatic cholera serum for	556
Acid, acetic, see <i>Acetic Acid</i> ; Carbolic —, see <i>Carbolic Acid</i> ; Hydrochloric —, see <i>Hydrochloric Acid</i> ; Oxalic —, see <i>Oxalic Acid</i> ; Uric —, see <i>Uric Acid</i> .		Anesthetics, examine patient before using	373	Aspirin, substitute for salicylates, 429; — for rheumatism	496
Acte racemosa, ebolic	114	Aneurysm, popliteal	564	Association, see also <i>Society, Board Proceedings, etc.</i> , of American Medical Editors, 185; Virginia Press —,	267
Actinomyces, microscopic examination for	321	<i>Angina pectoris</i>	35, 407	Astragalotomy	19
<i>Actinomyces abdominalis</i> , Case, and Resume of subject ..	321	Angioma of liver	16	Atrophy, optic, and tabes dorsalis	143
Addison's disease treated with supra-renal extract	120	<i>Angiotribe—its use and abuse</i> , 399; as a pile clamp	63, 403	Auscultation in heart disease ..	35
Address of President Amer. Protologic Society, 163; — of President before Southern Surgical and Gynecological Association, 374; — of welcome to Seaboard Medical Association of Va. and N. C. ...	480	Animal Therapy Association proposed	364	Auto-infection, Acute intestinal 263	
Adenoma, fibro- of breast	576	Ankylosis in hip disease	490	<i>Auto-intoxication and its treatment</i>	297
Adrenalin, experiences with	168	Anopheles and culex, Comparative description of	307	Automatic safety valve stopper. 146	
Adrenal solution	80	Anteflexion of uterus, Ventral fixation for	161	<i>Autopsies, how made, and their significance</i>	181
Advertising, Medical College, 228; Professional —,	185	Anthrax and flies, 54; Preventive inoculation for	557	Autumnal fever, see <i>Typhoid fever</i> .	
Air, hot, treatment of gout	385	Antidiphtheritic serum as remedial agent, Positive value of	205	Aveling's apparatus for intravenous infusion	43
Alabama, osteopathy is practice of medicine in	460	Antidote, Acetic and carbolic acids	237	B acillus typhosis	314
Albuminuria and eclampsia, 88; — without manifest organic renal lesion	8	Antikamnia, Frauds against, 581; — and quinine laxative ..	23	Bacteria in puerperal infection. 514	
Albuminuria retinitis of pregnancy	144	Anti-membrane, see <i>Antitoxin</i> .		Bassini operation	1, 3
<i>Alcohol, physiological and pathological action</i> of, 172; action of — on heart, 220; pathology and psychology of intoxication by —, 257; phenomena of intoxication by —,	260	Antipyrin and quinia in whooping-cough	237	Bedsores, Ethol for	95
Alcoholism and life insurance ..	210	Antiseptic surgery	41	Bile duct, Calculi removed from, see <i>Cholelithotomy</i> .	
		Anti-tetanic serum for tetanus. 406		Biliary sand	16
		Antitoxin, How made, 552; — as membrane dissolving agent in diphtheria, etc.	468	Binder for breast, or Y binder ..	551
		Antivenomous serum	557	Biographies of physicians, etc., Colony of Virginia	290
		Anus, Pockets in, 166; Treatment of poswits of —,	74	Birth after death	52
		Aortic regurgitation	576	Black death, see <i>Plague</i> .	
		Apiol is ebolic	114	Blood-clot, Healing after mastoid operation under	572
		<i>Appendiceal fistula, Causes and treatment</i>	325, 328	<i>Blood examinations, Clinical</i> , 304; Importance of — —, 437; Simple methods for — —, 420; <i>Some Experiences in blood examinations</i>	437
		<i>Appendicitis, Conservative surgical treatment</i> of, 308; —, 1;		Blood lavage	43

Blood parasites 437
 Blood-serum on typhoid bacillus, Effects of typhoid 314
 Blood, Superstitions among Jews concerning 237
 Boards (see also *Society, Board Proceedings, etc.*), confederated, medical and licensing, 123; National Medical Examining —, 469; Medical Examining — of Va. ... 171, 221, 501
 Boils, bone-felons, etc., How to abort 186
 Bone, Metastasis of cancer to.. 87
 Book Notices, etc.:
Abrams—Diseases of the Heart; Diagnosis and Treatment 49
Alkaloidal Clinic Edited by 238
Sexual Hygiene 238
Apres—Physical Diagnosis in Obstetrics 50
Bishop—Uterine Fibromata—Their Pathology, Diagnosis and Treatment 240
Blakiston's Son & Co.—3,500 Questions on Medical Subjects, Arranged for Self-Examination. Third Edition 171
Bons & Bosch—Diseases of the Intestines 286
Bohm, Davidoff, Huber & Cushing—Text-Book of Histology 24
Breitenbach's Year-Book 484
Brubaker—Compend of Human Physiology. Tenth Edition 170
Bryant—Operative Surgery. Vol. II. 239
Butler—Diagnoses of Internal Medicine 239
Cabot—Guide to the Clinical Examination of the Blood for Diagnostic Purposes. Fourth Edition 287
Cattell—International Clinics. Tenth Series, 1900, Vol. IV, 55; Eleventh Series, 1901, Vol. I, 191; Vol. II, 288; Vol. III 286
Cheyne & Burghard—Manual of Surgical Treatment. Vol. V 285
Corkley—Manual of Diseases of the Nose and Throat. Second Edition 265
Cohen—System of Physiologic Therapeutics. Vols. I and II, 241; Vols. III and IV 385
Davis—Obstetrics and Gynecologic Nursing 96
Dos Passos—Commercial Trusts—The Growth and Rights of Aggregated Capital 578
Eichhorst & Eshner—Text-Book of the Practice of Medicine. Vol. II 193
Ellingwood—Systematic Treatise on Materia Medica and Therapeutics. 25
Ewing—Clinical Pathology of the Blood 220
Fisher—Infant Feeding in Its Relations to Health and Disease 66
Foltz—Diseases of the Eye 49
Friedrich & Curtis—RhinoLOGY, Laryngology and Otolary—Their Signification in General Medicine 25
Gould—American Year-Book of Medicine and Surgery, 1901. Vol. II 66
Gray—Anatomy, Descriptive and Surgical. Fifteenth Edition 482
Hand & de Schreivitz—Saunders' Medical Hand-Atlas. Atlas and Epitome of Ophthalmoscopy and Ophthalmoscopic Diagnosis 242
Hare—System of Practical Therapeutics. Second Edition. Vol. I, 24; Vol. II, 97; Vol. III 192
Hare & Landis—Practical Hygiene. Vol. I, March, 1901, 66; Vol. II, June, 1901, 266; Vol. III, September, 1901, 460; Vol. IV, December, 1901 482
Harrington—Manual of Practical Hygiene 96
Hatfield—The Acute Contagious Diseases of Childhood 192
Head—Practical Medicine Series of Year-Books 483

Head & Andrews—The Year-Book of the Nose, Throat and Ear 26
Hemmeter—Diseases of the Intestines. Vol. I 410
Hollander—The Mental Functions of the Brain 256
Hunter—Oral Sepsis as a Cause of "Septic Glanditis," "Toxic Neuritis," and Other Septic Conditions. 190
Hutchinson—Atlas of Clinical Medicine, Surgery and Pathology 484
Jacob—Rey-Referent Histology. Book of Skin Diseases. Fourth Edition 287
Jacob & Fisher—Atlas and Epitome of the Nervous System and Its Diseases 238
Jacrot—Essentials of Obstetrics, 4th Edition 577
Kehr & Seymour—Introduction to the Differential Diagnosis of the Separate Forms of Gall Stone Disease. Keyser—Medico-Legal Manual 66
Kyle—Text-Book of Diseases of the Nose and Throat 96
Leaf—Practical First Principles 287
Lea & *Blakiston*—Physiology. Visiting List for 1902 410
Lloyd—Etidiorpa, or the End of Earth. Eleventh edition, 265; Warwick of the Knobs 507
Loyd—Panama and the Sierras—A Doctor's Wander Days 49
May—Manual of Diseases of the Eye, for Students and General Practitioners. Second edition 386
Mays—Pulmonary and Tubercular and Allied Diseases of the Lungs 96
McFarland—Text-Book Upon the Pathogenic Bacteria 25
Palmer—Favorite Prescriptions of Practitioners, with Notes on Treatment. Seventh edition 239
Park—A Treatise on Surgery by American Authors. Third edition. 409
Polk's Medical Register of the United States and Canada 100
Potter—Hand-Book of Materia Medica, Pharmacy and Therapeutics. Eighth Edition 240
Powell & Hand—Saunders' Question-Compend—Essentials of the Diseases of Children. Third Edition. 241
Reed—Text-Book of Gynecology 190
Robson—Guide to the Instruments and Appliances Required in Various Operations 25
Roget & Gabriel—Introduction to the Study of Medicine 24
Sajous—Annual and Analytical Cyclopedic of Practical Medicine. Vol. VI 265
Saunders' Medical Hand-Atlas 242, 43, 265
Scudder & Cotton—Treatment of Fractures 97
Senn—Principles of Surgery. Third edition 241
Shaker & Edgar—Saunders' Medical Hand-Atlas—Atlas and Epitome of Labor and Operative Obstetrics. Fifth edition, 243; Atlas and Epitome of Obstetric Diagnosis and Treatment 265
Simon—Manual of Chemistry. Seventh edition 315
Struppell, Vickery & Knapp—Text-Book of Medicine. Third edition. 335
Sturgis & Cabot—Students' Manual of Venereal Diseases. Seventh edition 147
Surgeon General U. S. Marine Hospital Service—Public Health Reports. Vol. XV, (July to December, 1900). 409
Taylor & Leiman—Memoranda on Poison. Eighth edition 241
Taylor—Physician's Pocket Account Book 335
Taylor & Wells—Manual of the Diseases of Children. Second edition 95
Thorington—Retinoscope (or Shadow Test) in the Determination of Refraction at One Meter Distance, with the Plane Mirror. Fourth edition 191

Thornton—The Medical News Pocket Formulary for 1901 171
Treat & Co.—International Medical Annual, 1901 170
Tyson—Manual of Physical Diagnosis. Fourth edition 507
Wainwright—Urinary Diagnosis and Treatment, 49; Syllabus of New Remedies and Therapeutic Measures 192
Whitman—Treatise on Orthopedic Surgery 242
Williams—Manual of Bacteriology. Second edition 815
Winters—The Feeding of Infants—Home Guide for Modifying Milk 96
Wright—Text-Book of Ophthalmology. Second edition 191
 Bowl, see *Colon*.
 Bow-leg (see also *Genu valgum*). Location of deformity. 195
 Bottini operation for senile hypertrophy of prostate 210
 Bottle stopper, important 146
 Bovine heart 576
 Bradycardia 34
Brain softening, Causes, diagnosis, symptoms, etc. 370
 Brain tumors cause changes in optic nerve, 279; — localized, 46; optic neuritis of —, 143
 Breast-binder, Advantages of. 553
 Breast cancer, medical aspects of 84
 Breast inflammation, see *Mastitis*.
 Breast massage, pump, etc., Uses and abuses of 551
 Breasts, Prophylactic care of. 546
 Bright's disease (see also *Nephritis*) and endocarditis. 31
 Bronze-skin disease, see *Addison's disease*.
 Bubonic plague (see also *Plague*), serums for 553
 Buffalo Lithia Waters, Uses of. 122
 Cabinet, Professional representation in President's 268
 Caffeine on heart, action of 219
 Calcaneus talipes Congenital infantile paralysis simulating 279
 Calculus, Biliary, 16; Renal —, 1; Operation for removing — from common bile duct, 493; Renal and vesical 406
 California medical practice laws 71
 Camphor-phenique for pruritus. 76
 Camphor on heart, Action of, 219; — menthol solution 80
Cancer. Present and future of, 355; Medical aspects of — of breast, 84; — of liver, 16; — of pylorus, etc., 117; Recurrent — of breast, 576; Treatment of gastric —, 214, 359, 391; — of uterus, rectum, etc., 1; Parasite of —, 50; Prognosis of —, 360; Inoculation with — negative 357
 Canteen, Army, abolished 148
 Carbolic acid antidoted by acetic acid, 237; — for pruritus 76
 Cardia, Cancer of 117
 Cardiac diseases (see also *Endocardopathies*), 30; — enlargement, 576; — drugs and vaso-motor treatment 218

- Caries of cervical spine, crepitus in, 379; — of coccyx, with operation, 157; spinal — and paraplegia 20
- Carunculae myrtiformis 83
- Castration for senile hypertrophy of prostate gland 209
- Catalepsy due to ingestion of muscadines 403
- Cataract Extraction in Three Cases Where Absolute Glaucoma Existed in Opposite Eye 318
- Catarrhal Inflammation of Naso-Pharynx, Relation of infectious diseases to 261
- Cellular Therapy Association, Proposed Tri-State 364
- Cellulitis sub-peritoneal, Possibilities of 253
- Census of 1901, Facts from 171
- Cerebral embolism and endo-cardio-pathies, 36; — localizations, 48; — metastasis of cancer 84
- Cervix lacerated, 62; Dilatation of — uteri in obstetric practice 313
- Chalybeate Springs, Sweet 90
- Chest (see *Thorax*), Funnel 22
- Child-birth after death 52
- Children, School, Defective Eyes among 98
- Chimborazo Hospital Company 124
- Chloralamid for insomnia 73
- Chloral hydrate for pruritus 76
- Chloretone, Clinical Value of, as Hypnotic 177
- Choked Disc, Explanation of, and Changes in Optic Nerves Consequent Upon Existence of Brain Tumors 279
- Cholangitis 15
- Cholecystitis 2
- Cholelithotomy 493
- Cholelithiasis 3
- Cholera, Asiatic, Serum for, 556; — and flies, 54; Remedies for — infantum 1-72
- Chordee, Treatment of 160
- Chorea and heart disease, 30; — in adult, 574; Surgery disappoints in 127
- Choroid, Sarcoma of 86
- Christian Science, 351; — Science and Eye-sight, 261; — Scientists and faith-cure Doctors 184
- Cimicifuga racemosa, Ecboic 114
- Circumcision for nervous troubles 128
- Cirrhosis of liver 15
- Clinician and Hematologist 522
- Club-foot (see also *Calcaneus*), 19; Congenital 21
- Cocain anesthesia for rupture of quadriceps extensor, 577; — dangers, 111; — for spinal analgesia, 94, 111; Operations in which — is frequently used, 335; — solution, 80; analgesia from spinal sub-arachnoid injection of —, 51, 706
- Coccygodynia, Case and Specimen 157
- Code of ethics, Plea for modern* 543
- Colchical in gouty conditions 95
- Colic, kidney, treatment of 252
- Colitis, Recto 165
- College advertisements, 228; *Medical Statistics in U. S.* 292
- Colleges, Universities, Hospitals, etc.:
 Central University of Medicine and Science 285
 Chimborazo Hospital Company 124
 College of Physicians and Surgeons, Baltimore 233
 Columbian University Med. Dept. 233
 Cornell University Medical College 232
 Eastern (Va.) State Hospital 267
 Hygela Medical College 28
 Jefferson Medical College 232
 Medical College of Alabama 232
 Medical College of Va. 230
 Medico-Chirurgical College 232
 New Orleans Polyclinic, 12, 172, 190, 206, 233, 244, 252, 284, 329, 355, 373, 456, 469, 468, 492 515
 Southwestern (Va.) State Hospital 70, 194
 St. Luke's Hospital 28, 194
 St. Vincent's Hospital 52
 University College of Medicine, Richmond, Va. 68, 231, 292
 University of Maryland, School of Medicine 233
 University of Nashville, Med. Dept. 231
 University of Pennsylvania 172
 University of Virginia 28, 230
 Vanderbilt University, Med. Dept. 231
 Western Pennsylvania Medical College 231
 Western Reserve University, Med. Dept. 231
 Woman's Medical College of Pennsylvania 232
- Colon, Resection of 1, 167
- Colorado Medical practice laws 71
- Coma, diabetic, Saines intravenously for, 43; — from opium, 369; — of alcohol, 368; — in hemiplegia, 368; Uremic —, 369; Treatment of uremic — 170
- Conception, Twin; *One foetus miscarried at seven months; other born at term; one placenta* 249
- Confederation of medical examining and licensing boards 123
- Conjunctiva, Superficial wounds of 331
- Conjunctivitis, gonorrhoeal, Treatment with silver nitrate 494
- Connecticut medical practice laws 71
- Consumptive convicts in Texas 264
- Consumption, Koch's paper on 220
- Constipation, Congenital valvular 330
- Contusion of hip joint, Diagnosis of 490
- Convulsions, see *Eclampsia*.
- Cor bouinum, see *Bovine heart*.
- Cornea, Superficial wounds of 331
- Correction of Dr. Pringle's address 581
- Cotton root is ecboic 114
- Cough, whooping, Antipyrin and quina for 237
- Coxalgia (see *Hip joint disease*) 19
- Coxa vara 20, 380
- Crepitant rale 477
- Crepitus in cervical Potts' disease 379
- Culex faciatus, see *Stegomyia*;
 — and anopheles, comparative description of 307
- Cure-Faith, doctors and Christian Scientists 184
- Cylindroids and casts 146
- Cystitis, *Some thoughts on*, 141; Diagnosis, etiology, prophylaxis and treatment of — in women, 314; Treatment of — with eruphorin 159
- Cystogen for cystitis 143
- Cystotomy, supra pubic, for senile prostatic hypertrophy, 209; supra pubic — under local anesthesia with Schleifets solution 248
- Cysts, ovarian 1
- Deafness due to running ears, 4; Incudectomy for progressive 138
- Death, Childbirth after 52
- Deforation 82
- Deformity following osteitis of knee corrected, 363; Location of — in bow legs 195
- Degenerates, Diagnosis of 102
- Delirium tremens, Paper on 540
- Delusions of Medicine, 45; — of insanity 102
- Dementia paralytica (see *Insanity*), Diagnosis of 103
- Dentists from Virginia Colleges, 19, 70; Dentists from Army 72
- Dermoid of ovary 3
- Devirgination 821
- Diabetes, Aspirin for, 429; Diagnosis of — mellitus, 189; Saines intravenously for coma of — 43
- Diagnosis by exploratory incision, 376; Ophthalmoscopy and stethoscopic aids in — 140, 144
- Diarrhea, Facts about, 186; Listerine for summer — 170
- Diathesis, Uric acid, and its treatment 422
- Dietetics, etc., of uremia, etc. 564
- Digestion, Healthy 390
- Digitalis on heart, Action of 219
- Dilatation of stomach 118
- Diphtheria antitoxin of positive value, 205; Intubation for laryngeal —, and value of antitoxin, 463; Serum for — 554
- Diploma mill, medical, exterminated 285
- Diplopia due to frontal disease 81
- Disc, choked, explained, and optic nerve changes due to brain tumors 279
- Diseases disseminated by insects, 53; Ages at which various — kill 333
- Dislocation of hip and patella, Congenital, 22; — of hip, 577; of patella 190
- Dislocation and fractures in tubercular joint diseases 381
- Displaced uterus, 1; Ventral fixation for anterior — uterus 205

- Doctors, Executive ability of, 268; What becomes of young —, 230; Young —, 282; Why — disagree, 543; Faith-cure — and Christian scientists, 184; Need of — in legislation, 581; — Orphan Home, 184; Tax on —, 484
- Dormiol as hypnotic, Value of, 177
- Douche does mischief if indiscriminately used 213
- Drinking water purified, healthfulness and cost 243
- Dropsy of peritoneum, see *Ascites*.
- Drugs, Cardiac and vaso-motor, 218; — taken by nurses affect nursing 186
- Drug substitution illegal in Tennessee 288
- Dysentery and endocarditis 31
- Dysmenorrhœa, Causes and surgical treatment of 373
- Dyspepsia, 390; Treatment of 116
- E**ars, Practical hints on foreign bodies in, 534; Incudectomy for noises in —, 137; Significance of running —, 44
- Ebers papyrus 172
- Echolite, Use and abuse of*, 114
- Echinococcus disease in North America 445
- Editors, Association of American Med. 135
- Elimination of poisons 298
- Elephant foot, Arabian 55
- Education, Protest against appropriation of State funds for professional, 557; Plea for higher medical —, 342
- Eclampsia Problems involved in treating*, 88; *Veratrum* for puerperal —, 93
- Ecraseur 399
- Ethol for bedsores 95
- Eczema squamosum, Case 61
- Embolisms and endocardopathies 36
- Emmenagogues — their indications and uses*, 509; —, 114
- Empyema of mastoid antrum, 16; Drainage for —, 577; — of frontal and ethmoidal sinuses, complicated with orbital abscess 77
- Endocardopathies — Critical notes and figures on* 29
- Endocarditis, Causes of 30
- Endometritis, Cervical 62
- Enteric fever, see *Typhoid fever*.
- Enterostomy, Gastro, 130; Indications for gastro —, 262
- Eosolate of silver for specific urethritis; also for gonorrhœa conjunctivitis* 494
- Epilepsy, Surgery disappoints in, 126 Case of traumatic —, 406; *Present status of — in Virginia*, 293; Diagnosis of insanity of —, 105
- Equino-varus 19
- Ergot as ebolic 114
- Erysipelas and endocarditis ... 31
- Erythrocyte count, Value of, ... 439
- Ethics, Plea for modern code of, 543
- Ethyl chloride to prevent skin pain 94
- Eucaïn adjuvant to Schleich's solution, 248; — for spinal analgesia 94
- Europheïn in treatment of cystitis and urethritis* 159
- Examinations, Oral College ... 27
- Examining Board, see *Society, Board Proceedings, Hospitals, etc.*; Confederated licensing and —, 123; National Medical —, 459
- Executive ability of doctors of medicine 268
- Exophthalmos and orbital abscesses 79
- Exposition, Pan-American .73, 194
- Extract, see *Supra renal extract* 1, 2
- Eye displaced by frontal diseases, 81; Removal of foreign bodies from —, 331; troubles, etc., (see also *Ophthalmology*). Cataract extraction of opposite — with existing absolute glaucoma, 318; — sight and Christian science, 261; — strain cause of headache, 487; Superficial injuries of —, 330
- F**aithe-cure doctors and Christian scientists 184
- Faradic anesthesia or sedation and galvanization used simultaneously* 46
- Felon, bone, To abort 186
- Femoral hernia strangulated... 1
- Femur dislocated congenitally, Van Arsdale's splint for, 22; — fractured by metastasis of cancer 87
- Fever, To control high, 264; Malarial fever treated with quina, 500; Puerperal —, see *Puerperal sepsis*. Scarlet —, see *Scarlet fever*; Typhoid —, see *Typhoid fever*; Typhomalarial —, see *Typhomalarial fever*; Yellow —, see *Yellow fever, etc.*
- Fibro, adenoma, of breast ... 576
- Fibroids, Uterine, 12; Operation for uterine — and appendicitis complicating tubal pregnancy 317
- Filiaria disease and mosquito 55, 306
- Filtration for purifying drinking water 243
- Organs in — women 154
- Fistula, appendicular, 325; symptoms of fecal — in appendicitis 328
- Flies in typhoid, tuberculosis, cholera, etc. 54
- Foreign bodies in ear*, 524; — in rectum 168
- Forceps, New supra-vaginal hysterectomy 453
- Fracture of bones, Cancer and, 87; Congenital — of femur, 22; — of humerus treated without coaptation splints, 524; — and dislocation in tubercular joint disease 381
- Frauds against Antikamnia ... 581
- Freedmen's Hospital, Assistant Surgeon to 336
- Frontal sinus, Empyema of 77
- Funds, State, for professional education protested against... 557
- Funnel chest 22
- Furunculosis and endocarditis.. 31
- G**all-bladder obstruction 2
- Gall stone 16
- Gametocytes 198
- Gastric achylia, 117; Treatment of — cancer, 217, 391; To determine approximate amount of hydrochloric acid in contents, 264; Treatment of — ulcer, etc. 391
- Gastritis, chronic, glycozone and hydrochloric acid for ... 263
- Gastro-enteritis, Diagnosis and treatment 393
- Gastro-enterostomy, Indications for, 262; Sudden death days after —, 130
- Gastro-intestinal therapy* 390
- Gastrostomy, 573; Gastrotomy.. 2
- Genito-urinary diseases, Bearing of very small meatus on 529
- Genu valgum (see also *Knock-knee*), 23; Osteotomies for — and varum 380
- Gland, Thyroid (see *Thyroid gland*), Case of accessory ... 572
- Glaucoma, 298; Absolute — in opposite eye from cataract extraction, 318; Javal's case of —, 299; Etiology, treatment, etc., of —, 300
- Gleet, Clinical Notes on* 270
- Glycerinated vaccine lymph versus dried lymph 284
- Glycozone and hydrozone for chronic gastritis 263
- Gonorrhœa and endocarditis, 30, 31; — treated with silver eosolate 494
- Gout and goutiness, Practical aspect of, 381; Relation of — and rheumatism to tuberculosis, 330; Nervous strain producing —, 433; Colchical for — conditions 95
- Graduates, Medical, What is to become of, 230; — in Medicine from Univ. Col. Medicine 68, 69
- Gunshot wound, penetrating ... 176
- H**affkine's serum 553
- Haig's theory of diabetes, 428; — of gout 424
- Headache due to nasal trouble, 12; — of eye trouble 487
- Health, Nervous acquirement of 313
- Hearing, Incudectomy for hardness of 137

- Heart, stab wound, suture of, with table of cases, 536; Bovine —, 576; — disease (see also Endocardopathies), 29; Fibroid —, see Myocarditis; Influenza —, 283*
- Hedonal hypnotic, Clinical value of, 177; — for insomnia 395*
- Hematology, 304; — positively diagnosed few diseases 523*
- Hematoma 2*
- Hemiplegia 367*
- Hemoglobin examinations, Value of 439*
- Hemoptysis 559*
- Hemorrhage from kidney, Treatment, 252; Salines intravenously for profuse —, 42; New method of controlling — in head and neck operations, 281; — of placenta previa 110*
- Hemorrhoids, Angiotribe for, 63, 403; — removed under local anesthesia 167*
- Hepatic (see also Liver), metastasis of cancer, 86; — and renal functions closely related 236*
- Hepatectomy for movable liver 269*
- Hernia (see also Femoral, Inguinal, Ventral), direct inguinal simulated by prolapsed ovary, 303; Inguinal —, 1, 2; New operation for inguinal —, 181; Safe procedure for relief of constriction in —, 451; Strangulated —, 449, 452, 576*
- Heterophoria 150*
- Hiccough 264*
- Hip disease, acute, 19; Ankylosis in —, 490; Case of — diagnosed and radically treated, 488, 491; Dislocation of —, 577; Dislocation of — with femoral fracture, 22; Ambulatory brace of plaster-of-Paris in — joint disease 492*
- Home for orphans of doctors 184*
- Hospital Company, Chimborazo, 124; Assistant surgeon Freedmen's —, 336; University of Virginia —, 28*
- Hot-air treatment of gout, Falterman's 385*
- Humerus fractured, treated without coaptation splints 524*
- Hydatid disease in animals 447*
- Hydrochloric acid in gastric contents, to determine approximate amount of 264*
- Hydrogen peroxide bottle stopper, 146; — local anesthetic, 284; — and tongue phenomenon 189*
- Hydrorachus, see Spina bifida.*
- Hydrosalpinx 1*
- Hydrozone and glycozone for chronic gastritis 263*
- Hygla Medical College of Cleveland, O., not recognized 28*
- Hyperchlorhydria 117*
- Hyponotics, 395, 396; value of some newer —, 117*
- Hysterectomy, 1; New supra vaginal — forceps, 453; angiotribe in supra-vaginal —, 402*
- Ichthyol for pruritus 76*
- Ileo-colic intussusception 2*
- Incidectomy to arrest progressive deafness, Tinnitus aurium, ear vertigo, etc. 137*
- Indiana Medical practice laws. 71*
- Indigestion, 390; Case of lithemic — with treatment 398*
- Infantile paralysis simulating congenital talipes calcaneus, 379; spinal —, 19*
- Infection, acute, auto-, intestinal, 263; Isolation to prevent 41*
- Infectious diseases to chronic catarrhal nasal and throat inflammations 261*
- Inflammation, catarrhal, of naso-pharynx, due to infectious diseases, 261; Symptoms, diagnosis, management of pelvic — in female by general doctor 329*
- Influenza and endocarditis, 31, 283; Complications of —, 283*
- Infusion of normal salt solution intravenously 42*
- Inguinal canal, New operation upon, 181; Direct — hernia simulated by prolapsed ovary 303*
- Injuries following toxic use of alcohol, Obscure 257*
- Insane, General paralysis of, 103; Examination of pelvic 103*
- Insanity, Epileptic, 105; Impotence and difficulties of diagnosis of, 101*
- Insects disseminate disease 53*
- Insomnia treated by hedonal, 395; Treatment of — of mania, 73; — of melancholy 103*
- Insurance, Life, and alcoholism 210*
- Intestinal auto-infection, acute, 263; Gastro — therapy, 390, 570; Treatment of prolonged — strangulation 451*
- Intoxication, Auto, Treatment, 397; — in U. S. Army, 148; Phenomena of alcoholic 260*
- Intravenous infusion of normal salt solution 42*
- Intubation in laryngeal diphtheria, with reference to use of Antitoxin, 468*
- Intussusception 2*
- Invagination of ileum after appendicitis in child, aged nearly five months 398*
- Iridectomy for glaucoma 299, 302*
- Isolation to prevent infection, 41*
- Itching, see Pruritus.*
- Jaundice, peculiar case, with enormously distended gall bladder 408*
- Jews, superstition concerning blood among 237*
- Joint disease, Tubercular, fractures and dislocations in 381*
- Journals:**
- Atlanta Journal—Record of Medicine 316*
- Journal of Physical Therapeutics 194*
- Medical Mirror 194*
- Therapeutic Monthly 100, 316*
- Jugular pulsation and tricuspid regurgitation 35*
- Jurisprudence of toxicology, Medical 497*
- K**
- Kansas medical practice laws 71*
- Kidney (see also Nephritis, also Renal), Treatment of acute congestion of, 250; — lesions not essential to eclampsia, 88; Movable —, 1, 2; Treatment of diseases of —, 250, 252*
- Knee-cap, see Patella; Knock-knee Genu Varum 363*
- Knee, Correction of deformity, following osteitis of 363*
- Koch's new theory about tuberculosis, 196, 220; Test of — 267*
- Kratometer, Uses of 149*
- L**
- Labia of Bushman and Hot-tentot virgins 83*
- Laboratory for poisons 190*
- Labor, prophylactic care of breasts before and after, 546; Management of —, 517; Preparation for —, 516; Second stage of —, 123; Transvaginal band obstructing —, 303*
- Lacerated cervix 62*
- Landon's sign of slight ascites 334*
- Laryngeal diphtheria, intubation in, with special reference to influence of antitoxin 468*
- Lavage of the blood 43*
- Laveran's malarial plasmodium, life cycle of 198*
- Laws, etc., medical, reforms needed in U. S. Army 386*
- Laxative, Abbott's saline, 111; — antikamnia and quinine 23*
- Lead poisoning, optic neuritis of, 143; "White of," ebolic 114*
- Legislature, need of doctors in 581*
- Leprosy and yellow fever situation in, 291; Serum for —, 557*
- Leucocytosis, practical value of examination for, 439; Pus is not always accompanied by 522*
- Library of Medical Society of County of Kings 193*
- License tax on doctors, 484; Report of Committee on repeal of special — — Va. physicians, essentials for success, etc. 461*
- Licensing medical boards confederated 123*
- Life insurance and alcoholism 210*
- Linea albicantes 83*
- Lipomata, retro-peritoneal 256*
- Literature, its relationship to medical profession 405*
- Lithamia, see Uricacidemia.*
- Lithotomy, nephro 1*
- Lithia waters, Buffalo 122*

Liver (see also *Hepatic*), *Case of Movable Hepatostey*, 269; of —, 1, 2; Result of abdominal incision for — abscess, 577; — in elimination and production of nephritis, 234; — lesions frequent in eclampsia, 88; Pathology of —, 14
 Localization of brain tumors ... 46
 Lock-jaw, see *Tetanus*.
Lotio nigra for pruritus 76
Lumbago as a manifestation of excessive uric acid 427
 Lumbar puncture 94
 Luxation of patella 190
Lymph, glycerinated vaccine vs. dried lymph 284

M
Malaria and mosquito, 54, 55; Historical observations concerning —, 197; — transmitted by mosquito, 306; Theory as to relapse of —, 202
Malarial Infection and Its Prevention 197
Malarial fever spread by mosquito, 48; Treatment of — with quinine, 500; Typho —, 140; Life history of — plasmodium in mosquito, 308; Life cycle of — plasmodium of Laveran, 198; contributing causes of — infection, 199; Process of — infection during transmission in mosquito... 199
 Mal, petit and grand 105
 Mammae of devirginity 83
 Mammary gland — inflamed, see *Mastitis*.
 Manganese dioxide, ebolic 114
 Mania, diagnosis and treatment 72, 102
 Massage of breast, uses and abuses of 551
Mastitis, etiology of 549
Mastoid Neuralgia, Case of Severe, 16; — disease dut to running ears, 44; — operation with nealing under blood clot 572
 McKinley, President, assassination, 267, 291; autopsy of —, 290
 Measles and endocarditis, 81; — simulated by small-pox 246
Meatus Urimarius abnormally small, Import bearing in Operating in genito-urinary diseases 529
 Medal, Nicholas Senn prize... 316
Medical jurisprudence of toxicology, 497; *treatment of diseases of kidney* 250
 Medical College statistics of U. S., 292; — — advertisements, 228; Benefits of — societies, 365; Change in By-Laws of Medical Examining Board of Virginia, 171; Degradation of — department of U. S. Army, 411; Examinations in — department of U. S. Army, 291; Library of — Society of Coun-

ty of Kings, 193; — diploma mill exterminated, 285; — examining and licensing boards confederated, 123; — officers must have no opinion, 483; — positions to be filled in U. S. service, 289; National — examining board, 459; Reforms needed in U. S. Army — laws, 386; Relationship of literature to — profession, 405; What is to become of — graduates? 230
 Medicine, Delusions of, 345; Advance in State —, 37; Executive ability of doctors of —, 268; Osteopathy is practice of — in Alabama, 460; — preserves to-day much to remind of period of mythology 316
 Mediastinal cancer 86
 Medico-legal aspects of insanity 101
 Melancholia, diagnosis of, 102, 103; — preceding Addison's disease 121
 Meniere's symptoms, incudectomy for 137
 Meningocele and meningo-myelocoele 441
 Menstruation, Conditions tending to improper performance of function of, 570; *Surgical treatment of painful* — 372
 Menthol-camphor solution 80
 Mental diseases, surgery of, 125; — unsoundness (see *Insanity*) 101
 Mesmer and his workings 350
Metabolism, physiology and pathology of 567
 Methylene blue for pruritus ... 76
 Michigan medical practice laws. 71
 Milk prophylactic of eclampsia, 88; To decrease — secretion.. 551
 Mind, see *Mental*.
 Minnesota medical practice laws 71
 Missouri medical practice laws 71
 Mistletoe, American, ebolic... 114
 Monstrosity 577
 Morbilli, see *Measles*.
 Mortality in various diseases, probable age of 333
Mosquito 306
 Mosquito and anthrax, malaria, yellow fever, etc., 48, 54; Extinction, genera, habita, and history of malarial plasmodium in —, 306, 308; — as transmitter of disease, 199, 306; To get rid of —, 26
 Mountain climbing 90
 Murmurs, heart 34
 Muscadines cause catalepsy ... 403
 Muscle, rupture of quadiceps extensor, cocaine anesthesia. 577
 Myelocoele, 442; Meningo —, ... 441
Mycarditis. Chronic, 453; *Symptomatology, pathology of, etc., with — cases* 456, 457
 Myomata, uterine indications in treatment of 408
 Mythology preserved in many ways by medical terms, etc., of to-day 346

N
 Naso-pharyngeal troubles of ear disease 137
 National Board of Medical Examiners, 459; confederation of State medical and licensing boards 123
 Navy, Surgeon-General of U. S.. 411
 Negroes and tuberculosis, 41; Defective eyes among —, 98
 Nephritis, acute parenchymatous and interstitial treatment, 251; treatment of chronic parenchymatous —, 252, 169; Liver in elimination and production of —, 234
 Nephro-lithotomy, 1; — *Ureterectomy, Two Cases* 434
 Nephrorrhaphy 1
 Nervous and mental diseases, surgery of, 125; acquirement pathogenesis of signs and treatment of — breakdown.. 313
 Neuralgia, mastoid, case..... 16
 Neurasthenia, severe, dependent upon anemia 312
 Neuritis, optic, of lead poisoning, brain tumors, etc. 143
 Neurology, surgery in 125
 Neurosis, diagnosis of, at hip-joint, 491; Planist's —, 491
 Nipples, care of, during pregnancy, etc. 549
 Normal salt solution, intravenous infusion of 42
 Nose troubles and headache, 12. 137
 Nursing, Length and frequency of, 549; Drugs taken by — women which effect nursing.. 186
 Nutmeg liver 15

O
 Obesity affects pulse wave ... 145

O
Obituaries:
 Ashton, Dr. Lawrence 582
 Burroughs, Dr. Richard Berrien ... 40
 Cheatham, Dr. Thomas J. 196
 Pratt, Dr. Whitcomb Elipheth... 100
 Stockell, Dr. Hugh 124
 Talaferro, Dr. Philip Alexander... 196
 Warner, Dr. Wm. R. 28

Obstetric practice, dilatation of cervix uteri in 313
 Obstipation, see *Constipation*.
 Occipital ache of melancholy .. 103
Oculist's Relation to General Practitioner 485
 Oesophagus, Stricture of 2
 Officers, medical, must have no opinion 483
 Oil sweats 144
 Operation, Alexander's new method, 181; Explanatory — for diagnosis, 376; mastoid — with healing under blood clot, 572; New method of controlling hemorrhage in — upon head, neck or inguinal canal, 181; — for prolapse of rectum, 407; — for senile hypertrophy of prostate gland, 209; Plastic — on nose by subcutaneous injection of paraffin ... 249
Ophthalmology, New Findings in 149

- Ophthalmoscope in clinical diagnosis, 143; Use of — should be familiar to general practitioner 487
- Opticians should not prescribe but fill prescriptions 488
- Optic nerves, Changes in, consequent upon brain tumors — explanation of choked disc, 279; — neuritis of lead poisoning, brain, tumor, etc. 143
- Orbital abscess complicating frontal and ethmoidal empyema 77
- Orphan Home, Physician's 184
- Orthopedics, Skiagraph in 381
- Osteitis of knee, correction of deformity following, 363; — of mastoid 16
- Osteo-arthritis, diagnosis of 379
- Osteomyelitis and endocarditis. 31
- Osteopaths not physicians in Virginia 67
- Osteopathy defined, 353; — in Virginia, 26, 578; — is practice of medicine in Alabama. 460
- Osteotomies for correction of bow legs and knock-knees 380
- Otorrhea, significance and treatment of 45
- Ovarian Cysts 1
- Ovariectomy 1
- Ovaritis, chronic 2
- Ovary, prolapsed, simulating direct inguinal hernia. 303
- Oxalic acid ebollic 114
- Ozema and abscess 77
- P**
- Palsy, writers, in young 406
- Pan-American Exposition 72, 194
- Papine in treatment of acute peritonitis 183
- "Papyros Ebers" 172
- Paraffin, subcutaneous injection of, for plastic operations 249
- Paralysis, general, of insane, 103; Infantile — simulating congenital talipes calcareus, 379; Infantile spinal —, 19; — on one side of body 367
- Paraplegia and spinal caries, 20; — dolorosa 84
- Parasites in blood 437
- Paresis, general 103
- Pasteur's preventive inoculation for rabies 557
- Patella, dislocated, congenital, 22; Fracture of —, 406; Luxation of —, 190
- Patent affirmed, validity of phenacetin 558
- Pathology of the Liver 14
- Pelvic diseases, Relation of, to Insanity, 154; Inflammation in female; Diagnosis and management by general practitioner 329
- Penis glands, relationship of prostate gland and 530
- Penitentiary, unsanitary condition of Virginia 5
- Pennyroyal, ebollic 114
- Peritoneal, Sub, tissue, structure, relations, extensions and disorders of 253
- Peritoneum, dropsy of, see Ascites.
- Peritonitis, acute, anodyne treatment of, 183; — from delayed operation kills 131
- Peroxide hydrogen, a local anesthetic 284
- Personals, etc.:
- Abbott Alkaloidal Co. 28, 111, 580
- Angler Chemical Co. 539
- Antikamnia Chemical Co. 23, 581
- Battle & Co. 388
- Brock, Dr. Charles B. 28
- Crothers, Dr. Thomas D. 195
- Douglas, Dr. Richard 196
- Farbenfabriken of Elberfeld Co., 194, 558
- Ferguson, Dr. Richard 172
- Foster, Dr. L. S. 267
- Hoen, Prof. A. G. 292
- Hoge, Dr. M. D. 88
- Koch, Dr. Robert 196
- Lambert Pharmaceutical Co. 170
- Maugruder, Dr. E. M. 507
- McGee, Dr. James B. 52
- McGuire, Dr. Hunter 558
- McGuire, Dr. Stuart 292
- McKinley, President Wm. 267, 290, 291
- Mellier Drug Co. 558
- Parke, Davis & Co. 532
- Preston, Dr. Robert J. 194
- Priddy, Dr. A. S. 52
- Prioleau, Dr. W. H. 581
- Rio Chemical Co. 316
- Robbins, Dr. Henry Alfred 100
- Sander, Dr. Enno 187, 266
- Senn, Dr. Nicholas 316
- Wight, Dr. T. H. Toyntee 532
- Perverts, diagnosis of 102
- Petit Mal 106
- Pharmacy graduates from Virginia Colleges 69, 70
- Phelps' method of treating fractured humerus without operation splints 524
- Phenacetin patent affirmed, validity of 558
- Philippines, No yellow fever in.
- Phonendoscope (see also *Stethoscope*) 144
- Phthisis pulmonalis, Relation of gout and rheumatism to, 330; Influence of silver nitrate injection on 234
- Physical-psycho laboratories 99
- Physicians of Virginia, Biographical history of, 290; Need of — in Legislature, 581; — Orphans Home, 184; The young —, 230, 282
- Piles (see also *Hemorrhoids*), removal under local anesthesia 167
- Placenta Prævia 107
- Plague bacillus, how found, 313; Historical sketch of — of World, 187; Report of — commissioners 312
- Plasmodium malariae, Laveran's life cycle of 198, Life history of — in mosquito. 308
- Plastic operation on nose by subcutaneous injection of paraffin 249
- Pleural cavity, pus in, drainage for 577
- Pneumonia and heart disease, 30; serum for —, 554
- Podagra, see *Gout*.
- Poisons, Careless handling of, with death as consequence, is manslaughter, 497; Channels of entrance and exit of —, 498; Conditions modifying and governing actions of —, 498; Definition of —, 497; Elimination of —, 297; Laboratory for —, 190; Sale of — restricted 497
- Poisoning feigned, 499; Lead —, see *Lead*; Treatment of —, 499
- Papilital aneurysm 574
- Post-cervical ache 103
- Post-mortem examinations, see *Autopsies*.
- Potts' disease, cervical crepitus in 379
- Prayer for sick attended by doctor, refused 27
- Practitioner, general, in relation to oculist 485
- Practice of medicine, osteopathy is, in Alabama 460
- Preacher who won't pray for sick attended by doctor 27
- Pregnancy, albuminuric retinitis of, 144; Extra-uterine, 1, 2, 317; Operation for tubal — complicated with appendicitis and uterine fibroids, 317; tubulogamoutous —, 318
- Presidential Address Before Southern Surgical and Gynecological Association* 374
- President's address before Medical Society of Virginia, 341; Professional representation in — Cabinet 268
- Press Association of Virginia. 267
- Preventive medicine, advances in 37
- Prize, Enno Sander, 187, 266; Nicholas Senn — medal. 316
- Proctologic Society, American, President's address 163
- Professional advertising, 185; Protest against appropriation of State funds for — education, 557; — representation in President's Cabinet 268
- Profession, medical, relationship of literature to 405
- Prognosis in hip-disease 489
- Prolapsed Ovary Simulating Direct Inguinal Hernia*, 303; Uterus 62
- Prophylactic Care of breasts before and after Labor* 546
- Prophylaxis and Treatment of Puerperal Sepsis* 514, 569
- Prostate, Relationship of glands penis and, 530; Operations for senile hypertrophy of —, 209
- Proteids, Physiology of, with Bearing on Diabetes and Treatment of Uremia* 564
- Protest against appropriation of State funds for professional education 557
- Protozoan of cancer 51

Pruritus ani treatment 74
 Psychology of alcoholic poison-
 ing 257
 Psycho-physical laboratories... 99
 Puerperal eclampsia, Veratrum
 for, 93; Early recognition of
 — sepsis, 515; Intra-uterine
 douche in — sepsis, 518, 520;
 Lesions and bacteria in —
 sepsis, 514; Prophylaxis and
 treatment of — sepsis, 514,
 569; — fevers and endocardit-
 is, 31; — sepsis discussed, 92, 124
 Pulmonary consumption, its re-
 lation to gout and rheuma-
 tism, 330; Dr. Koch's paper
 on — tuberculosis 220
 Pulse in heart disease, 34; con-
 ditions affecting — wave... 145
 Pump, Breast, uses and abuses. 551
 Puncture, lumbar 94
 Pupils, variable inequality of... 105
 Purpura symptomatic of pathol-
 ogical condition, and effec-
 tive treatment of —, 479
 Pyemia and endocarditis 31
 Pyelitis in women, diagnosis,
 etiology, prophylaxis and
 treatment 314
 Pyelonephritis in women, Diag-
 nosis, etiology, prophylaxis
 and treatment 314
 Pylorus, Cancer of 117
 Pysopalpinx 2

Quinine and antikamia, laxa-
 tive, 23; — and antipyrin in
 whooping-cough, 237; — ec-
 bolie, 114, 115; — sulphate in
 treatment of malarial fevers. 500
 Quinsy, see *Tonsillitis*.

Rabies, Pasteurism for, 557;
 serum for —, 557
 Radiographs through plaster of
 Paris 21
 Rale, Varieties of 477
 Rape and devirgination 82
 Rectal prolapse, treatment of... 167
 Recto-colitis 165
 Rectum, foreign bodies in, 168;
 malignant tumors of —, 162;
 operation for prolapse of —,
 407; sarcoma of —, 162
 Reforms needed in U. S. Army
 medical laws, etc. 386
 Refraction errors 150
 Renal (see *Kidney*) abscess, 3;
 — and hepatic functions
 closely related, 236; — calcu-
 lus, 1; — and vesical calculi. 406
 Relief bills proposed in Virginia. 28
Report of Five Cases 61
 Retinitis albuminuria (see also
Ophthalmoscope) 144
 Rheumatism and endocarditis,
 30; — and spondylose rhizo-
 melique, 21; Diagnosis of —
 at hip-joint, 491; Muscular or
 fibrous — a manifestation
 uric acid, 427; Relation of —
 and gout to phthisis pulmona-
 lis, 330; *Treatment of — by*
Aspirin 496

Rhizomelique spondylose 20
 Richmond Academy of Medicine
 and surgery 27, 411
 Rue, ebolic 114
 "Running-gears," *Significance of*
 Rupture of quadriceps extensor
 muscle, Cocaine anesthesia
 for 577

Safety-valve stopper, auto-
 matic 146
 Salicylates, continued adminis-
 tration often causes trouble.. 496
 Salicylic acid, acetyl (see *As-
 pirin*) for pruritus 76
 Saline laxative, Abbott, 111;
 Formula for — solution, 44;
 Uses of — intravenously ... 43
 Salt solution, normal, intraven-
 ous use of 42
 Sanarelli's serum for yellow
 fever 556
 Sander, Enno, prize 187, 266
 Sanmetto for cystitis, 143; — in
 uterine congestion 168
 Sarcoma of choroid, 86; — of
 rectum, 162; *Causes, frequen-
 cy, diagnosis, treatment of —*
of testicle 474
 Savin, ebolic 114
 Scarlatina (or *Scarlet Fever*)
 and endocarditis in District
 of Columbia, 58; — serum ... 556
 Schleich's solution for supra-
 pubic cystotomy, Local anes-
 thesia with 248
 School children, defective eyes.. 98
 Sciatica as a manifestation of
 excessive uric acid 427
 Science, Christian, and eye
 sight, 261; Christian — and
 faith cure doctors 184
 Scirrhus, see *Cancer*.

Sclerosis of ovary 1
 Sclerotomy, Indications for An-
 terior, 298; — — — poste-
 rior 298, 302
 Seaboard Medical Association
 of Virginia and North Caro-
 lina, Address of Welcome... 480
 Sedation, Faradew and galva-
 nization used simultaneously. 46
 Senn prize medal 316
 Sepsis, Puerperal, 92, 124; Pro-
 phylaxis and treatment of —
 —, 574, 569
 Septicemia and endocarditis ... 31
Serum Therapy for diphtheria.
*Asiatic cholera, leprosy, pneu-
 monia, rabies, scarlatina,*
*streptococcic infection, syphi-
 lis, tetanus, tuberculosis,*
typhoid fever, yellow fever, etc.,
 552, 557; Positive value of
 anti-diphtheritic —, 205;
 Antivenomous —, 557; Effect
 of typhoid blood — on
 typhoid fever bacillus, 314;
 Haffkine's —, 553; Practical
 value of examination, 438;
 Theory of — therapy, 552;
 — treatment of puerperal sep-
 sis, 93; Varieties of sepsis,
 550-557; Yeosins 553

Shock, Salines intravenously for 43
 Sigmoid disease 165
 Sigmoidoexy for prolapsed
 rectum 167
 Singultus, see *Hiccoughing*,
 Sinus empymic, Frontal and
 ethmoidal 77
 Silver eosolate for gonorrhoea
 and gonorrhoeal conjuncti-
 vitis 494
 Silver nitrate injections for ph-
 thisis, Collective investiga-
 tions of action of 234
 Skiagraph in orthopedics 381
 Sleep affects pulse wave 145
 Sleeplessness, treatment of by
 hedonal 395
Small-Pox, Observations made
in Handling Recent Epi-
demic, 245, (see also Variola),
 28; Atypical —, 246; Baby
 born with — eruption well
 marked, 247; Diagnosis of —
 from syphilis at times diffi-
 cult, 246; — simulating mea-
 sles, 246; Symptoms of — in
 recent epidemics 246
Societies, Benefits of Medical —
Value of Papers and Their
Discussion; of Pathological
Specimens; Of Social Fea-
tures, etc., 365; Result of in-
creased knowledge in 376

Society, Board Proceedings, etc.:
 American Academy of Medicine... 91, 99
 American Dermatological Associa-
 tion 220
 American Electro-Therapeutic As-
 sociation 99
 American Medical Association, 72, 91, 99
 American Proctologic Society... 99, 162
 Association of American Medical
 Editors 99, 185
 Association of Medical Officers of
 U. S. Army and Navy 99
 Baltimore Medical and Surgical As-
 sociation 92, 143, 405
 Clinical Society of Maryland 572
 Church Hill Medical Society of
 Richmond, Va. 70
 Florida Medical Association 581
 Medical and Chirurgical Society of
 Richmond, Va. 532
 Medical Examining Board of Va.,
 124, 171, 195, 221, 501
 Medical Society of the County of
 Kings, N. Y. 193
 Medical Society of the Missouri Val-
 ley 267
 Medical Society of Virginia 364
 27, 28, 195, 267, 291, 316, 336, 364
 Mississippi Valley Medical Associa-
 tion 98, 195, 292
 National Confederation of State
 Medical Examining and Licensing
 Boards 123
 New York Academy of Medicine... 19, 379
 Pharmaceutical Association of the
 State of Virginia 28, 195
 Philadelphia Neurological Society... 46
 Richmond Academy of Medicine and
 Surgery 27, 407, 411
 Seaboard Medical Association... 388, 558
 South Carolina Medical Examining
 Board 454
 Southern Surgical and Gynecological
 Association 290, 329, 338
 Tri-State Annual Cellular Therapy
 Association 504
 Tri-State Medical Association of the
 Carolinas and Virginia 567
 Tri-State Medical Society of Ala-
 bama, Georgia and Tennessee... 266
 Virginia Press Association 267
 Virginia State Bar Association... 28
 Virginia State Dental Association... 28

- Western Ophthalmologic and Oto-Laryngologic Association 99
- Society, American Proctologic, President's Address, 163; library of Medical — of County of Kings 193
- Sores, bed, ecthol for 95
- South Carolina Medical Examining Board Law, proposed change in 484
- Southern Surgical and Gynecological Association, President's Address 375
- Specialism, Benefits of, 485; — does not limit field of general practitioner, 486; Prerequisites for practice of —, 377; — a result of increased knowledge in medicine 485
- Specialists, classes of, 485; When should — be called? 486
- Sphygmometer for diagnosis 145
- Sphygmograph in diagnosis, 145; — not reliable 35
- Spina Bifida* 441
- Spinal analgesia, 93, 94, 111; — caries and paraplegia, 20; — cocaineization, 51; — metastasis of cancer, 84; Infantile — paralysis, 19; Analgesia from — sub-arachnoid injection of cocaine 206
- Spine, Crepitus in Pott's disease of 379
- Split for fractured femur, Van Arsdale's, 23; Treatment of fracture of humerus without coaptation — 524
- Spondylitis arthritis, treatment 144
- Spondylolsthesis, case 23
- Spondylose Rhizomelique 20
- Sporadic Trichiniasis, with Report of Case* 525
- Sprain at hip-joint, Diagnosis 490
- Springs, Buffalo Lithia, 122; Sweet Chalybeate — 90
- Squamous eczema 61
- Stab-wound of heart, suture of, with table of cases reported 536
- Staphylococcus pyogenes aureus State funds for professional education, Protest against 557
- State Medicine* 37
- Stegomyia fasciati and yellow fever 56
- Sterility in women 211
- Stethoscope in diagnosis 144
- St. Luke's Hospital, Va. 28
- St. Vitus' dance, see *Chorea*.
- Stomach, Practical Results from examination of contents*, 116; Causes of dilatation of —, 391; Medical treatment of cancer of —, 217; Treatment of ulcer of —, 391; Use of — tube 390, 393
- Stone, see *Calculus*.
- Stopper, automatic safety-valve. 146
- Strabismus — Explanation of choked disc, and changes in optic nerves consequent upon brain tumors* 274
- Strangulated Hernia* 449, 576
- Strangulation, Prolonged intestinal 451
- Streptococic infections, serum fly, 57; — medical practice laws 71
- Stricture of esophagus 2
- Strychnia for tie 128
- Sub-arachnoid, spinal analgesia, 111; Analgesia from — injection of cocaine, 206; — cocaineization 51
- Sub-Cutaneous Injection of Paraffin, case* 249
- Sub-Peritoneal Tissue, Surgical Interest of* 253
- Substitution of drugs illegal in Tennessee 288
- Sudden death six days after gastro-enterostomy* 130
- Summer diarrhoea, Listerine for 170
- Supra-pubic Cystotomy, Successful Operation Under Local Anesthesia with Schleich's Solution* — — for senile hypertrophy of prostate gland 209
- Supra-renal extract treatment of Addison's disease 120
- Supra-Vaginal Hysterectomy Forceps, new* 453
- Suppuration, Extension of, via sub-peritoneal structure 253
- Surgeon, Assistant, Freedman's Hospital, 336; — General U. S. Navy, 411; Biographical history of — of Virginia 290
- Surgery, antiseptic, 41; — with cocaine anesthesia 335
- Surgery in treatment of nervous and mental diseases, limitations of* 125
- Sweating of oil 144
- Sweet Chalybeate Springs of Virginia* 90
- Sympathectomy Indications, for 298
- Syphilis Domesticata*, 561; Serum for —, 557; — in the respectable, 563; — rarely attacks heart valves 31
- T**abes dorsalis, optic atrophy, 143
- Tachycardia 34
- Talipes (see *Club-foot*) calcarens congenital, infantile paralysis simulating 379
- Tallerman hot air treatment of gout 385
- Tansy, ebolic 114
- Tape-worm in dogs 447
- Tax on doctors, 484; *Virginia Physicians Repeal of Special License* — 461
- Taxation, Comparative 463
- Temperatures, To control high. 264
- Tenia echinococcus, Occurrence of 447
- Tennessee, substitution of drugs illegal in 288
- Testicle, Sarcoma of 474
- Test-meal of Ewald 117
- Tetanus after vaccination in Camden, N. J., 387; Cases and treatment of —, 406; Serum for — 554
- Texas, Consumptive convicts of, 264; — fever in cattle due to fly, 57; — medical practice laws 71
- Therapy, Serum 552
- Thoracic metastosis of cancer. 85
- Thorax, Funnel 22
- Thyroid, Accessory gland, case of, 572; Effect of — extract, 145; — gland of women enlarged after copulation 83
- Tic, surgery disappoints in 128
- Tiptinus aurium, incudectomy for 137
- Tongaline 497
- Tongue and hydrogen peroxide. 189
- Tonsillitis from Standpoint of General Practitioner* 173
- Torticollis, a manifestation of excessive uric acid, 427; Surgery disappoints in spasmodic — 128
- Toxicology, medical jurisprudence of 497
- Toxin, Anti-, how made 552
- Tracheotomy versus intubation, 469
- Transvaginal Band Obstructing Labor* 303
- Trephining frontal sinus 81
- Trichiniasis, Diagnosis, etc., 525, 526
- Trichinosis, see *Trichiniasis*.
- Tri-iodides, Henry's 42
- Trional for insomnia 73
- Tri-State Cellular Therapy Association, Proposed 364
- Tropical abscess 15
- Tse-tse fly 57
- Tubal Pregnancy, Operation for, Complicated with Appendicitis and Uterine Fibroids* 317
- Tube casts and cylindroids 146
- Tubercular joint disease, fractures and dislocations in, 381; Treatment of — kidney 252
- Tuberculin, test value of 555
- Tuberculosis, American Congress of, 508; — and flies, 54; Animal — not transmitted to human beings, 267; Koch's new theory about —, 196, 220; Prevalence of —, 40; Serums for — 555
- Tuberculous spine, Crepitus in. 379
- Tumors, Brain, causing changes in optic nerves — explanation of choked disc, 279; localization of brain —, 46; malignant — of rectum, 162; — of breast in child, 576; Operation for fibroid — of uterus and appendicitis complicating tubal pregnancy 317
- Turpentine, ebolic 114
- Tympanic vertigo, Incudectomy for 137
- Typhoid and flies, 54; Case of ambulatory — fever, 62; — fever, 406; Effect of — blood serum on — bacillus, 314; Serum for — fever 556
- Typhoid Fever, Clinical Resume of* 139
- Typho-malarial fever 140
- U**lcer of stomach, treatment of 391

Urea lessened in eclampsia 88
 Uremia, Etiology, symptomatology and treatment of 565
 Uremic coma, treatment of 170
 Ureterectomy, Nephro, two cases 434
 Urethral orifice, abnormally small, important bearing in genito-urinary diseases 529
 Urethritis (see *Gonorrhoea*), Treatment of — with euprophen 159
Uric Acid, Clinical Odds and Ends of, 427; Origin of 381
 Uric acidemia (see *Uric Acid*), manifestations of 423
 Urinalysis for diagnosis, etc. 145
 Urinary, Genito-, diseases, important bearing of abnormally small meatus urinarius in ... 529
 Utopin for cystitis 143
 U. S. Army, Degradation of Medical Department, 411; Reforms needed in — — — medical laws 386
 U. S. Medical Service, Positions to be filled in 289
 Uterine Cervix, Dilatation of, in obstetric practice, 313; Faradic sedation and galvanization simultaneously in — diseases, 46; Indications in treatment of — myomata, 408; Operations for — fibroids and appendicitis complicating tubal pregnancy, 317; Sanmetto for — congestion 168
 Uterus (see also *Cervix*), Cancer of, 1; Fibroid —, 1; Ventral fixation of — for ante-flexion, 164; — — — for anterior displacements 205

Vaccination, Efficacy of, 247; Tetanus in Camden, N. J., following —, 387; Result of no State law as to —, 245
 Vaccine lymph, Glycerinated vs. dried lymph, 284; —, not virus, is wanted 405
 Vaginal douche, Indiscriminate use of, mischievous, 213; Trans — band obstructing labor 503
 Valvular disease (see also *Endocardio-pathies*), 29; Aortic —, 576
Value of Sulphate of Quinine in Malarial Fevers 500
 Van Arsdale splint for fractured femur 23
 Vara coxa 20
 Variola (see *Small-pox*) and endocarditis 31
 Varus, see *Club-foot*.
 Vasectomy for senile hypertrophy of prostate gland 209
 Vasomotor treatment and cardiac drugs 218
 Venomous, Anti-, serum 557
Ventral Fixation for Anterior Displacements of Uterus—Original Operation, 205; Hernia, 3; Fixation of Uterus for anterior flexion 161
 Vento-suspension 2
 Veratrum viride for puerperal eclampsia 93
 Vermiculus 198
 Vesical and renal calculi 406
 Virginia Biographical history of physicians and surgeons, 29; Osteopathy in —, 26, 67, 578; present status of epilep-

tics in —, 293; President's address before Medical Society of —, 341; — Press Association, 267; — State Board of Medical Examiners (see *Society, Board Proceedings, etc.*) 221, 501
Virginia Penitentiary, Unsanitary Condition of 5
 Virginitis, Signs of 83
 Washington medical practice laws 71
 Water, Buffalo lithia, 122; Healthfulness and cost of purification of drinking —, 243; How to cool — without ice... 187
 Whites, Defective eyes frequent among 98
 Whooping-cough, Antipyrin and quinine in 237
Why Doctors Disagree—Plea for Modern Code of Ethics 543
 Wisconsin medical practice laws 71
 Woman, Drugs taken by nursing, which affect nursing, 186; causes of sterility in —, 212
 Wound of abdomen, Gunshot, 176, 413; Suture of stab — of heart, with cases previously reported 536
 Writer's palsy in young 406
 Y-Binder, How to make 551
 Yellow fever and leprosy situation improved, 291; No — — in Philippines, 26; Serum for — —, 556; — — spread by mosquito 48, 56, 506
 Yezsin's serum 553
 Zygote 198, 308

