

COUNTWAY LIBRARY



HC 3145 6

BOSTON
MEDICAL LIBRARY
8 THE FENWAY



Digitized by the Internet Archive
in 2015

<https://archive.org/details/californiastatej1919medi>



California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Secretary
Editor
Managing Editor

SAXTON POPE, M. D.
ALFRED C. REED, M. D.
CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

Alameda.....Dr. E. Spence Du Puy, Oakland
Butte.....Dr. Edward Baumbach, Chico
Contra Costa.....Dr. P. C. Campbell, Richmond
Fresno.....Dr. D. I. Aller, Fresno
Glenn.....Dr. W. H. Walker, Willows
Humboldt.....Dr. L. P. Dorais, Eureka
Imperial.....
Kern.....Dr. C. A. Morris, Bakersfield
Lassen-Plumas.....
Los Angeles.....Dr. Wm. Wenzlick, Los Angeles
Marin.....Dr. W. F. Jones, San Rafael
Mendocino.....Dr. O. H. Beckman, Fort Bragg
Merced.....Dr. Brett Davis, Merced
Monterey.....Dr. T. C. Edwards, Salinas
Napa.....Dr. Robt. Crees, Napa
Orange.....Dr. H. A. Johnston, Anaheim
Placer.....
Riverside.....Dr. Paul E. Simonds, Riverside
Sacramento.....Dr. S. E. Simmons, Sacramento
San Benito.....

San Bernardino.....Dr. C. L. Curtiss, Redlands
San Diego.....Dr. Robt. Pollock, San Diego
San Francisco.....Dr. Le Roy Briggs, San Francisco
San Joaquin.....Dr. Dewey R. Powell, Stockton
San Luis Obispo.....Dr. Paul K. Jackson, San Luis Obispo
San Mateo.....Dr. A. L. Offield, Burlingame
Santa Barbara.....Dr. Robert W. Hartwell, Santa Barbara
Santa Clara.....Dr. Chas. Richards, San Jose
Santa Cruz.....Dr. J. C. Farmer, Santa Cruz
Shasta.....Dr. F. Stabel, Redding
Siskiyou.....
Solano.....Dr. A. V. Doran, Vallejo
Sonoma.....Dr. N. Juell, Santa Rosa
Stanislaus.....Dr. E. F. Reamer, Modesto
Tehama.....
Tulare.....Dr. J. T. Melvin, Porterville
Tuolumne.....
Ventura.....Dr. C. A. Jenson, Ventura
Yolo.....Dr. Frances L. Newton, Woodland
Yuba-Sutter.....

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

JANUARY, 1921

No. 1

Notice

The annual tax, payable by the holders of any form of certificate entitling them to practice any system of the healing art in the State of California, will be due January 1, 1921, and delinquent sixty days thereafter. Failure to pay the tax within the period specified automatically revokes a certificate, and a penalty fee of \$10.00 is required for reinstatement.

TITHES

"Render unto Caesar," etc.

From time to time it is advisable to publish some of the essential requirements of membership in the State Medical Society.

In the first place, it is necessary to be a licensee in the State of California.

An officer in the Army or Navy can not join the State Society unless he has a state license from the Board of Medical Examiners. He may become an honorary member of a County Society. This gives him no standing in the state organization.

A fellow of the American Medical Association, or a member of another State Society can not transfer into our State Society. He must enter as a member of a county unit, and pay his full dues. Our dues are more and give more in return than others do.

Every member must be licensed by the State Board of Medical Examiners.

A member in good standing can join the Indemnity Defense Fund by paying \$30. This is no yearly assessment, but periodic, probably lasting four or five years.

The physician must pay many dues and taxes to maintain his proper relation to the federal, state and municipal governments.

You must pay your narcotic tax and your municipal license, as a matter of course. If you fail in doing this, the government in question will look into your case.

But if you fail to pay your state tax, a sum of

two dollars which goes to the State Board of Medical Examiners, you forfeit your license to practise medicine.

To be in good standing in the State Medical Society, to receive Medical Defense, to be a member of the fund, you must pay your state tax and your county dues.

DON'T FORGET THIS! DO IT NOW!

THE LEGISLATURE

We assume that every doctor, like every other good citizen, knows the members of the legislature from his district. These members are assembled now at Sacramento. They will be deluged with requests from many quarters to introduce a motley variety of bills.

There is no profession whose work enters so intimately into every field of life as the work of the medical profession; and, therefore, there is no profession whose work can be so easily hampered by thoughtless legislation as the work of the medical profession. To prevent the legislature from enacting pernicious legislation we must be vigilant.

There are many agencies sincerely interested in health work that are eagerly promoting new health programs. Some of these health programs exploit the doctor and are impractical of administration. When such are introduced you will be informed so that you may inform your representative.

Although the cultists and quacks were decisively defeated at the general election on November 2, there is evidence that they will annoy the legislature and endeavor to secure by wheedling what they failed to secure by direct appeal to the people.

Your co-operation should be given promptly to the League for the Conservation of Public Health which, during the forty-third session of the legislature, opposed and defeated a great variety of bills that contained lurking dangers and effectively supported constructive legislation. The same spirit of service for the common good will govern the League during the forty-fourth session.

VANITAS VANITATUM.

Nowhere is the familiar adage, "Vanity, thy name is woman" better exemplified than in the luxurious quarters maintained by the so-called beauty specialists. Extensive advertising prominently placed in the columns of our Sunday papers allures the unwary by promises of "prospective beauty." To them women flock in search of perennial youth, some submitting to the electric needle for the removal of superfluous hirsute adornment (?); some for operative treatment to remove by the process of "lifting," the "bagginess" under the eyes or the wrinkling of the face, while others seek again that rotundity of chest and face which adds the charm to youth.

A. M., who conducts a well-known "beauty parlor," advertises a licensed M. D. in attendance, but for some time past the cosmetic operative work has been performed by an unlicensed individual with a record of revoked license in another State, and more than once arrested in this State for violation of the Medical Act. H. G., another beauty specialist, reported E. C. (the individual referred to) had performed an operation on H. G. for the removal of paraffin injected under the skin of the face. Infection resulted, and the skill of Dr. G. was taxed to heal the infected area without a most noticeable facial scar. On the forehead of this same "beauty specialist" is another scar where paraffin has been removed, and yet H. G. persists in using this "filling" process on others, claiming there is no paraffin used.

Mrs. C. reports several scars on her face as a result of surgical removal of the injection used by H. G. Mrs. G. suffered from a very obstinate ulceration of her chest as a result of the injection of this non(?)-paraffin oil. Mrs. D. presented the appearance of one asleep, for she found it impossible to elevate her upper eyelids owing to this injection, and her money was refunded. Mr. M., several months after the oil had been injected into his cheek, presented the appearance of one suffering from a most active ulceration of a molar tooth, with his eye practically closed, and so we might continue. But a new scheme has now developed. It might be compared to the "re fee" dodge perpetrated on the victims of the advertising specialist's office long since closed by the Board of Medical Examiners. Perchance with the realization of the damage effected by the filling process, word has gone forth that H. G. will return to San Francisco with a powerful electric appliance, which will absorb the indurated area of connective tissue which marks the site of former "filling."

We read in the advertising columns of the Examiner of a clinic where by use of a new (magic?) lamp, these indurated areas are absorbed, and we are informed the entrance fee to this clinic is \$5.00 with an additional charge of \$1.00 for each treatment. And to what end?

'Tis a sequence of tragedies. A. fills the face of G., who goes to C. for removal, infection follows, and a licensed M. D. brings about recovery. G. as a mark of appreciation "fills" others, who report dire results. C. operates,—followed again

by infection with a permanent resultant scar on each side of the face,—60 days in the county jail,—back to his work in a well-known beauty parlor,—is reported to have adopted Wallingford methods during an Eastern trip of employers.—later opened an office in a prominent Market street building,—free (?) clinic reported at \$5.00 entrance and \$1.00 treatment,—where the marvelous lamp is used, and the end is not yet.

H. G. is reported as returning with a marvelous electric machine for removal of ill effects of filling, both of which are significant acknowledgment that ill effects follow, and yet the women clamor to sacrifice their good money at the altar of Beauty, that will-o'-the-wisp which cannot be won by superficial artifice, and when their quest is vain, pride impels them to keep secret the story of their folly, thus making it practically impossible to stop the operations of those who, by "filling" the faces of the unwary, bounteously fill their own pockets with the money of the realm.

"MEDICAL FREEDOM"

"George Washington gave us political freedom, the Puritan fathers gave us religious freedom, and Governor Edwards gave the State of New Jersey medical freedom," declared the president of the New Jersey Chiropractors' Association, in stentorian tones, at a recent banquet in Newark. When the tumultuous applause evoked by this outburst died down he was followed, the papers announce, by the Sewerage Commissioner.

This is the same Governor Edwards who promised to make New Jersey as wet as the Atlantic. His contribution to medical freedom is as important and effective as his contribution to prohibition. The papers also state that 750 chiropractic licenses have been issued by the new chiropractic board during its brief existence, which demonstrates that this exclusive chiropractic mill, unlike the mill of the gods, does not grind slowly or exceedingly fine.

By "medical freedom" the chiropractors, the incompetent, the quacks, apparently claim that anyone should be free to treat any of his fellow citizens foolish enough to employ him. They object to any law that restricts this alleged right and assert that it is in conflict with the Fourteenth Amendment. The Jersey Governor and his medical freedom chiropractors are not so insistent upon the provisions of the Eighteenth Amendment.

It is not open to question that all vocations and professions are open and must remain open to all citizens on like conditions. It is proper for the state in order to insure qualified teachers to prescribe conditions on which the man or woman may enter its teaching service. It is also proper for the state to insist that those who desire to practice law shall meet definite requirements. The state, to protect the property and the assets of its citizens, has established certain laws to govern banks.

The state has a higher duty to protect the health and lives of the people. To fulfill this duty it is necessary for the state to determine the qualifications of those who treat the sick and require that all who are licensed for this important call-

ing shall have the fundamental education, technical skill and good character to safeguard the public health. To ascertain that each applicant possesses proper qualifications an examination by one qualified board is the proper procedure—a board that prescribes adequate regulations to secure the public against the consequences of ignorance and incapacity.

The medical profession of New Jersey, judging from its recent resolutions, was derelict in its civic duty. It failed to inform the people and the legislature, and now cultism is dividing honors with the carnivorous mosquito that since the days of Lords Carteret and Berkeley has maintained its freedom to defy the health laws of Jersey.

\$100,000 TO FIGHT VIVISECTION

During the recent campaign many people wondered who was paying for the tons of lurid literature that were scattered broadcast throughout the state. It was evident to all that the anti-vivisectionists had abundant funds and did not hesitate to spend them. They are now preparing for their next campaign and \$100,000 has just been left by the will of Ruth C. Hawkins "to abate the wicked horror of vivisection."

If plans have not yet been formulated for the expenditure of this latest bequest, we would suggest that it might be used to endow popular lectures on what vivisection has done and is doing for the prevention and treatment of disease, the improvement of health, the relief of suffering and the happiness of humanity. Animal experimentation and the work of the men and women in this most helpful service furnish the most fascinating chapters of human progress.

It is regrettable that a few prejudiced people filled with reckless emotionalism, who close their eyes and ears but unloose their tongues, can stir up so much clamor against an agency of human progress that is constantly bestowing benefits on all. They resist all rational appeal and chatter about science and logic.

A few years ago Dr. W. W. Keen wrote a convincing article on vivisection in the Ladies' Home Journal. Instead of convincing the "tender-hearted" anti-vivisectionists it drew from them this loving message to Dr. Keen:

"Arch Fiend:

We read with horror your article in the Ladies' Home Journal on vivisection. We hope your mother if she is living will die in the most horrible torture, and if she is dead that her soul will never know rest for having given life to such a vile monster as you, is the nightly prayer of a dozen women who indited this."

No names were signed to this sympathetic message, but it bore the Los Angeles postmark. The \$100,000 might well be devoted to supplying the milk of human kindness to this angelic dozen.

The first time that the people ever rendered a verdict upon the value of vivisection was in California on November 2, 1920. By the overwhelming majority of 254,842 the people of this state placed their firm stamp of approval on scientific progress. Every county of California repudiated the cruel charges and baseless claims of the anti-

vivisectionists. The result was not an accident. It was produced by a well-directed campaign that placed the facts persuasively before the people.

It would be very unfortunate, and in a brief time disastrous, if those who conducted the campaign should be lulled into false security by our recent victory. This \$100,000 donation should admonish us that the zeal of zealots is always ready to start fresh flames. We have before us a \$100,000 example of zeal "to abate the wicked horrors of vivisection."

Where is the man or woman with equal zeal, on the scientific side, who will entrust to the League for the Conservation of Public Health a similar amount to continue its effective educational campaign against all the anti-health forces and the enemies of modern medicine?

FUNDAMENTALS OF NUTRITION

American scientific men have been credited with lagging behind the rate of progress shown in Europe in the domain of medicine. Surgery has come fully into its own in the western hemisphere, but American medicine is held too often to be engaged solely in practicing and teaching, and too little in investigating. Among many one of the finest refutations of this mistaken notion is found in the impetus given by American scientists to our understanding of dietetics and food values, and the use of diet in the prevention and cure of disease.

Laboratory studies on the basis of calorimetric measurements of energy requirements in the body have demonstrated that in the presence of fever more energy is required and that if this energy is not obtained from an increased diet, it will be secured at the expense of serious inroads on the body reserves. Such inroads result in definite symptoms and abnormal physiological processes which invariably tend to make the invading disease more dangerous. This is seen in typhoid since the advent of high calory feeding, when the delirium, meteorism and typhoid status are found to be largely symptoms of mal-nutrition and not primarily characteristic of the lesions of typhoid fever.

Our appreciation of dietary requirements for health has advanced so that the term, a balanced diet, means considerably more than simply the provision of a sufficient energy supply. A balanced diet today means, of course, that the body shall receive a sufficient supply of energy from the food, that there shall be a proper number of food calories per unit of body weight. It means a suitable distribution of this total requirement between carbohydrate, fat and protein. It means also a proper mineral supply of inorganic salts. Water, too, is a prime necessity for food digestion and absorption, and for cell function. Furthermore, since the epochal work of Emil Fischer, we have come to understand something of the mysteries of protein metabolism.

The protein molecule is exceedingly large and complex. In the process of digestion this molecule is broken down into relatively small units, the amino acids. All forms of protein in digestion yield these ultimate amino acids or building stones. Less than a score of amino acids are known, but all proteins are composed of various groupings of two or more of these unit substances.

Thus it is apparent that for repair of body tissue and for growth, there must be a correct selection of amino acids. No protein contains all of the amino acids, and many proteins lack certain amino acids which are absolutely essential for growth or for maintenance of tissue. Thus in practical dietetics it is necessary to do more than merely secure a certain total quantity of protein per day. That protein must be so selected in quantity and quality that it will supply the required amino acids in correct variety and quantity. This explains why proteins of cereal or vegetable origin cannot entirely and safely substitute for proteins of animal origin.

For some time it was supposed that nutrition consisted solely in the absorption and utilization by the body, either for energy or for tissue building, of food-stuffs which had been adequately prepared through the medium of digestion, in accordance with the principles just noted. These food-stuffs seemed to have been placed on a level of chemical and almost mechanical exactitude by the wonderful development of physiological chemistry, and by the classification of food according to amino acids, fats, carbohydrates, water and salts.

The rapidly advancing and changing conception of food deficiency diseases, however, has led to an extension of the classification to include certain even yet largely unknown substances called vitamins, which have a definite controlling influence on nutrition, health and growth. Imbalance, or lack, of some or all of these is believed to eventuate in physiological perversions which proceed to clinical disease. This conception parallels the idea of physiological perversions due to deficiency in the earlier recognized food elements, as observed in starvation, or in the results of the body's inability to burn carbohydrate in diabetes.

In general, food deficiency may be said to act in one of three ways to produce a departure from normal health and nutrition. It may result simply in malnutrition from insufficient supply of the particular elements lacking. This form of malnutrition is automatically more or less compensated for by increased utilization of other food elements. Such a compensatory use occurs least in the case of deficient protein. Proteins may be spared by increased utilization of fat and carbohydrate, and thus the minimal necessary intake of protein may be lowered, but no other food can actually replace the function of protein.

In the second place, a deficiency of some food element may cause a general disturbance of metabolism. This is illustrated by acidosis resulting from a diet excessive in fat and deficient in carbohydrate, as seen in certain types of infantile acidosis and in the diabetic acidosis. In the third place, a food deficiency may predispose to secondary factors which are directly responsible for disease. Thus a condition of under-nourishment from starvation predisposes to infection. Again, deficiency of a certain food element may result in a selective malnutrition of some organ or system of the body, as illustrated in the nerve degenerations of beriberi. It is evident that the problem of food deficiency is no simple one, but that it is complicated by selective results produced in the organism by secondary factors which may become operative in

the presence of the deficiency, and by obscure inter-relations and balances of nutritive equilibrium which may easily be disturbed by a variation in the component food elements.

Three types of vitamins are described. Fat soluble A has to do with growth and its absence is associated with xerophthalmia. Water soluble B is necessary to prevent polyneuritis and beriberi. Water soluble C seems the preventive for scurvy. Beyond this, there is a considerable group of diseases which are more or less closely related to vitamin deficiency, such as pellagra, rickets, various types of anemia and malnutrition, and edemas.

The practicing physician finds it advantageous to keep a familiar touch on the advance of research in the field of dietetics. If he neglects the reports in this line for even a short time, he finds himself hopelessly at a loss to interpret to his patients the practical lessons being learned about foods and a balanced dietary.

CHIROPRACTIC OPEN SEASON ENDS

Unlicensed chiropractors became so rampant in their illiterate intention "to bust California wide open" during the recent campaign that they seemed to believe that all the laws established for the protection of the health and lives of the people of this State had no application to chiropractors. This delusion is gradually being dismissed as the following facts demonstrate.

L. J. Snow, unlicensed chiropractor of Petaluma, was arrested November 20th for violating the laws governing those licensed to treat the sick. He was released on \$500 bail. Snow's name appears as a leader of the alleged Public School Protective League on its official letterhead. He is designated as "Dr." Snow by these peculiar people who have an hallucination that some unknown person has selected them to "protect" the public schools. The election returns demonstrate that "Little Bright Eyes" was merely fooling the P. S. and C. S. "Protective" Leaguers when she led them up a blind alley and convinced them that they were on the highway to success.

H. W. Hofeditz, unlicensed chiropractor of Visalia, was arrested November 12th and released on \$500.00 bail.

Sidney Cecil Holmes, unlicensed chiropractor, was arrested at Huntington Park, November 10th.

F. F. Fredericks, unlicensed chiropractor of Monrovia, was arrested November 24th.

William F. Todd, unlicensed chiropractor of Ventura, was arrested November 19th.

J. L. Stevens, unlicensed chiropractor of Oxnard, was arrested November 23rd.

J. Edgar Halstead, unlicensed chiropractor, was arrested November 30th at San Diego.

Byron E. Frank, unlicensed chiropractor of Chico, was held to answer charge of violating medical practice act on December 1st.

F. D. Irish, unlicensed chiropractor of San Diego, was arrested November 30th.

Marie H. Foster, unlicensed chiropractor of Chico, was arrested December 1st.

L. F. Pinter, unlicensed chiropractor of San Diego, was arrested November 30th.

Geo. C. Oakes, unlicensed chiropractor of Mer-

ced, was held in \$250.00 bail on November 22nd by Judge Frank H. Farrar.

Geo. H. Parchen, unlicensed chiropractor of San Diego, was arrested November 30th.

C. Z. Landreau, unlicensed chiropractor of Huntington Beach, was arrested December 1st.

Mabel E. Kellom, unlicensed chiropractor of Chico, was held to answer to the Superior Court on December 1st.

Frank A. Weldon, unlicensed chiropractor of San Diego, was arrested November 30th.

A. E. Echals, unlicensed chiropractor of San Diego, was arrested November 30th.

F. B. C. Eilers, who conducted the "San Diego School of Chiropractic" and was formerly known as Eilersficken, was arrested in San Bernardino. His preliminary examination is set for December 3rd.

D. S. Tracy, unlicensed chiropractor of Los Angeles, was found guilty on December 6th of attempting to treat the sick of Los Angeles in violation of state laws. He was sentenced to pay a fine of \$100.00 or serve a sentence in the City Jail at the rate of \$2.00 for each day. This unlicensed chiropractor also apparently valued his money more than his freedom and is now making \$2.00 per day and his board in the Los Angeles jail.

H. A. Brown, unlicensed chiropractor of Richmond, was found guilty of violating the Medical Practice Act, and was sentenced on November 17th to pay a fine of \$100.00.

Ernest R. Morse, unlicensed chiropractor of Los Angeles, pleaded guilty on December 6th to a charge of violating the Medical Practice Act, and was sentenced to 100 days in the city jail. Sentence was suspended pending good behavior.

A. H. Parrish, another unlicensed chiropractor of Los Angeles, was also convicted and had sentence suspended. He was found guilty on December 4th of attempting to treat the sick without obtaining a license from the state.

George Shaffer, also an unlicensed chiropractor of Los Angeles, pleaded guilty, and was sentenced to 100 days in jail. Sentence was suspended provided he will engage in some occupation for which he is qualified or qualify himself to engage in treating the sick.

W. E. McClelland, unlicensed chiropractor of Eureka, was found guilty of violating the Medical Practice Act on November 16th, although he was defended by ex-Governor Marris of Wisconsin, the national attorney of the Chiropractic Association. Sentence of \$500.00 fine or 100 days in jail was imposed on November 23rd. McClelland seemed to think that \$5.00 per day and board in jail, without any work, was preferable to paying out five hundred in a lump sum. He chose the jail and is now enjoying a well-merited rest.

CHINESE HERBALISTS VIE WITH CHIROPRACTORS IN BREAKING THE LAWS

"For ways that are dark

And for tricks that are vain"

the Chinese herbalist is having a hard time maintaining the lead since the unlicensed chiropractors have entered the field. Their ancient solitary reign is distinctly disturbed. Since the last issue of the

Journal the chiropractors have fattened their law-breaking batting average. The "Herbalists," however, are still contenders for lawless honors.

Tom Shee Bin, Chinese herbalist, arrested in San Francisco May 1, 1920, was finally held to answer on November 30, 1920, in the Superior Court after 19 continuances in the San Francisco Police Courts.

Su Woo, Chinese herbalist of Visalia, arrested November 12th, charged with violation of the Medical Practice Act and released on \$500.00 bail.

Quong Sing, Chinese herbalist of Los Angeles, pleaded guilty to a charge of violation of the Medical Practice Act and was sentenced to 90 days in the County Jail, suspended for 2 years.

William Quong, Chinese herbalist of Los Angeles, pleaded guilty to a charge of violation of the Medical Practice Act and on November 24th, 1920, was sentenced to 90 days in the County Jail, suspended for 2 years.

"Dr." Henry Ching of Los Angeles, recently convicted in the Federal Court on a drug charge and given a five-year sentence in the Federal Penitentiary, is believed to have "skipped" and his bail of \$10,000.00 has been declared forfeited.

Hick Wah Tong, Chinese herbalist of Chico, held to answer to the Superior Court on a charge of violation of the Medical Practice Act.

Lon Shinn, Chinese herbalist of Chico, arrested December 1, 1920, charged with violation of the Medical Practice Act; released on bail.

Taugi Nishino of Sacramento pleaded guilty on November 29th, 1920, of violation of the Medical Practice Act and was fined \$100.00 with a jail sentence of 60 days.

Quan Kee, Chinese herbalist of Chico, arrested December 1st, 1920, on a charge of violation of the Medical Practice Act; released on bail.

Wong Him of Oakland, charged with violation of the Medical Practice Act, was dismissed December 2nd on recommendation of Police Judge Samuels.

ABORTIONISTS ON THE RUN

Archie Hunt, alleged to have recently been discharged from San Quentin prison after serving a sentence imposed in Fresno county following conviction of abortion, was arrested in San Francisco November 21, 1920, on two charges of malpractice. Hunt is alleged to have worked with Dr. Geo. O'Donnell, arrested November 20th, 1920, for alleged traffic in narcotics. Hunt's license was revoked by the Board of Medical Examiners April 16th, 1915, based on the record of his conviction of abortion.

Mystery Castle at Salada Beach is closed and its mysterious naturopath, Galen R. Hickok, is sentenced to serve from two to five years in San Quentin for performing an illegal operation.

The public press has been filled with the escapades of "Dr." Hickok, and many were under the false impression that this convicted naturopath was a real doctor. If it were not for a vigilant State Board of Medical Examiners drugless Hickoks would be attempting all kinds of operations with impunity. That such alleged "doctors" are a constant menace to the public health is obvious.

Special Article

PROBLEMS OF ENFORCEMENT OF THE MEDICAL ACT.

By CHARLES B. PINKHAM, M. D., San Francisco.

Perusal of correspondence as well as conversation with various practicing physicians of California discloses a surprising paucity of knowledge (1) regarding the operation of the investigation and legal departments of the Board of Medical Examiners and (2) regarding the difficulties encountered in their endeavors to discourage violations of the Medical Practice Act.

The question is frequently asked: "Why the necessity of the enforcement machinery of the Board when each county provides a District Attorney whose principal function is to prosecute individuals who are charged with violation of the law?" Experience has taught the truth of the adage: "What is every one's business is no one's business," and we have also learned that satisfactory prosecution of a charge of violation of the Medical Act demands the services of an attorney well versed in the medical law; hence the Legal and Investigation Department is requisite for enforcement.

Practically every state board is confronted with the problem of enforcement, although but few are in the fortunate position enjoyed by the California Board, thanks to the annual tax, which in addition to providing funds for compilation and publication of the annual directory, affords a goodly sum which may be devoted to the encouragement of a wholesome respect for the law.

The Legal and Investigation Department of the Board has grown during the past few years, from a force of four individuals to one of practically ten individuals, who without one penny drawn from the revenue of the state, are devoting conscientious effort to discourage violation and encourage compliance with the law. The area of this great state of ours is an added obstacle to the problem of enforcement, in that our attorneys and special agents are kept busy jumping from one community to another separated by many miles.

When the present Board of Examiners was organized, efficiency of operation of the Enforcement Department required that the state be divided by an imaginary line extending from the Nevada border westward through the city of Fresno, and thence southwest through the city of San Luis Obispo.

The jurisdiction of the Northern Department extends northward from the imaginary line just mentioned, to the Oregon line, while the district south of said imaginary line is covered by the Southern Legal and Investigation Department, with headquarters at Los Angeles; however, in case of emergency, one or the other department may be delegated to extend its base of operation. Each departmental office maintains a carefully devised system of card records, reports, etc., which not only assure efficiency of operation, but also provides that an accurate check on the operations

of both departments is maintained in the office of the Secretary of the Board.

On receipt of information that a specific individual is alleged to be violating the Medical Act, evidence must be obtained to substantiate the allegation to the satisfaction of a court at law. In addition to equipment, etc., required for presentation as corroborative evidence, the court demands the testimony of one, two or more witnesses who, having been treated by the accused, will testify that the alleged violator has treated, diagnosed or otherwise violated Section 17 of the Medical Act.

Satisfactory evidence of alleged violation having been secured by the special agent of the Board, the facts are submitted to the local authorities, on whom dependence must be placed for the issuance of a warrant for arrest. Should the local authorities be "lukewarm," it sometimes happens that a warrant is refused based on a claim of "insufficient evidence," and thus the efforts of the special agents are nullified. Should the authorities issue a warrant for the arrest of a specific violator, the special agent for the Board must rely for service of said warrant, upon a police officer, deputy sheriff or constable, depending upon whether the warrant has been issued in a municipality of the first, second or third class.

The special agent of the Board, under existing conditions, is compelled to await the pleasure of the local authorities. In a city not far distant from San Francisco, the special agent in one instance was compelled to devote practically forty-eight hours, marked by frequent trips to "Headquarters," before the local Police Department deigned to furnish an arresting officer. This inhibitory influence to the efficiency of our efforts has arisen through failure of the legislature to provide that special agents of the Board of Medical Examiners be peace officers.

It is urgently desirable that this inhibitory influence be removed by an amendment to Section 817 of the Penal Code, specifying therein that special agents of the Board of Medical Examiners be peace officers just the same as now are the inspectors for the State Board of Pharmacy.

Following the arrest of an individual charged with violation of the Medical Act, a representative of the Board must be present in court when the accused "pleads." If the accused acknowledges violation by entering a plea of guilty, the duties of the Board's representatives cease as far as this particular violation is concerned. Should a plea of *not guilty* be entered by the accused, the next step is the arraignment as well as the setting of the date for trial, which again requires the attendance of the Board's representative. Despite the determination of a date for trial, the case is invariably "put over," with perchance a dozen different dates sequentially set, and in some instances, several months elapse before the case is finally heard in the Justice or Police Court. Pause to estimate the lost motion to the Board's enforcement machine caused by each delay. Thoughtfully consider the added expense to the Board, for our attorney, special agent and witnesses must

be ready for trial on each date set unless they be armed with prior knowledge that the case will *again* be put over.

This system of repeated delays is a ruse frequently used by opposing attorneys, who realize that the longer the trial be delayed, the greater are the possibilities through disappearance of witnesses, that the case will be "killed" as far as a successful prosecution by the Board's attorneys is concerned.

This same scheme of oft-repeated delays by postponement of the date of trial is followed in the instance of a flagrant violation which has strongly aroused public sentiment. The attorneys for the accused, familiar with psychology of the masses, realize that the hand of time rapidly effaces the facts in connection with the crime; hence the chance of conviction fades progressively more and more rapidly as time goes on.

But there is an end to all things, and the case finally comes up for trial before a Justice of the Peace in the smaller communities, or before a Police Judge in cities other than Los Angeles and Oakland. As the result of this proceeding, known as a Preliminary Hearing, the accused is either dismissed or held for trial in the Superior Court at a date subject to the same delays and postponements as already noted.

After conviction by a jury in the police courts of Oakland or Los Angeles, appeal from the judgment of conviction may be taken to the Superior Court, and if reversed, the subsequent trial is held in the Superior Court.

In a municipality where a jury is selected for each police court trial, the success or failure of a prosecution is practically in the hands of the municipal officer, who drafts the venire of jurymen.

The medical profession may be interested to know that it is not an uncommon practice for certain municipal law enforcement officers to maintain a complete card index of prospective jurors, wherein is entered a specific history of each individual, particularly: (a) Information regarding his habits and his associates; (b) How he may be "influenced"; (c) Whether he has established a reputation in former trials as an "acquittor" or as a "convictor." A recent scandal in the Superior Courts of San Francisco afforded the Public a clear insight into ways that are "dark, devious and mysterious" in the act of properly (?) selecting a jury presumed to minister justice without fear or influence.

The Northern Department at the present time has forty-one cases pending in the various counties of their jurisdiction. A strenuous endeavor is ever operative so the hearings of these various cases may be expeditiously arranged with the least possible loss of time to our Department, and at a minimum of expense, which under most favorable circumstances, is quite heavy.

The calendar of the superior court of jurisdiction finally affords an opportunity for commencement of trial, and *again* our attorney, special agent and witnesses must be in constant attendance. One, two or three days are required for completion of the trial, and the Board finds

added to the expense of transportation, per diem, etc., an additional amount for hotel and incidental expenses which progressively increase as the trial is prolonged.

The per diem and mileage of jurymen as well as the other costs of trial must be assumed by the county wherein the trial is held. In a sparsely populated county, the cost of impaneling a jury for the trial of a case, is much heavier than in the large centers of population.

Should the Superior Court jury bring in a verdict of guilty and the trial judge impose a fine, 25 per cent. of said fine is retained by the county and 75 per cent. is paid to the State Treasurer to be credited to the Board of Medical Examiners' Contingent Fund. Statistics show that neither the expenses incurred by the Board nor by the county wherein the trial is conducted, are balanced by the imposition of a fine.

The income from fines is small as compared with the cost of enforcement. During the period of January 1, 1920, to November 22, 1920, the receipts of the Board from fines amounted to \$7,087.50, while the expense of enforcement amounted to \$17,003.15.

The State Treasury is not burdened with the expenses of the Board, which is supported entirely from fees earned; hence the taxpayer of California is not called upon for funds to finance the Board of Medical Examiners.

It is self-evident that a violator on whom a fine has been imposed, with an alternative jail sentence, labors under a misapprehension when he presents the argument that his election to serve the jail sentence rather than pay the fine, will in any manner inhibit the prosecution of those accused of violation of the law, inasmuch as the Board will continue the enforcement of the law regardless of incomes from fines. The present Board has always endeavored to convince a trial judge that the object of prosecution was to compel respect for the law rather than to augment the funds of the Board by "fines" imposed following conviction of a charge of violation of the Medical Act.

A violator is frequently placed on probation following conviction, with the understanding that he is in no way to engage in practice, nor to advertise or in any other manner violate the terms of his probation. Occasionally such an individual will thereafter claim his practice has been sold to another violator, although: (a) the same type of advertising appears in the daily papers mentioning the name of the probationer over the name of the alleged purchaser, in a manner calculated to convey the impression that the probationer was still conducting the business; (b) the probationer is daily to be found in his former office, personally accepting fees for treatments given by the alleged purchaser.

Some time ago, a chiropractor in Los Angeles, whose classically malevolent advertisements attacked the Board and breathed fiery defiance to law, was found guilty of violation of the Medical Practice Act, sentenced to pay a fine of \$500.00 with a 180-day jail sentence suspended pending cessation of practice, and still this violator's name appears in advertisements published by at least

one of the Los Angeles daily papers. Wherein lies the fault? With the courts, for permitting this defiance to the court to go unchallenged or with the paper that publishes the advertisement of a convicted violator. Certainly the Board of Medical Examiners have done their work well in convicting said individual of violating the state law.

A convicted violator who appeals from the judgment of conviction has the same legal status as one who has *not* been found guilty.

It will not be amiss in this article to explain the status of a licentiate whose license has been revoked. Neither professional men nor laymen can comprehend how any legal action against the Board for a review or similar action, grants to said licentiate the right to go serenely on with his practice as though no action had been taken against him.

The individual, whose license has been revoked, has recourse in the Superior Court to a Writ of Review or Certiorari, usually accompanied by a Restraining Order served on the Board, which suspends the Board's order of revocation or any other activities in relation to the particular case. During the pendency of a writ, the "hands" of the Board are tied, the petitioner can practice "right merrily," and the Board can take no action:

- (a) to stop said licentiate based on the revocation;
- (b) to serve the County Clerk with a notice of revocation;
- (c) to leave the petitioner's name out of the Directory;
- (d) to refuse acceptance of the annual tax;
- (e) to take any steps which in any way would reflect on the petitioner's standing as a legalized practitioner in the State of California.

After the Superior Court has reviewed the findings of the Board, an appeal is made to the Supreme Court, which refers the case back to the Appellate Court for an opinion. If the opinion be unfavorable to the appellant, a rehearing is requested. If said rehearing is denied, an appeal is filed with the Supreme Court.

If the Supreme Court sustains the action of the Board, the case is closed. However, should the action of the Board be reversed, the losing party may again ask for a rehearing, this time in the Supreme Court.

It does not require any very keen perception, after reviewing these various steps, to determine why these cases drag through a period of from two to three years before a final decision has been reached.

The vote of the people on medical and public health matters, as recorded on November 2, 1920, is an encouraging indication that the public still has faith in scientific medicine, and is a further indication that the medical profession has awakened from its lethargy to the full realization of the tremendous latent power that can be aroused by organization, exercising well directed effort. Legislators as well as municipal officers have often stated that the medical profession has

not as yet awakened to the realization of its latent power, but when once aroused to concerted action, its power of accomplishment is limitless.

Let us summarize the avenues open to accomplishments by *concerted action*:

- (1) Exercise of legislative contact in your home district.
- (2) Exercise of personal contact with the editorial staff of the newspapers published in your community to:
 - (a) discourage acceptance of advertisements of individuals who are violating the law;
 - (b) to change the policy adopted by many papers that paid advertising insures editorial support regardless of the merit or truth of statements in said advertisements;
 - (c) to grant the courtesy of reply in their columns to any article printed therein, which willfully misrepresents, or has a tendency to imply the existence of conditions in relation to scientific education, public health or law enforcement unfounded on fact.
- (3) Personal contact with the law enforcement machinery of your community that it may be impressed with the justice of your plead for:
 - (a) More expeditious disposition of cases involving violation of the Medical Practice Act.
 - (b) Closer scrutiny in the selection of prospective jurors.
- (4) Personal contact with the public, both individually and collectively, disseminating the truths regarding public health measures, prophylaxis, preventive medicine, medical education and regulation.

The foes are legion that seek to destroy the safeguards to public health, erected by scientific medicine after years of heroic struggle. The attack is not only local, but has assumed a nation-wide well-financed campaign.

What will the harvest be?

The answer lies with *YOU*.

Original Articles

THE PRESENT NURSING SITUATION.*

By W. W. ROBLEE, M. D., Riverside.

During the past half century the practice of medicine under the stimulus of such epochal development as has come through the great discoveries of bacteriology, pathology, chemistry, pharmacology, physics and the other branches of true science, has undergone a complete metamorphosis. No longer can the untrained herb doctor or bone setter visit a sick person, feel his pulse, look at his tongue, and after dispensing some empirical mixture of herbs or mineral compound or "set" a supposedly dislocated or broken bone, depart with a consciousness of having done any real service to his patient.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

Neither can the modern physician who has been trained in the laboratory and clinic, with all the aids of the science and art of modern practice do well by his patients without lay assistance. The greatest of these aids is the thoroughly trained nurse. Anything which in any way influences the nursing profession for good or ill reacts directly upon the physician, and should be his concern.

We have not only grown to depend upon the trained nurse for the care of patients in hospital, but we have been educating the public to ask for nursing service in the home, and to use these women for much of the detail work in the great public health and social betterment movements in practically every community. This furnishes an outlet for the energy and enthusiasm of the best type of young womanhood along lines of personal and social service for which women are pre-eminently fitted.

We older men who have been privileged to watch the development of this noble group of women, have been tremendously impressed with their value and usefulness and have counted it a privilege to have had some part in it.

Like many other great social movements, problems of policy arise about which there are honest differences of opinion as between the parties concerned. Just at this time some problems are pressing for solution, and it will be profitable for us to consider them most carefully. There are three parties involved:

First. The Public whom we serve.

Second. The Nurse who renders the service.

Third. The Physician, who by training and legal responsibility, is employed to and held responsible for the care of the sick.

Any action taken or laws put upon the statute books which do not take all three parties into consideration are essentially unjust, and therefore to be condemned. The aim of this paper is to call attention to some fundamental facts, abuses and dangers in the present situation in order that if possible the three interested parties may get together and work for a constructive program which shall be just to all.

The public (1) not only needs, but has been taught to value expert nursing service.

(2) The wealthy and very poor classes are now able to secure such service. The one, completely because of financial ability to pay the other to quite an extent through municipal and relief organizations and public hospitals.

(3) The great middle class of wage earners (except for certain skilled classes) salaried employees, certain professional men and women and others of moderate income find it impossible to pay for nursing service at the present rate of compensation expected by the graduate nurse.

Sickness in such families means either real or fancied failure to secure adequate care, a burden of expense which spells a ruinous debt or the sacrifice of the necessities of life on the part of others in the family.

For instance a recent case of pneumonia and empyema which, under the twelve-hour rule, required two nurses, entailed an expense amounting

to over six hundred dollars for nurse hire, in addition to which was the cost of feeding them.

Nurse hire, like the cost of other necessities, is rising higher and higher, and Mr. Average Citizen cannot buy all he needs or desires.

The Nurse.

1. Has seen the requirements for her training raised from year to year and the time of training lengthened, until now as much is required of her in time and effort as is necessary to practice medicine by way of the osteopathic route or to become a teacher or social worker, and far more than is asked of commercial employees.

2. Has also seen the cost of living mount to proportions that require an augmented income to support herself.

3. She has seen the legal hours of labor lowered by law for her sister workers in other occupations, while hers have continued to be long and arduous.

4. No one can gainsay these facts or object to her compensation adequate for time consumed in preparation for her profession and to meet the high cost of living, nor can we wonder at her desire for easier hours and better working conditions.

5. She has in times past been shamefully exploited by certain hospitals and training schools, both as to length of service, daily hours and character of labor performed.

The Physician. Is interested

1. In preserving in the highest state of efficiency and usefulness this most helpful of all his therapeutic aids. The two must work hand in hand. Any antagonism or lack of full co-operation as between the two professions must be avoided.

The influenza epidemic, as was to be expected, found the supply of nurses and trained attendants woefully inadequate. No plan could supply enough trained nurses for such an emergency, and it would not be desirable that such a supply should be trained, but certainly auxiliary sources of supply should be, and can be, developed.

The Superintendent of the State Nurses' Bureau tells me that 85% of women trained in that profession leave bedside nursing, either private or hospital, within three years. Many are married, others become dietitians, teachers, public health and social workers, doctors' office assistants, hospital administrators, etc. This wastage, the increase in population, and more general appreciation of nurses' service, renders it absolutely necessary that a constant influx of pupil nurses shall be maintained.

Last year in this state about 100 fewer young women applied for training than was the case during the two preceding years. Superintendents of training schools report increasing difficulty in securing pupils for their schools. This is due (1) to the high wages paid in many of the unskilled industries. (2) To the general prosperity of the country, because of which it is unnecessary for so many women to be self-supporting. (3) To the length of time, three years demanded

for training, and the higher educational requirements now in force.

The problem briefly stated is this:

The public having been taught the value of the nurse finds itself very frequently deprived of such service by reason of prohibitive expense. In time of epidemic there are not sufficient nurses to begin to meet the problem. The nurses are striving to better their professional standing, they are asking for sufficient remuneration to cover their long years of training, their wastage of time while waiting for cases, and the increased personal expense due to the mounting cost of living, and for reasonable working hours.

The doctor is the buffer between these two; he must keep both patient and nurse satisfied. What is the answer?

1. How secure an adequate supply of pupil nurses.

In my opinion the training course should be reduced from three years to two for bedside nurses. This has been done in several states, notably Illinois. Any girl can be taught adequate bedside nursing in two years *if the time is given to nursing*. Pupil nurses should be largely relieved of such menial labor as scrubbing floors, toilets, care of bed pans, etc., which can be handled by unskilled laborers hired for that purpose. The so-called eight-hour law which is in reality less than a seven-hour law, should be made a straight eight-hour law. It now requires three and one-half student nurses per twenty-four hours to special a case. There should be a sufficient number of student nurses in the hospital so that they can do more of the special duty work, thus relieving the graduate nurse for private work.

The preliminary educational requirement should be based upon a grammar school, and not a high school diploma, thus allowing many earnest young women who have not been able to support themselves through a high school course to enter training.

Those who expect to qualify for institutional or public health service should be required to take an additional year of advanced training.

The nurses' curriculum should be modified, and the teaching staff in each training school visited by an official of the state board who shall carefully explain the scope of the course and the type of teaching desired.

The present curriculum is too elaborate. There is no profit in making a nurse a poorly instructed doctor. For instance, take the subject of chemistry. It is absolutely without profit to teach a nurse anything beyond simple urinalysis and a few chemical principles useful in dietetics. The care of the patient should be stressed, first aid carefully taught, and a birdseye view of the body and its functions outlined. Beyond this is without profit, and the student had much better be employed specializing an actual sick person or playing tennis for her health's sake.

Some states, including California, are trying out a plan of educating a group of young women as trained attendants. The course lasts one year, and a license to care for the sick is given upon com-

pletion of the course. So far only one hospital in this state has taken advantage of this law.

In principle, I am opposed to the establishment of classes in the nursing profession. We will always have the old "practical nurse"—she is known as such, and fills a certain useful position—but if the state licenses a woman to care for the sick, it will be very difficult for the public to differentiate as between classes. I think that it is far better to adopt a sensible minimum course, and license but one class. Our educational institutions, newspapers and platforms should be used to impress upon young women the opportunities for service offered by the nurses' profession. There might be a nurses' week possibly, in connection with some other problem, such as the tuberculosis fight when the claims of the profession could be impressed upon the public. Many young people drift until something tangible is brought to their attention.

Nurse wastage can be materially reduced. Many of the nurses now employed in doctors' offices where they are giving but a fraction of their time to their professional work, should be released for bedside service. A doctor who really has the best interest of his patients at heart will reduce his office nurse force to the lowest possible minimum. Auxiliary positions, such as dietitians, supervisors of unskilled labor, etc., should not be filled by graduate nurses. Sociological workers should not be recruited from the nursing profession. Much can be done by careful consideration of the element of wastage in the profession.

Great care should be exercised in the framing of legislation limiting the hours of nursing duty. The present forty-eight hour law for pupil nurses is in need of revision upward to a fifty-six hour basis. The agitation either for a twelve-hour law for graduate nurses, or a limitation by a trades union agreement is wrong. Each case is to be considered on its merits. Many require but nominal care, and a nurse has plenty of time for rest in a twenty-four hour tour. A twelve-hour shift in the average home obstetrical case would place the service beyond the reach of most of our citizens. The care of mother and baby does not overtax a nurse.

Patients requiring constant care, and those entailing great physical or nerve strain, cannot and should not, in justice to either nurse or patient be handled on a twenty-four hour shift. This should rightly be a matter of adjustment as between the parties concerned, and the physicians should see to it that the nurse secures sufficient rest.

Trades' Union methods, such as have been adopted by a certain group of nurses in Los Angeles recently, whereby a twelve-hour shift for all patients under their care was ushered in by a strike, by picketing, threats of violence, etc., can have no place in any scheme for handling this problem, and where found should be condemned and fought to a finish.

How can Mr. Average Citizen's problem be solved? Should the nurse be asked to lower her

fees and bear the portion that Mr. Citizen is unable to bear?

No. The nurse is getting none too much for her work if she is to live decently and save something.

Two plans suggest themselves to me:

1. Some plan should be evolved whereby hourly nursing service can be made available. Most patients need less attention than we have taught our nurses to give. There is too much temperature taking, bathing, rubbing, charting and general fussing about a patient. How often do we hear a patient say "oh, just let me alone."

If a nurse could come in once a day, give a bath, change the bed, give an enema, or make the personal toilet, the need would be well met. The balance of necessary attention could be given by the unskilled people in the home.

The Victorian Order of Canada solves that problem splendidly, and is a tremendous success. If the Red Cross or a new organization could be made to stand sponsor for such a plan it would meet a real need. I am not now speaking for the very poor, they are already furnished a great deal of such service in many communities. I am advocating an organization in each community which shall have the backing of a strong committee. This organization would hire the nurses needed, pay them a good salary, these to be available for service to the average self-respecting citizens of moderate income. It would be a big step toward solving the problem.

2. There should be a systematic effort made to instruct at least one person in every home as to the simpler essentials of the care of the sick.

What a comfort it is to go into a home and have some woman hand you a little piece of paper with some temperature records thereon and to see the patient's person, bed and sick-room neat and tidy.

This society should back the Red Cross or other organizations in their home-nursing programs, and if necessary the county society and local nurses should give short courses in a few essentials. The slogan should be "at least one person in every home who can take a temperature, give a bath or enema, make a bed and prepare a simple invalid's meal."

The most important point I want to urge is that there must be harmony and co-operation between all the elements to this problem. No law should be placed upon the statute books, no rule adopted which materially changes the status of any party to the problem until all have an opportunity to be heard.

A PLEA FOR BETTER FRACTURE RESULTS.*

By GEO. J. McCHESNEY, M. D., San Francisco.

In no branch of surgery have we learned more from our war experience than in the treatment of fractures, and now is the time to apply that dearly-bought knowledge before it becomes a dim memory.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

The war fractures—practically all open and a large percentage comminuted—were hence of the most difficult type, and quite the reverse of the civil variety. So, speaking from experience, after handling the war type of fracture, the civil seems almost ridiculously easy when the same principles are applied, and the treatment of fresh fractures thus becomes a real pleasure and not a flurried attempt to obtain some sort of union, dismiss the patient, and avoid a lawsuit.

What in brief are the principles emphasized by the war treatment of fresh fractures:

(1) That the traction method of treating fractures, now nearly perfected, should be used much oftener.

(2) That meticulous or geometric accuracy of approximation is not necessary for good function.

(3) That metallic fixation or internal splinting is never absolutely necessary.

(4) That as a consequence, operations are needed much less than is the practice at present.

In discussing these points in detail, the first and greatest lesson concerning the renaissance of the traction method, is the recognition of the importance and value of the Thomas traction splint and its various modifications and accessories. Being simple in design and operation, it is both easy to make and to apply. By taking its counter-pressure against the tuberosity of the ischium or against the shoulder, it does not fasten the patient to one spot in the bed, as does the weight and pulley form of traction. On the contrary, the patient can be quite comfortably transported from bed to wheelchair or from place to place if needed. The use of the bedpan is made easier, and the patient can be put into the sitting position to avoid pneumonia.

Second. By allowing the injured limb to be always open to inspection and massage, it does away with the principal drawback of plaster of Paris, which may easily hide a beginning sepsis as well as an angulation at site of fracture.

Third. By changing the tension in the supporting slings thus raising or lowering the fragments, antero posterior defects in alignment can be corrected, and by the use of screw-pressure pads, clamped to the side bars, lateral deviations can be corrected. Thus we have a direct pull to overcome the shortening tendency from muscle-spasm, and also means of making correction thrusts at right angles, in any direction, on either fragment, surely an ideal arrangement.

Fourth. Dressings can be done much more easily, especially if large ones, and the spread of infection watched and guarded against better than with plaster splints.

Another great advance is in the early mobilization of neighboring joints, especially the knee and elbow joints. Not only can they be inspected and massaged daily but flexion bars can be attached to the sides of the Thomas splint and slight motions at the joint made daily, while the fracture is still efficiently splinted. This does away completely with the stiff knees especially, that have retarded for six months or a year the complete convalescence of fractured femurs. The same

thing can be done in the elbow if the fracture in the humerus is above the lower third. In addition, the use of the Thomas splint here necessitates an abducted position of the shoulder joint, which is now recognized to be the one of choice wherever possible.

Below the knee joint the use of the Sinclair foot piece admirably controls the position of the lower fragment while providing for traction which is sufficient for almost any fresh fracture in the tibia and fibula, especially if the celluloid and acetone glue is used.

Col. Blake at Paris suspended all his fractures in Thomas or Hodgen splints. In many instances this is desirable, but it adds much to the complexity of the treatment, and often can be dispensed with.

The second fact of importance—that good ultimate function does not depend upon extreme accuracy of approximation—is one we are too prone to overlook in these days of X-rays, lawsuits, etc. We long have known, and should teach the laity, that when the X-ray shows a lateral displacement of a third or even a half of the thickness of the bone, that a good result will be obtained if the general alignment is good. We are altogether too prone to use the radiogram as a clincher to an argument for the necessity of open operation, either plating or wiring or what not, in an endeavor to correct these unimportant lateral maladjustments. War surgery has shown overwhelmingly that good results are uniformly attained in this class of case by a let-alone policy as far as operating is concerned.

In my work as orthopedist on the Diagnostic Section of the St. Luke's Hospital Clinical Club, I incidentally see a certain number of old fractures, and the absence of symptoms in fractures often almost approaching malunion shows strikingly Nature's power of adjustment to meet these conditions.

It is time we were more fair to our patients in this regard, and we will then find our statistics will improve.

In line with this argument is the third point—regarding the advisability of metallic fixation by plates, wires, bands, nails, etc.

In a thirteen months' experience in a British hospital over six hundred fractures passed through my hands. In only one had metal been used, where the Lane plate had caused a delayed union in a femur. I can assure you no others were put in by us.

To use the Lane plates is a great temptation. We operate, get our fragments in perfect, or nearly perfect line, apply our plate, getting immediately a gratifying stability where there had been a distressing excess of motion, close our wound, apply some sort of splint, perhaps radiograph our operation area and find a most perfect position; the patient's mind is relieved and everyone is happy. But our troubles have only just begun. We all know the dreary sequence. After some days, weeks or months we may notice a low-grade inflammation or even slight discharge from the incision, persisting till the plate is re-

moved, and then a delayed union follows. Or there occurs some rarefaction around screws, loosening of same, slip in alignment and delayed union. Or the plate may really be of service; the union may not be much delayed, but the callus remains tender and the plate has to come out. Sometimes it stays in for years, but we all know that the great majority come out sooner or later, and this is not good fracture surgery.

But the matter of a secondary operation to remove the plate is not as important, to my mind, as is the delay in union which the plate often causes. This is the greater evil by far, and here our war experience should enable us to make a great advance.

I contend that with the improved methods of traction perfected by our war experience, the use of metallic fixation is no longer necessary with one exception only; i. e., in fractures of both bones of the forearm. Here sincere effort by traction may fail, as we cannot make the lateral corrective thrusts needed, and rather accurate alignment is important. Consequently, open reduction and plating may be necessary with full realization of probable delayed union and secondary operation for plate removal.

But in no other fracture can I conceive metal to be indicated. Femurs tolerate it the best; tibiae the worst, but in no place except as above should we find its use really necessary.

The same applies to the use of grafts in fresh fractures, for we are considering fresh fractures only. Although mechanically efficient, and without the objection of being a foreign body, still the use of a graft means a long incision, much cutting of soft parts, especially periosteum, and a weakening elsewhere of the bone affected or of some other bone. The last objection is overcome by the use of prepared ivory or beef bone splints. But useful as these devices are in ununited fractures, in the fresh ones they should have a very small place.

The objection can be advanced that lawyers and juries view X-ray plates and base their opinions and verdicts on just such accurate appositions or lack of them. But since when is our profession to take its ideas concerning fractures from the laity, even though it be composed of eminent lawyers? It is we who should decide these questions for them, as we can do immediately, once the profession agrees on the subject.

By the very multiplicity of metallic devices and variations of bone plates we are made aware that they are not giving the desired satisfaction. Better far, a return to the older and simpler traction methods, revised, perfected and brought up to date by the vast experience of the late war.

It seems to me that the application of the Golden Rule puts the whole thing in a nutshell. Would you be content, for yourself or for members of your family, with a fairly accurate apposition in good alignment and little or no shortening, such as can always be obtained by properly applied Thomas splinting with lateral pressure pads, for the first three or four weeks, followed perhaps by plaster of Paris; or would you prefer

an absolutely accurate reposition such as an operation only will give, with Lane plating or other metal devices to hold it, followed almost certainly by a secondary operation for its removal and a fair chance of a delay in union? The latter is due principally to the stripping of the periosteum off the ends of the fragments just where it is most needed, and happens whether the fragments are plated, wired, banded, held with inlay graft, or merely placed in position through an incision. So what would you have done for your own family or yourself, and what should you do for your patient?

I argue for more simplicity of method in treatment of fractures, and, in spite of the apparently bewildering complexity of devices for traction, in and out of Thomas splints, Balkan frames, pulleys, weights, etc., still it is far simpler in its effect on the tissues than the most skillfully devised and executed operation.

In conclusion, I can do no better than quote to you from the address made by Sir Robert Jones at the last Convocation of the American College of Surgeons, on the subject of lessons learned in the great war:

"The lessons that we civilian surgeons should learn from all this are clear. If such results are obtained by simple means in such compound fractures as have occurred in war, why should we have recourse to more complicated methods? Why should the student be taught that fractures of the femur can only be adequately dealt with by plates and screws or other internal splinting? Why should we spend so much ingenuity and time in devising operative novelties, when it is so much easier and more useful to learn the simple way? In the hands of the expert and cleanly surgeon catastrophes may generally be avoided, but what of the rest? In every village and hamlet the humblest of us may be called to treat a broken thigh, and the humblest of us should know before he leaves his studies how this can be done with safety and success."

Discussion opened by Dr. Jas. T. Watkins, San Francisco. Discussed by Drs. Carl Hoag, San Francisco, S. H. Buteau, Oakland, G. M. Barrett, San Francisco, G. H. Galbraith, Long Beach, M. C. Harding, San Diego, T. A. Stoddard, San Francisco, C. P. Thomas, Los Angeles, O. O. Witherbee, Los Angeles, and A. W. Morton, San Francisco.

PRACTICAL POINTS IN USING THOMAS SPLINTS.*

By STERLING BUNNELL, M. D., San Francisco.

The Thomas splint well merits the permanent popularity which it has gained. By its use most fracture of long bones can be better treated than by the open operation method and the dangers from the latter can be avoided. The old rule of immobilizing the joint above and the joint below the fracture resulted in loss of function of these joints and a long period of disability in regaining this loss of function. With the Thomas splint the joint above and the joint

below are kept mobilized, so that function of them is not lost. Its economy, traction principle, ease of application and adaptability to open fractures make it far more serviceable than the plaster of Paris cast. For transportation it is unexcelled, and all first-aid stations should keep Thomas splints on hand. The successful use of the Thomas splint necessitates attention to many details, some of which are enumerated in this paper.

Frequent inspections should be made, with especial attention to angulation, rotation and lateral deviation of the fractured ends of the bone; also to the position of the foot to avoid equinus and pronation, to the possibility of any pressure points, to any possible pressure on the external popliteal nerve, which would result in footdrop and to other points as enumerated below.

Frequent inspections by X-ray are necessary and should be done at least weekly, after the correct position has been attained. The use of wire mesh is superior to that of muslin slings, as the latter cause uneven pressure along the under surface of the limb, which is very marked when the limb is edematous; pads should cover the mesh. The ring of the Thomas should be too large rather than too small. When the thigh is flexed, in order to avoid a pressure sore over the anterior superior spine, a cord can be made to run from the top of the ring to the Balkan frame over the foot of the bed, so that the patient can pull himself away from the pressure of the top of the ring. Pressure on the malleoli by the traction straps can be avoided by using a spreader, or by looping each traction strap around the rod of the splint.

Position of the foot is too often overlooked and equinus and pronation are allowed to exist. A pad wedged against the inner malleolus and another wedged against the foot below the outer malleolus will correct pronation. The equinus may be corrected by the use of the wicket, or an adhesive strap on the sole of the foot, prolonged up by a cord over a pulley and slung by a one or two pound weight. The angle of this strap on the sole of the foot controls rotation. The use of the Sinclair foot piece gives a perfect control of the foot in every direction; one can easily be improvised. In applying it, it is very important, however, to rely for traction on the straps of the posterior half of the foot only. These straps can often run above the malleoli and they pull in the correct line of the leg.

To apply traction to the skin some glue is necessary and is superior to adhesive plaster or moleskin. The latter of the following is probably the best.

| | | |
|--|------------------|----|
| <i>Sinclair's glue:</i> | Glue | 50 |
| | Water | 50 |
| | Glycerine | 2 |
| | Thymol | 1 |
| | Calcium chloride | 1 |
| (Use hot. Remove with hot wet towels.) | | |
| <i>Heussner's glue:</i> | Resin | 50 |
| | Alcohol | 50 |
| | Turpentine | 1 |
| | Benzine | 1 |

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

(Clean skin first. This glue often causes blisters.)

| | |
|-------------|-----|
| Celluloid | 15 |
| (old combs) | |
| Acetone | 100 |

Superior to the Spanish windlass for traction is some turnbuckle device. One can easily be improvised by using a hook with a threaded shank, a butterfly nut and a piece of metal for attachment to the Thomas frame. If one wishes to register the pull a spring can be placed under the butterfly nut and a scale scratched alongside to register the pull in pounds. A spring scale with a web strap and buckle for adjusting the traction fulfill all requirements.

If for a fractured femur prolonged and strong traction is made on the lower leg the ligaments of the knee will be stretched and the knee will be permanently damaged. I have seen this to the degree that the knee rotates inwards 90 degrees. A method to avoid this is the following: Apply the traction for one day. If the X-ray shows that correct position has been attained reduce the weight one-third. Three days later take another X-ray and if good position still exists reduce the weight another third, and later reduce it still further. For femurs the use of skeletal traction by tongs is, no doubt, the best. Skin traction requires from thirty to thirty-five pounds, but skeletal traction requires just half this weight. In applying the tongs avoid puncturing the bursa of the knee. Position for the points is over the summit of each tuberosity one and one half inches from the patella; a finger's breadth in front of the biceps tendon and a finger's breadth above the adductor tubercle. Under slight anaesthesia the skin should be drawn slightly upwards and an incision made in it a centimeter long. Tongs can be made with an adjustable screw stop between the handles, which will prevent the points of the tongs working too deeply into the bone.

To prevent lateral displacement of fractured ends it is not practical to draw the limb over to the opposite bar of the Thomas splint by means of a circular bandage, as too much constriction results. Pads can be inserted between the bars and the limb that will correct lateral deviation. A better method is to press the limb by large padded discs that receive the end thrust of threaded rods, which screw through clamps attached to the Thomas side rods. The discs should be of wood, so that the X-rays will not be obstructed.

In treating fractures of the lower leg it is important to flex the knee well in order to relax the gastrocnemius. In fractured femurs there is a tendency to backward sagging. To avoid this the bend of the Thomas splint can be made about four inches above the knee. This will maintain a forward bowing of the femur. It is important to maintain the proper rotation; this can be controlled by the footpiece. The great principle in correcting the angulation and approximation of fractures of long bones is to place the distal fragment in line with the direction which the proximal fragment naturally takes. In high fractures of humerus or femur this necessitates strong abduction and external rotation, and

in the case of the femur also flexion, especially when the lesser trochanter is part of the upper fragment. In mid fractures of the femur abduction is necessary when the fracture is above the insertion of the adductor longus, but if below this, the leg may be kept almost straight down. To maintain strong abduction of one leg on the pelvis, it may be necessary to place the other leg in the abducted position in another Thomas splint. In fractures of the femur just above the knee, the lower fragment will be pulled strongly backward by the gastrocnemius. This cannot be corrected by merely bending the Thomas splint at the knee. The use of the tongs is imperative and they should grasp the condyles of the femur in a position as far forwards as possible to cock the lower fragment forwards.

In fractured femurs when the tongs are used the lower leg should be allowed to hang in a special sling below the level of the Thomas splint. The cord from this sling passes over a pulley attached to the Balkan frame above and then cephalad through another pulley on the Balkan frame above the patient's chest and from here hangs down terminating in a handle, so the patient can swing his own leg at the knee by pulling this handle, which is within his reach. This maintains the function in the knee joint. An improvement on a simple sling for this purpose is to have a false distal half of the Thomas splint hinged to the Thomas splint at the knee. The lower leg is supported by this drop attachment, and is under better control than by the simple sling.

Another way of applying the traction with a Thomas splint is by a weight and a pulley. The lower end of the Thomas splint is, in this case, fixed to a stationary post and the pulley is attached either to the Thomas splint or the post. Another method is to suspend by a rope the lower end of the Thomas splint and to insert the pulley in the lower end of this rope, so that the rope will attach to the Thomas splint through the pulley. Counter traction, as before, is made by the ring against the ischium. It is well to swing the top of the ring from a wire frame, which passes over the bed, or from the Balkan frame above, so as to keep the lower part of the ring lifted snugly up against the ischium. For ease in lifting the patient a canvas sling can be placed under his lower back; from each side of this sling a cord runs up to the Balkan frame, over a pulley and down ending in a handle within the grasp of the patient. The patient can then easily pull himself up off the bed.

After a fracture of the femur, when the patient is allowed to walk, one should guard against either re-breaking or bowing at the point of fracture by having the patient wear for two months a calliper Thomas splint. To make this, the lower ends of the rods are cut off and bent toward each other at a right angle. Their ends are placed in a hole bored through the front of the heel of the shoe and held in by a strap. The Thomas for this purpose must have a small ring. The circumference of the ring should be two inches greater than the circumference of the thigh at the gluteal fold.

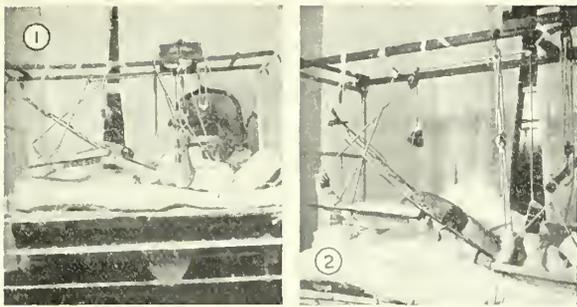


Fig. 1. Thomas Splint for Fractured Femur. Patient is Lifting Himself Clear of Bed. Right Hand Pulls Cord of Buttocks Sling and Left Hand Pulls Cord to Ring of Thomas Splint
 Fig. 2. Thomas Splint for Fractured Femur, Showing Knee Mobilizer, Correction for Equinus, Spring Traction, Tongs, Lateral Correction Discs, Suspension of Ring, Buttocks Sling and Wire Screen Support

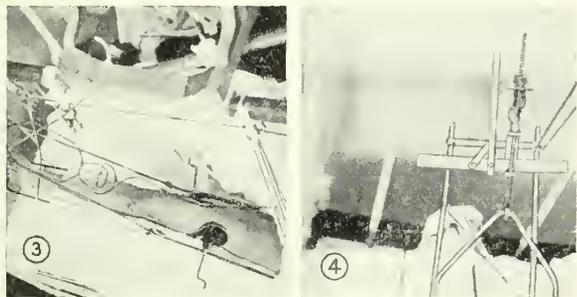


Fig. 3. Thomas Splint for Fractured Femur, Showing Knee Mobilizer, Tongs With Stop and Correction for Lateral Deviation
 Fig. 4. Spring Traction Device, With Scale to Register Pounds of Pull

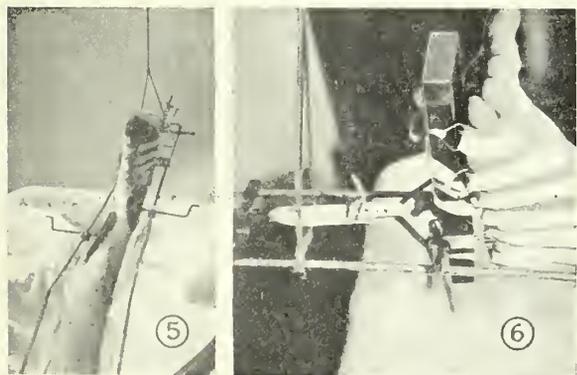
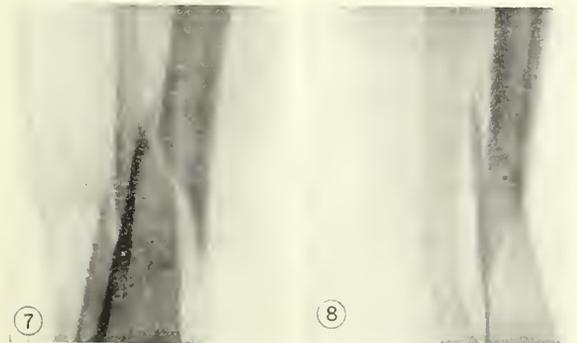
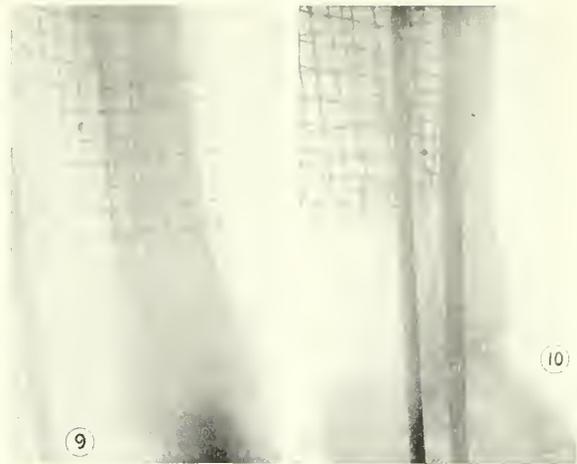


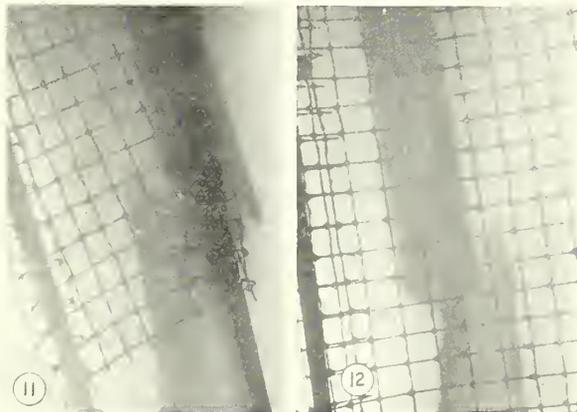
Fig. 5. Thomas Splint for Fractured Tibia, Showing Spring Traction, Sinclair's Foot-Piece, Correction of Lateral Deviation and Wire Screen
 Fig. 6. Sinclair's Foot-Piece



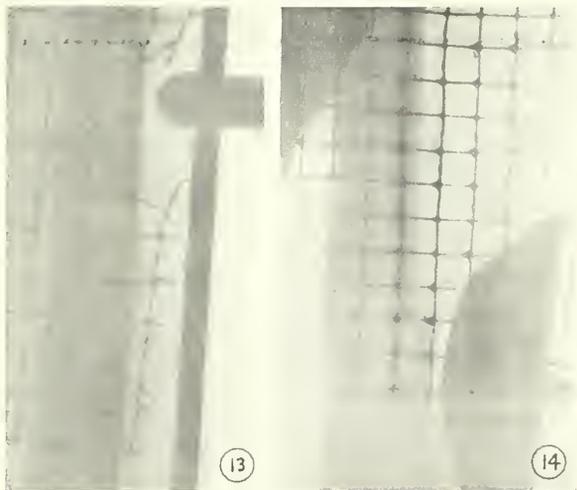
Figs. 7 and 8. Fracture of Lower Leg of the Type Generally Considered to Necessitate Open Operation for Correction



Figs. 9 and 10. Same Fracture as Figs. 7 and 8, Showing Correction Obtained by Use of Thomas Splint



Figs. 11 and 12. Fracture of Femur in Lower Third Partially Reduced
 Fig. 11. Lateral View
 Fig. 12. Antero-Posterior View



Figs. 13 and 14. Same Fracture as in Figs. 11 and 12, Showing Result Obtained by Thomas Splint
 Fig. 13. Lateral View
 Fig. 14. Antero-Posterior View

When the Thomas splint is used for the arm, it should be remembered that unless special padding or disc pressure is made against the outer surface of the elbow that the carrying angle will be obliterated and great deformity will result.

In using the Jones humerus traction splint (a modification of the Thomas) for fractures of the humerus one should never attempt to apply traction by a sling over the top of the forearm. This will result in wrist-drop from pressure on the musculo-spiral nerve at this point and will also cause a large area of necrosis in this part of the forearm. The traction should be applied to the skin in the lower part of the upper arm. In treating fractures of the forearm by the Thomas splint method, it is well to put a joint in the Thomas splint opposite the elbow, so that the arm can be kept at a right angle and function of the elbow be preserved by keeping the elbow mobile. The upper rods of the Thomas must be specially bent for this purpose and braced to each other by a cross wicket. In case one wishes to apply slow pressure in straightening a knee or an elbow, the Thomas splint can be used, using the inner tube of an automobile tire for the slow elastic pressure over the joint.

Several illustrations are to accompany this article.

SOME OBSERVATIONS FROM THE CLINICAL AND LABORATORY FINDINGS IN PYELITIS AND PYELONEPHRITIS.*

By LEON J. ROTH, M. D., F. A. C. S., Los Angeles.

Included among the many paradoxical findings in clinical investigation and laboratory examinations are those concerning infections of the kidney pelvis and their associated glandular structures. The subjective symptoms, clinical course and results of laboratory analyses run in no way parallel either in mild or severe cases. As a gross example may be mentioned the bacteriuria of renal origin not associated with an infective disease, where practically pure cultures of usually coli bacilli are constantly poured from the kidney without a subjective symptom or any elevation of temperature. In these cases drainage of the bladder with a resident catheter suffices to clear the urine to limpid, but silent recurrence is the rule upon withdrawal of the drainage. It is not unknown to see in a single day the same patient with a swirling bacilluria and a perfectly clear urine. An infection of this kind may persist for years, possibly without destructive process or interference with the general health.

However, more serious aspects and complications are encountered in cases of acute involvement, or acute exacerbations of chronic and latent infections of usually determinable focal origin.

The question arises as to why the subjective symptoms should be so severe with minimal urinary pathology, and why in certain cases, so benign, with a practically pure culture of colibacilli, staphylococci or gonococci.

These observations have been made from a fairly large number of cases, the range of which varies from spontaneous recovery under very simple treatment to lethal termination without operation, and one death following a nearly hopeless nephrectomy.

Considering the diverse pathology the practically constant absence of casts is remarkable. These were found in four cases only and then in very small number. This emphasizes the fact that exclusive of miliary tubercular infections and gross surgical pathology in general, there are among others, two great and absolutely distinct forms of renal disease. The first form includes the medical nephritides described under the syndromes of *chloruremie* and *azotemie* by Widal, and the various forms of interstitial, tubular and glomerular disease familiar in our literature. The first subdivision is purely chemical and the diagnosis of variety is made principally upon the respective quantitative retention and excretion of the chlorides, urea and its allied nitrogenous end products, and the presence or absence of edema. The second subdivision is classical and includes the familiar symptoms, mention of which here would be verbose, with the exceptions of the microscopical findings relating to casts, pus, blood and bacteria, and the presence or absence of albuminuria.

Differing from the first form, the second will be considered under the tentative title of bacterial, infected or (sometimes) surgical type, with the presence, as indicated, of pus and organisms even though in but small numbers. There are concurrently a high febrile course, renal and referred pains, urinary disturbances and the general aspect of severe constitutional infection. The blood count shows extraordinary variations in the number of white cells. Edema is of rare occurrence. The terminal phase is usually an overwhelming toxemia.

The consideration of mixed types must not be overlooked. It is questionable in the medical nephritides whether a pure type of any variety may exist independently. Possibly during beginning development, and extreme termination a pathological entity might obtain, but the metamorphosis from a large red to a large white kidney and subsequently the development of the contracted granular gland occurs by *laison* and does not pursue its course as a distinct form, beginning and ending in its pristine purity.

Therefore the ingrafting with bacteria and the formation of pus are quite as possible in an already nephritic kidney as one perfectly free from previous disease, and the presence of casts accounted for by the cast producing factors of the associated Brights, and not in any way to the pure pyelitic or pyelonephritic disease. On the other hand assuming a pyelonephritis, why should there not be here similar cast findings considering the compounding of nephritis with pyelitis?

The pathology varies with the route of infection and whether or not the urinary tract was normal at the time of the infection. Briefly, then, and considering only a single type, in descending or haematogenous infection congestion, is invariable. Associated with this may be ecchymoses of the gland and pelvis. In the acute form the glomerular and tubular epithelium undergo granular and other changes, and cellular infiltration occurs. In the chronic form the bacteria are liberated from the blood vessels and provoke a

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

scale of lesions varying from abscess formation to sclerosis without suppuration.

A comparison is invited between this description and one concerning Bright's disease in general.

In spite of this, the fact remains that careful laboratory search failed to evidence casts in a decidedly large proportion of cases, and then only a few hyaline in each of three observations, and hyaline and granular casts in one.

The occurrence of blood in the urine causes several problematic complications. Of first order is the resulting presence of albumin in greater or less quantity which may mask a true albuminuria. A coarse differentiation may be made if the amount of blood is small and that of the albumin large. The true type of albuminuria does not enter largely in this description on account of the rarity of its presence.

The blood itself may be of other than renal origin, and this may (or may not) be negligible, and here exists a fallacy in routine examinations of the upper urinary tract that is extremely annoying. I refer to the bleeding from trauma. It is quite ordinary to have slight hemorrhage from the bladder neck in obtaining a catheterized specimen preliminarily to cystoscopy. This partly can be overcome by having the specimen voided; but not entirely eliminated, as often the frequent passage of urine is over a congested cervix that exudes blood. Red cells may be found in the output from one or both kidneys that are perhaps due to the passage of ureteral catheters; the confusion in differentiating is apparent.

Be that as it may, the presence of blood in pyelitis and pyelonephritis is not as frequent or abundant as one would imagine considering the early stage pathology, and yet one of my cases had copious recurrent haematuria with pain and marked febrile course for a period of seven years, and the nephrectomized specimen was benign, nearly functionless fibrosed gland with obliterated calyces. The urine was loaded with pus but contained no casts.

The number of red cells has shown nothing of importance in this issue, but the white counts had such varying results that all attempts to associate the high leucocytosis with circumscribed suppurative processes failed.

The blood counts were made at the peak of illness and the highest count quoted. The proportion of polymorpho-nuclear leucocytes and lymphocytes showed no unusual variation.

In fact a leucocytosis of varying intensity occurred in practically all cases, and the highest count (28,620) was found in a chronic pyelonephritis without abscess formation and the next to the lowest count (8116) was in a case of cold pelvic abscess of foul content which involved the right kidney by obstructing its ureter. The pelvic capacity was 25 mills and the catheterized specimen showed numerous pus cells and a few coli bacilli. The pain, temperature and sweats were relieved by a resident ureteral catheter which drained for seven days previous to and three days following the laparotomy. There has been no recurrence of renal symptoms to date.

An intermediary count of 17,000 was found in a fulminant case of multiple abscesses with thick purulent discharge from the right kidney. The infection was so severe that the patient succumbed 24 hours after a too long delayed nephrectomy. Worse in pathology, but with a white count of but 13,368 was another case of multiple abscesses in which urinalysis showed no casts, very few pus cells and very few bacteria. This patient made a perfect recovery following nephrectomy.

In a fifth case, which had run a recurrent septic course for a long period; due to the emptying and refilling of a pelvis of plus 40 mills purulent content: a practically functionless gland was demonstrated. There exists a large uterine fibroid which unquestionably has been the causative force. The white count here was 18,870.

Compare these cases with one running equally high temperature, and entertaining but few pus cells and few bacteria (coli), that showed a leucocytosis of 25,500 and which yielded to expectant treatment only.

The lowest count of 7321 was associated with a tender, large kidney with no evidence of other focal infection, that ran a septic course with drenching sweats for several weeks and finally recovered spontaneously. The urine showed no casts, many pus cells and but few bacilli.

From these few detailed reports, and those cases completing the series, it seems apparent that the blood count has no distinctive diagnostic value from a numerical point of view, that is, a leucocytosis of 10,000 is as efficient in information as a count of 20,000. Thus in no instance has it been possible to differentiate draining, mild urinary infections from closed collections of pus.

It is regrettable that blood cultures were not made in these cases, because a bacteraemia of some degree might have been demonstrated. Pus and bacteria in the upper urinary tract are not rare and are very commonly symptomless, and other factors such as retention, inflammation and resorption are the responsible elements producing the constitutional disturbances.

In a general way and without recourse to detail or statistics, treatment has been surgical, expectant or has consisted of kidney drainage by resident catheter and single or repeated pelvic irrigations. The use of vaccines was early abandoned. The majority of the cases in this last division were not treated until the urinary culture was sterile. The results so far as known have not necessitated such strenuous care and clinical cure was deemed sufficient. In some instances the cultures were negative, and here included were several cases of coli infection and one each of pure staphylococcus and gonococcus. One case of bilateral pure culture staphylococcus persistently resisted all therapy.

IMPROVED INCISION FOR THE FREDET RAMMSTEDT OPERATION

By EDMUND BUTLER, M. D., San Francisco

The epigastric right rectus or midline incision is the usual portal of approach in performing the Fredet Rammstedt operation. The closure of these incisions is fraught with many technical dif-

faculties that tend to prolong the time of operation and resulting often in various post-operative complications.

As soon as the peritoneum has been sectioned, the greater omentum and collapsed small bowel protrude through the wound and their replacement and retention is often difficult. At times the fine web-like omentum is torn, producing holes in this curtain-like structure that loops of bowel may slip through and years later cause intestinal obstruction.

Particularly is the omentum troublesome during the closure of the peritoneum. It clings to the suture material and pokes out between the stitches, sometimes escaping the notice of the surgeon, and adheres to the edges of the fascia, thus preventing proper healing, and predisposes to early rupture of the wound or later to postoperative hernia. These little omental herniae not only produce weakened areas in the wound, but often stragulate, and are the cause of post-operative vomiting that is credited to other factors. The fine web-like omentum is one of the bugaboos of infant abdominal surgery.

The improved incision, called "the flood gate incision," for want of a more appropriate name, does away with the above described difficulties and complications. This incision is made over the quadrate lobe of the liver above its free margin. The quadrate lobe extends lowest about 2 cm. to the right of the midline; a longitudinal incision 5 cm. in length, located 2 cm. to the right of the midline and above the free margin of the quadrate lobe, gives ample room for the muscle-splitting procedure. This incision may be completed while the child is straining without any hollow viscera or omentum escaping; the liver moves with respiration and bulges slightly into the wound if the abdominal muscles tighten. This incision is particularly useful when operating under local anesthesia.

The dorsal surface of the operator's left index finger slipped into the wound easily displaces the "flood gate," the quadrate lobe of the liver, superiorly. The pylorus lies directly posterior to the quadrate lobe and is easily grasped between the index finger and thumb of the operator's left hand and elevated through the wound.

The splitting of the pylorus is not difficult if the scalpel be laid aside after an incision is made through the serosa and the more superficial fibers of the pyloric muscle. Into this fissure the closed tip of a mosquito clamp is forced and the shafts separated as in the process of blunt dissection. The hypertrophied muscle tears readily down to the mucous membrane. Care must be taken not to open the duodenum; its muscular walls are underdeveloped, quite in contrast to the hypertrophied gastric musculature.

The splitting completed, the pylorus retracts, the liver glides down, completely blocking off the abdominal hollow viscera and omentum from the wound, and a rapid careful closure, layer by layer, may be made.

INVOLVEMENT OF THE GENITO-URINARY TRACT ASSOCIATED WITH ACTIVE PULMONARY TUBERCULOSIS.*

By ANDERS PETERSON, M. D., Los Angeles.

During the demobilization of the army in the fall of 1918 and greater part of 1919 the war department segregated into special hospitals all of the soldiers who were suffering from pulmonary tuberculosis, and also those in whom the medical boards found suspicious evidence of this disease. The Surgeon-General's office took the position that no soldier should be returned to his home until he was placed in the best possible physical condition, and if not curable, until such time as he had reached his maximum improvement.

By this time the medical corps had been well organized into team work and this large army of men had a fairly careful and complete physical examination before their discharge into civil life, and it is due to this systematic examination that thousands of men were retained for observation and treatment. Indeed, so great a care was exercised by the camps of demobilization that many men who had a very slight or practically no evidence of tuberculosis were retained for a term of observation, usually three months.

Four special hospitals were established for the care of soldiers suffering from pulmonary tuberculosis. Oteen, North Carolina; Hospital No. 21 near Denver, Colorado; Whipple Barracks near Prescott, Arizona, and Fort Bayard, New Mexico.

Fort Bayard is located in the eastern foothills of the Rocky Mountains, ten miles from Silver City. This post was established about sixty years ago to protect the miners of this region from the Warm Spring Apaches, and thirty years ago a small tuberculosis sanitarium was established here. It has since remained the United States General Hospital for care of pulmonary tuberculosis. The pre-war capacity reached 300 beds. During the most active demobilization period temporary buildings and hospital tents were used extensively. In the winter of 1919 the patient population reached 2000. This number was reduced by spring to between 1000 and 1200 patients. During eleven months of service at Fort Bayard the patient population varied between 800 and 2000, practically all in the original draft age (20 to 30 years). Approximately 80 per cent. of the cases had active pulmonary tuberculosis, the balance, or 20 per cent., were sent here under observation for tuberculosis. Usually about 250 patients with far advanced lesions were cared for in the infirmaries.

My object in calling attention to these facts is for a comparison of the involvement of the genito-urinary organs in the presence of pulmonary tuberculosis.

Clinically, I demonstrated only five cases of surgical tuberculosis of the kidney, three of whom had active lung involvement. One had bilateral renal tuberculosis and one had a unilateral renal

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

tuberculosis and tuberculous epididymitis, with no active pulmonary lesions. Involvement of the epididymis was observed in three cases. On one an epididymectomy had been performed elsewhere and a fistula persisted. One had bilateral involvement and in one an acute abscess developed, destroying both the epididymis and testicle. A castration was done and the wound healed in three weeks. Two months later the patient died from an acute tuberculous pneumonia. At autopsy the kidneys were free from tuberculous invasion. The prostate showed a caseated abscess and there was a cold abscess at the stump of the cord following the castration, which had not pointed to the surface.

At autopsies massive lung lesions were always found—old multiple cavities filled with pus, cheesy material and necrotic tissue; large massively walled-off cavities with very extensive destruction of tissue. The above old types of lesions were now and then associated with a fresh general miliary distribution, both into the remaining functioning lung tissue and into the peritoneum and abdominal viscera. Indeed, such massive chronic involvement was demonstrated at these post mortems to make one appreciate the great tolerance compatible with life the human body possesses against this disease. All of these fatal cases were acutely toxic for weeks to months prior to death with high temperature, great emaciation and dyspnea. Certainly the eliminating structures, such as the kidneys, were over burdened with toxic substances as well as the bacilli in the blood and lymph streams.

Except in cases where acute miliary tuberculosis was the immediate cause of death, the genito-urinary tract was rarely involved in the infection, and here the lungs showed old massive lesions, while the lesions in the kidneys were of the young or miliary type.

Authorities uniformly agree that tuberculosis of the genito-urinary tract is secondary to foci in other organs of the body and give the lungs as a frequent seat of the primary lesions.

Tuberculosis of the lymph glands may be quiescent for years and under favorable conditions become active and cause secondary infection of other organs; this fact is often difficult of demonstration.

Braasch, of the Mayo Clinic, in a review of a large number of cases of surgical tuberculosis of the kidney, found that 5 per cent. had active pulmonary lesions. (Personal communication.)

* Tice states that "tuberculosis of the kidney is probably a less common complication of pulmonary tuberculosis than is the reverse sequence of events. It is surprising how seldom we find clinically a complicating renal tuberculosis in pulmonary cases. When renal infection occurs it may be in the form of miliary tuberculosis, which gives no symptoms during life."

** "Nephritis occurs among tuberculous patients in the same proportion as among non-tuberculous patients. Albuminuria does not mean tuberculosis of the kidneys."

*** "Tuberculosis of the kidney forms 10%

of tuberculous infections. Acute nephritis, parenchymatous nephritis, interstitial nephritis and waxy disease of the kidney are observed in the kidneys of tuberculous patients. These lesions are due to the toxin of the tubercle bacillus on the kidney."

My experience with tuberculosis of the genito-urinary tract, prior to service in the army, showed that active pulmonary lesions were not frequently found.

Let us consider the behavior of tuberculous invasion from a general standpoint of immunization. It is certain that our continent is populated by a tubercularized people, that is: all children brought up in this country are exposed in various degrees to the infection of tuberculosis—those living in the city to a far greater extent than those in the country districts. Children who develop pulmonary tuberculosis succumb early to the disease, in a miliary form. The form with which we have to deal is the chronic pulmonary type which becomes manifest in the early adult life (20-35 years). These last named individuals were all exposed during childhood, but did not develop pulmonary type of tuberculosis. However, later in life, due to some intervening factors, as acute febrile diseases, overwork, life in the tropics, etc., the pulmonary type of disease becomes manifest.

We can only give credit to two means of invasion:

(1) Either through a massive fresh exposure to the tubercle bacillus, due to living with people with active tuberculosis, or:

(2) A breaking down of the foci already existing in the lymphatic glands. Thus tuberculosis of the lungs might well be considered secondary.

Surgical tuberculosis of the genito-urinary tract was not a frequent complication in patients suffering with pulmonary tuberculosis.

From a clinical standpoint I feel that tuberculosis of the genito-urinary organs is primary to a far greater extent than is generally considered.

VESICO-INTESTINAL FISTULA.*

By LOUIS CLIVE JACOBS, M. D., San Francisco.

Because of the rarity of this condition, I am taking the liberty of reporting a case. An elderly man, 76 years of age, a grandfather of healthy children, had been in the best of physical condition for the past 20 years. For the last three years he had had a yearly physical examination by the doctor of his life insurance company. He states that all physical findings were negative. The urine had been free from pus and albumen. He denies all venereal diseases, has never had typhoid fever. He gives a history of having suffered from gout, principally in his big toes and of a persistent psoriasis for a number of years. He has had no dysentery nor any trouble with his bowels or rectum.

On August 4th last he was feeling in the best of health, but at about midnight he awoke with an intense desire to urinate, and to his surprise he passed a small quantity of dirty, bloody urine. This was accompanied with burning and pain. During the balance of the night he had to urinate every

* Tice, Practice of Medicine, Vol. LI, pp. 464, 465.

** Tice, Frederick, Vol. II, pp. 472-3.

*** Thompson, Walker, pp. 227-230.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

15 minutes and it was very painful. After two days the blood disappeared from the urine, but the frequency and dysuria persisted. He then observed that his urine had a very foul odor and at the end of urination would expel gas from his penis. A high temperature accompanied this attack and, excepting a general malaise, there were no symptoms excepting those of urination.

I saw this patient three weeks later, at which time his temperature hovered around 100°. He had lost at least 20 pounds of weight. He was very much emaciated, was bothered with a large amount of flatus and expelled gas from the penis. He had nocturia and dysuria, associated with pain during and after urination. His urine report showed a large amount of pus and was strewn with colon bacilli staphylococci. It was free from renal elements, alkaline in reaction and a large amount of detritus was present. On catheterization there were four to six ounces of residual urine. Rectally, the prostate was normal in size and not tender to palpation. Blood examination: Wassermann was negative; reds 3,850,000; Hb. 75%; whites 18,800, polys 84%, eosinophiles 1%. Systolic blood pressure was 120 mm., diastolic 82. Heart and lungs showed nothing abnormal. The liver and spleen were not enlarged. The abdomen was flaccid with no rigidity or tenderness. Colored fluid injected into an irrigated bladder showed no colorings in the feces nor in the colonic flushings. No adenopathy. Repeated fecal examinations were negative for amoeba or other parasites. When the bladder was distended with six ounces of fluid, the entire amount was recovered through a catheter. A cystoscopic examination was made following a meatotomy. Examination was conducted first with a McCarthy straight cystourethroscope and later with the Wappler instrument. It was comparatively easy to wash the bladder and with 200 c. c. of fluid in the bladder to obtain a clear field of vision.

The sphincteric margin showed a considerable amount of bulging of the lateral and median lobes of the prostate, with some edema of the same. The bladder wall was hyperemic with prominent blood vessels. There was some trabeculation on the posterior wall of the bladder and likewise on the upper wall. The trigon was prominent, and very hyperemic with normal ureteral orifices. While searching for the right ureteral orifice I noticed a tiny red spot on the posterior wall, just above and to the right of the trigon; so I reshifted my cystoscope to this area, and had about decided that this must be a spot of inflammation in the mucosa, when I saw a worm-like affair squeeze itself from a minute orifice and by its own weight prostrate itself on the bladder wall. This substance was absolutely cylindrical and reminded one of pressing lanolin from a small tube. With the end of the cystoscope I was enabled to mash this substance. The opening in the bladder had again resumed the red spot appearance, and to all intents and purposes had no further intention of yielding further fecal material. Strange to say, there was no area of ulceration around it and the mucosa was but slightly hyperemic in that area. The following day a proctoscopic examination was made by Dr. A. Newman,

a proctologist of San Francisco. The intestinal opening of the fistulous tract was not discovered. The rectum was found normal and it was assumed that the opening in the gut must be high up, possibly in the small intestine. There was no dribbling of urine in the rectum, there were no signs of malignancy, stricture or ulceration in the rectum.

The diagnosis of vesico-intestinal fistula was made by means of the cystoscopic examination and the collective symptoms. The etiological factors were difficult to obtain. Dr. J. Cunningham of Boston makes mention of eight cases where there were communications between some part of the intestinal tract and the bladder, and up to 1915 reports a collection of cases from the literature to the number of 342, including six cases of his own. In his collection of cases there were none reported as true intestinal-vesicle fistulae, the openings being all of the rectal variety. The probable causes of this condition are mentioned as malignant growths, tuberculosis, rectal ulcerations, perirectal abscesses, diverticulitis, appendicular abscesses, syphilis, rarely actinomycoses, amoebiasis, and those of traumatic origin. A local surgeon reported a case of amoebic origin in 1912. This case was suffering from dysentery, associated with a large liver and a large mass in the rectum, which was directly communicating with the bladder, and amoebae were found in the stools.

Cunningham gives the histories of six of his cases, two were in women and these were of the pelvic abscess variety. Of the male cases, one was due to prostatic abscess, another to tuberculosis of prostate and bladder, two cases to carcinoma with ulceration in the rectum. Dr. Henry Meyer of San Francisco states that in three cases he has observed fistulous openings in the bladder communicating with the lower bowel. These cases were all sufferers with amoebiasis, confirmed by the finding of amoeba in the feces.

It is the consensus of opinion that when a communicating tract exists between the alimentary canal and the bladder, that the most logical site for the opening is in the rectum, and 50 per cent. of the cases are so reported. The next most common location of the opening is in the sigmoid, the next in frequency are the small intestine and the cecum. The fistulous tract may be a direct communication or a long and tortuous sinus, or again through an intermediate cavity.

The tissues surrounding the bladder consist of fatty and areolar tissue, which form part of the intercommunicating planes of the pelvis, and is closely associated with the cecum and the appendix on the right and the sigmoid flexure on the left; and it is easy to understand how an abscess forming here is apt to perforate into the bladder. Owing to the close approximation of the rectum to the bladder, it would be natural to expect any malignant or tubercular ulcerative condition here to perforate directly into the bladder, and we would have a direct communication with the escape of urine into the rectum. On the other hand, any condition which would produce an adhesive peritonitis around the movable portions of the intestinal canal would account for fistulous openings into the bladder.

Thomas Walker makes mention of a condition of an intermediary cavity between the intestines and bladder, which could accumulate pus and feces and later discharge into the bladder through a direct or tortuous sinus.

The symptoms of fistula in the bladder are identical with those of an irritable bladder, associated with an acute bacteriological cystitis; diuria, nocturia, with much tenesmus, and the addition of gas and feces in the urine being particularly noticeable. Air in the bladder is sometimes present without a fistulous tract in the bowel. Dittel, Hartman and Blanquinque have all reported cases of this kind, which may be termed: essential gas formation in the bladder.

The onset may be insidious, whence there are apt to be symptoms attributable to rectal or howel trouble, such as diarrhoea, flatus, blood in the stools, dribbling of urine into the rectum and pain principally in the anus. The bladder symptoms in these cases come on gradually. The case here reported is not of this insidious type, the onset being sudden and not gradual.

Treatment: The treatment resolves itself into those cases that can be treated by the administration of specific remedies, especially, where one has a specific disease, as the etiological factor. Syphilis and tuberculosis should be handled with our modern remedies. The bladder should be frequently irrigated with some antiseptic solution and as often as necessary to keep the bladder fluid comparatively clear. Urinary antiseptics should be given internally and careful attention should be given to the bowels and to the diet. In one of the above cases reported by Cunningham, a tubercular patient, the fistula was healed by strict attention to diet, hygienic measures and bladder irrigations. This patient died a number of years later from a general tuberculosis. Thomas Walker states that he has seen patients in good health twenty years after the fistula had become established. Tuttle states that in acute cases due to accident, injuries, surgical procedures, permanent catheterization together with constipation of bowels may facilitate the healing.

The permanent cure of these patients resolves itself into some form of surgical procedure, either a direct closure of the fistulous tract or the diversion of the fecal stream.

A colostomy is the operation of choice, when the fistula empties into the rectum; but where the communication between the intestine and bladder is above the sigmoid, it is not likely to prove satisfactory, and the surgical procedure would be to open the abdomen, dissect the intestines free from the bladder and repair both organs where possible, and if necessary do a resection of the gut. From inquiries, as well as perusal of the literature, I find the mortality in the latter type of cases to be very high.

In 1911, Dr. A. L. Chute of Boston reported two fatal cases of intestinal vesicle fistula, due to diverticulitis of the sigmoid, both of which died following operation. In these cases the sigmoid was found adherent to the bladder, with a large amount of adhesions being present.

462 Flood Bldg., San Francisco.

URETERAL TRANSPLANTS FOR OBSTRUCTION OF THE LOWER URETER.*

By ROBT. V. DAY, M. D., Los Angeles.

I wish to report a small series of ureteral transplantations in the skin of the abdomen. The indications, and especially the technique and results, of bowel and bladder transplants, so comprehensively taken up by the Mayos, Coffey, Stiles and many others that I wish to confine myself to the comparatively neglected field of ureter to skin anastomosis.

There are three types of cases in which this is applicable and preferable:

First and most important: In cases of advanced and incurable tuberculous bladder with intractable vesical symptoms, where both kidneys are tuberculous, or in case of a previous nephrectomy on one side, the other side has become so involved that an exquisitely irritable contracted viscus exists which is not or cannot be palliated by suprapubic drainage.

Second: In lieu of nephrectomy, where there exists trauma and infection on one side and there is doubt for the time being as to the future functional efficiency of the opposite side as illustrated later by Case V.

Third: In carcinomatous infiltration in the walls and about the lower ureter in carcinoma of the cervix causing extreme obstruction or occlusion;

In carcinoma of the bladder—male or female—in which the bladder has become highly contracted and so irritable that suprapubic drainage is no longer tolerable.

CASE I.

Male, aet. sixty, carcinoma of bladder, Squien's Radical operation done one year before; four months previously we opened and cauterized by Percy method; permanent suprapubic drainage instituted; condition at this time intolerable. Bilateral ureteral anastomosis in the bowel because his days were numbered and he begged to have an operation to sidetrack the urine and would not tolerate the idea of having the ureters transplanted three weeks apart since his bladder tenesmus would not be relieved whatever by the first operation. Both ureters were infiltrated at the lower ends—both dilated—one as large as a lead pencil, the other as large as a man's finger. His kidney function was bad and he died of uremia nine days after the operation. I report this case of ureto-sigmoidal transplant as a contrast to the others to follow of skin transplants, all of whom were in quite as bad or worse general condition. In old cases with highly damaged kidneys from back pressure ascending infection is almost certain to follow if they do not die from uremia or other causes very soon, where the bowel transplant is done. The man was entirely relieved, however, of his bladder symptoms at once. He had it impressed upon him that the operation would probably result fatally, but he chose it himself. What pain he had incidental to the belly operation was negligible compared to his previous pain. There was considerable rectal irritation from the purulent urine direct from the kidneys, producing a mild proctitis, but relieved by a soft Pezzer catheter in the rectum, draining the urine as fast as it entered. From this one readily deduces that the bowel transplant is

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

not a suitable palliative operation in any sense for these advanced and intractable cases.

CASE II.

A negro woman, aet. 39, hysterectomy three years previously for uterine fibroid. In county hospital for past four months with carcinoma of the cervix, with extensive infiltration in the base of the bladder and vaginal walls. The nurse reported she had urinated but a few ounces in four days. Bladder catheterization disclosed a practically empty bladder. The right ureter was catheterized, but no catheter could be inserted into the left. A number 7 whistle-tipped catheter was left high up on the right side and uretero-dermal anastomosis made on the left. The abdominal muscles highly oedematous as disclosed at the operation, and leaked serum very freely. A number 14 soft rubber catheter was passed into the hook-up ureter and a weak argyrol irrigation made twice daily. At the end of a week the catheter in the right side was removed, judging that the prolonged dilatation would so modify the obstruction that the urine would pass. However, at the end of 24 hours there was no urine in the bladder and consequently another catheter was inserted into the right pelvis. She developed an intense pyelitis in the right side six days later. The right ureter was therefore transplanted and argyrol irrigations commenced. Both pelves in this case had undergone considerable dilatation and were filled with a creamy fluid—urine and pus. Parenthetically, it was amazing to observe the promptness with which these severe cases of pyelitis—some of them with profound constitutional symptoms—cleared up. To this there were practically no exceptions in any of the cases. She died of her original disease (diffuse carcinomatous infiltration throughout the pelvic organs) about two months later, after having been removed to the contagious pavilion, it having been found that she was a diphtheria carrier.

CASE III.

A Japanese, aet. 45, history of four operations for carcinoma of bladder. First one radical; last previous operation disclosed metastasis in the retro-peritoneal glands and omentum as large as a small English walnut. Suprapubic drainage had worn itself out and the patient having known of the relief afforded another patient in the ward about that time, pleaded to be hooked up so that he could obtain sufficient relief to get back to Japan and die in his own country—a Japanese custom. He had had at the time of transplant operation practically complete anuria for three days, and his abdominal wall was found very oedematous and his ureter greatly dilated. An assistant tore his left ureter so high up that a nephrectomy would later become necessary on that side and a transplant on the other. Both sides drained abundantly for two weeks and his condition was splendid when suddenly he developed acute surgical condition in the lower pole of the left kidney whose ureter was injured and he had anuria on that side. A left nephrectomy was done and he made an uneventful recovery. His other kidney, after hooking up, put up a high percentage of 'phthalein and the urine was clear up to the time of his death nine weeks after the left nephrectomy.

CASE IV.

A Mexican woman, aet. 46, carcinoma of cervix. Percy's cautery method had been used and following this she developed a vesico-vaginal fistula from the burn. Some time later she was presented, along with other cases, of carcinoma, for operation at a clinic arranged for Dr. Percy at the Los Angeles County Hospital. Dr. Percy, after entering the abdomen, found a large dilated left ureter from which he aspirated some exceedingly purulent urine and at that time advised that her left kidney be removed at a later date. The ammoniacal urine leaking through the vesico-vaginal fistula had, in spite of all attempts to obviate it,

resulted in marked dermatitis and extreme excoriation of her skin. Her condition was pitiful and one heard her moans down the hall long before he came to her room. One thing she begged for, next to a speedy death, was relief from the incontinence and excruciating dermatitis therefrom. We decided that a less dangerous and more palliative operation would be skin transplants or both ureters, a conclusion Dr. Percy himself commended when it was told him. The head nurse in the Surgery looked the woman over a bit and chided us for having the temerity to operate on this frail, emaciated, weak woman, venturing a bet, which was accepted, that she would die on the table. Dr. Mulvehill and I simultaneously transplanted the right and left ureters and she lived several weeks thereafter in comparative comfort.

CASE V.

Mrs. E. W., aet. 43, papillomatous cyst of the ovary with massive abdomen. A portion of the left ureter about one inch long was found to have been removed with cystic tumor and an anastomosis of the cut ends of the severed ureter was immediately done. Nearly three weeks after this abdominal operation I was notified by the interne that he had in his ward a case for nephrectomy. She had been draining urine through the abdominal incision for two weeks or more and was desperately ill—high fever, rapid pulse, high leukocytic count, etc. I instructed him to do a functional kidney test which obviously would be only for that side on which the ureter was uninjured, namely, the right. During the first hour 4% of 'phthalein came through; during the second hour, 5%; obviously the kidney whose ureter was uninjured was functioning so poorly at that particular time, at any rate, that it would not alone sufficiently serve the patient as a kidney filter. What amount of dye the other kidney was putting out we have no means of knowing, since by a tortuous course the urine was being discharged on the abdominal dressing. It was decided to hook up the left ureter to the skin, and if at a later time when she recovered from her sepsis, the other kidney should "come back," a nephrectomy could then be done safely. Consequently this was done. An extra-peritoneal abscess along the pelvic wall was encountered and drained of perhaps eight ounces of pus. The end of the ureter was difficult to find without injury to the intestines and had to be followed down from above. She made an uneventful recovery, gained weight rapidly and went home. On February 9th, ten weeks after the anastomosis, she was sent for and a functional kidney test was made. Her bladder was catheterized and the urine obtained contained considerable albumen, cast and occasional pus cells. 'Phthalein appeared in the bladder urine 22 minutes after intravenous injection and in the succeeding half hour (52 minutes altogether from the time of injection) there was 5½%. The dye appeared from the hooked up ureter in five minutes and in the succeeding half hour the output was 15%—in other words—15% in 35 minutes from the hooked up ureter as against 5½% from the other side in 52 minutes. We therefore conclude that a nephrectomy would have resulted in death from uremia in from one to two weeks in her case and we had saved her life by a transplant.

The technique is simple. If the ureter is very short it is brought out high up. Perhaps the best insertion is one through the outer third of the rectus sheath or through the semilunar line. We have tried Semi-Pfannenstiel, muscle-splitting, etc., but they are not quite so easy as the before mentioned. It makes little difference whether the buccous membrane is tacked to the skin or a good long piece of the ureter left protruding. We have had success both ways. In either event the ureteral wall is tacked to the aponeurosis or fascia and is left protruding to the skin and a catheter inserted to the kidney pelvis fastened in place.

The catheter is changed daily and through it the pelvis is injected with weak argyrol solution. We prefer bringing out the ureter through a stab near the incision, but we do not always do this. Cigarette drainage behind the peritoneum is necessary as a small hematoma—sure to get infected—is likely to result from the oozing. In certain advanced tuberculous bladder it is not only an act of mercy, but often prolongs life very markedly with immediate relief from the bladder symptoms. Bowel transplants are quite out of the question here, since infection will certainly take place in the gut; for this it is the operation par excellence. I have not yet performed it for this, but I have followed very closely two cases done by my colleague, Dr. Rosecranz, and cannot speak too highly of the procedure in these cases—one now having been done fourteen months—after a history of renal tuberculosis for ten years with a left nephrectomy double tuberculosis epididymis with rupture and prolonged drainage, tuberculous fistula, in ano, and the morphine habit, who has been four months conducting his own chicken ranch in Michigan after an invalidism to my knowledge of five years.

CONCLUSION:

Ureteral transplants to the skin is an act of mercy in certain advanced cases of bladder carcinoma. It is all of that in some cases of bladder tuberculosis and here markedly prolongs life and lessens invalidism. It prolongs life in certain cases of carcinomatous invasion from adjacent extra urinary organs. It saves life as illustrated by Case V. Unlike any other anastomosis of the ureter, the kidney is not insulted in the slightest and drainage can be made perfect. Even bilateral anastomosis to the skin at one sitting is almost devoid of shock in the feeble. It is the most rapid and efficient method of treating pyelitis and restoring kidney function to the maximum.

THE SIGNIFICANCE OF SPINAL DEFECTS AND PAIN OCCURRING IN RELATION TO OCULAR DISEASE.*

By LLOYD MILLS, M. D., F. R. C. S., Los Angeles.
From the Orthopedic Hospital-School, Los Angeles, California.

The loss of active interest in any possible relations between the eyes and the structures of the neck, followed the meteoric vogue of operations upon the cervical sympathetic ganglia, in a manner comparable to the operative blight which succeeded the period of complete tenotomies for strabismus.

Many clearly established facts and daily clinical observations attest, however, the continuous activity and importance of the oculo-cervical relations. As early as 1727, according to de Schweinitz,¹ Pourfour de Petit observed that the eye became softer after section of the cervical sympathetic. Verification of this fact led to the belief that "primary disease of the cervical sympathetic ganglia might be the basal cause of glaucoma." The pressure of cervical tumors, of mediastinal polyadenitis, and of fracture-dislocations of the cervical vertebrae, notably of military origin, gave further striking evidence of the effects of deviation of normal sympathetic control over the eyes.

The sympathetic system correlates the various activities of the viscera, the inclusion of the eyes in the visceral chain being shown by the dramatic ophthalmocardiac reflex and its modifications in

disease. This correlation is shown more commonly and constantly by the pupillary changes common to the states of fear and excessive emotion, the ocular changes being linked with complete inhibition of the whole digestive function, with increase in the rapidity of the cardiac and respiratory action, with sudden activation of the suprarenals and thyroid and the immediate conversion of the sugar reserves stored in the liver and the body in general, into the final defense expression of more intense muscular activity.

The results of the excision of the superior cervical ganglion in glaucoma, as collected by Wilder² and by Rohmer,³ show this operation to have been followed by improvement in from 40% to 70% of the cases operated upon. Further tribute to the relations in question and to the operation of sympathectomy as well, was paid in Axenfeld's statement that "there is obtained by this operation in a certain proportion of cases of simple glaucoma, a definite and important result, and in some instances there has been a decided improvement, even where a previous iridectomy has failed." A low but constant mortality, the occasional development of tachycardia, exophthalmus, and ptosis and the opposition of the German school led to the abandonment of the operation and to forgetfulness of the significance of the benefits obtained in the successful cases. Two deductions might have been drawn from these cases: First, that a constant irritation in the form of pressure in the intervertebral foramina, or drag or pressure upon the sympathetic chain in its course, may have provoked the iridic and choroidal vasomotor changes which are expressed in the symptoms of glaucoma; second, that such prolonged pressure and irritation may have set up the degenerative changes in the sympathetic nerves and ganglia noted by Fisch,⁴ Cutler and Gibson,⁵ Wilder⁶ and Weeks,⁷ changes which were but little affected, if at all, by division or excision of a fragment of degenerated nerve at a relatively low nerve level. The successful results which followed the drastic removal of the ciliary ganglion in absolute glaucoma by Rohmer, and by Terrien and Poirson support the latter idea. Such deductions explain the recurrences noted after sympathectomy and after other operative measures for the relief of high intraocular tension.

The cervico-thoracic spine, as we have shown elsewhere,⁸ is peculiarly subject to skeletal anomaly, to articular disease and to the effects of spinal distortions. The existence of these abnormal factors, appearing, together with marked contractures or painful spasm of the cervical muscles, with significant regularity in many cases of glaucoma and in some of the obscurer cases of chronic non-inflammatory congestion of the conjunctivae, lend decided weight to the previous deductions.

Ocular vascular tone and its obvious expression as tone of the iris are clearly related to the state of activity of the sympathetic system in general. Postural strain may disturb the cervical sympathetic directly, or reflexly through fibers

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

coming from the solar or sacrosciatic plexuses, because of irritations from postural or other causes in segments under their influence. A well known example is the "spastic mydriasis" of children seen in splanchnic irritations. Hypotonus of the irises is commonly seen in that condition of general hypotonus in which the patient sags all over, is muscularly weak and relaxed, has drooping shoulders, frankly bad spinal posture and is mentally inert. Hypertonus, with brisk general and iridic overaction, is characteristic of the opposite physical type, in which spasm and contracture of the posterior cervical muscles are the rule. It is as yet uncertain whether we have the right to conclude from these two extremes that in the relaxed type the unusual dragging of the shoulder-girdle upon the brachial plexus and sympathetic is the source of pupillary sluggishness and dilations of varying degree, or that the cervical muscular spasm and contractures in the opposite type produce their effect by direct irritation of the posterior nerve roots at their point of emergence through the foramina. Such conclusions are suggested, at least, but will require much more observation, thorough radiographic studies of all suspicious cases, some operative work in the lower neck in certain of the unusual cases, and careful pathological investigation, before the exact nature of cause and effect can be stated with authority.

Numerous cases of pupillary irregularity and of more or less obvious variations in the rapidity and degree of pupillary action may be cited from the literature and from daily experience in connection with enlarged cervical glands, mediastinal growths, aortic aneurysm, pulmonary phthisis, pneumonia, inconspicuous or frank thyroid tumors and all manner of shoulder-girdle, vertebral and brachial traumas and deformities. Inasmuch as most of the severer injuries of the shoulder-girdle region fall at once into the hands of the general surgeon, the gross local lesion usually completely overshadows the finer ocular changes. Where sought for however, the effects of sympathetic irritation or paralysis are found with surprising frequency and often with a bewildering medley of vaso-motor, secretory and trophic symptoms quite unlike the classic Claude Bernard-Horner syndrome. Incomplete forms of this syndrome are seen most frequently however. Miosis occurs most commonly or, in unilateral lesions, inequality of the pupils, the smaller being on the side of the lesion and usually failing to dilate or dilating less rapidly and less completely on shading the eyes. Narrowing of the palpebral fissures, some enophthalmus and ptosis are frequently observed and, in unilateral lesions, a comparison of the eyes may show lessened secretion on the affected side, where the lids may be stuck in the morning owing to the adhesion of the thickened conjunctival secretion. The lessening of the excretion of sweat on the affected side seems to parallel the degree of inhibition of the secretion of tears. Both the ocular and secretory disturbances appear to be more prominent and more permanent when the spinal sympathetic centers are damaged than

when the efferent fibers which come down through the cord from the bulb are involved, for in the case of injury of the latter the symptoms usually subside quickly. In irritative lesions of the neck and cervical cord, among whose causes the postural lesions so commonly seen in the cervical region assume a definite place, the paralytic symptoms are replaced by irritative symptoms, and pupillary dilatation, increased width of the palpebral fissure from spasm of the superior tarsal muscle, unilateral hyperhidrosis, and very slight exophthalmus are observed in any combination.

Minor differences of pupillary size and action are noted less obviously in connection with the lesser postural faults in about eighteen per cent. of our cases. Frequently, as Landolt⁹ points out, it is difficult to say in a given case whether the anisocoria is due to mydriasis or miosis—i. e., whether the disorder is paralytic or spasmodic. Landolt's method of solving this uncertainty may be assisted materially by a knowledge of the type of cervical lesion which co-exists.

The minor displacements of the cervical vertebrae which occur with unsuspected frequency in the form of incomplete dislocations or, more correctly, subluxations, may have a direct effect upon the sympathetic fibers of the segments involved either as the result of dragging or pressure. Cyriax¹⁰ has observed several hundred such displacements, confirmed by X-ray no less than by the symptomatic relief which followed the reduction immediately. Such lesions may occur without symptoms, though usually they produce minor degrees of pain, stiffness of the neck and slight limitation of motion. Traction, hyperextension of the spine and rotation or pressure in the direction opposite to the displacement, reduces these deformities without discomfort. If unreduced, compensation becomes established in time with the formation of false joint surfaces, but with a new adaptation of ligamentous tension and a changed line of muscular pull, which naturally becomes unequal on the two sides of the vertebrae involved.

Aside from the sympathetic nervous connection between the eyes and the neck, and excluding the position-sensing function of the cervical muscles which aids the more specific position-sensing powers of the retina and the extrinsic ocular muscles, we have a third relation in the accessory visual function of the cervical muscles. This was first recognized by Lowman¹¹ and myself¹² and was first described by me (loc. cit.) under the heading of an accessory visual function. The muscles of the neck, especially the Trapezius, the Erector Spinae and the scapular fixators, hold the head rigid on the neck, fix the neck on the chest during all visual concentration, fix the shoulder-girdle in all finely co-ordinated work of the arms and hands and have a specific place in the achievement of detailed vision hardly less essential than that of the extrinsic ocular muscles themselves. Strains of this stabilizing apparatus occur at times, even with eyes that are functioning normally, either from overuse or abuse. Moments of intense peril, excessive emotion and violent muscular effort, especially when unaccustomed, may

leave an aching neck and even paresthesia and weakness of the hands as temporary residues from this origin. It is clear that this stabilizing function of the cervical muscles is also called into play when accuracy of hearing is necessary and is an important factor in the partially deaf and more particularly when there is decided difference in the acuity of hearing. That such auditory differences may induce spinal curvatures and deformities has long been recognized, but that the cervical muscles participate even indirectly in the normal mechanism of hearing is, we believe, a matter not recognized hitherto. The attitude of the head in listening is, in fact, usually the resultant of putting the better eye and the better ear more or less forward as the need of the moment or the better function of either may demand. Obviously strains of the cervical stabilizing system occur in connection with intense and prolonged auditory effort and have a definite relation to faults of crano-spinal form and alignment.

We have shown that the cervical and occipital aching and pain which occur in connection with use or abuse of the eyes in all ordinary forms of ocular concentration is due to muscular spasm and soreness over the points of muscular and ligamentous insertion, which are being unduly and unevenly stretched as the result of faulty skeletal alignment. The main defects which we have noted in this connection are abnormal spinal twists and rotations with irregular and painful impingements of normal or of abnormally broad lateral processes, with overlapping impingements of the posterior spinous processes in cervical lordosis, arthritic enlargements of the articulations which frequently involve the whole cervical column, fibrositis and periarticular thickenings due to ligamentous strain and trauma, and cervical ribs. A common fault is the lateral bend with rotation which occurs in scoliosis, where lateral and antero-posterior deviations of the shoulder-girdle exist, with so much stretching of the brachial plexus as to cause brachial pain and the incorrectly termed "brachial neuritis."

In the matter of cervical ribs, or transitional transverse processes, or normal first ribs made pathological by virtue of faulty spinal alignment, it is well recognized that while the fault may have been congenital, injuries which involve the Trapezius and interfere with its function as a support to the shoulder-girdle, or general conditions which bring about lack of tone in this great muscle, are largely provocative of the symptoms. The pressure exerted by the anomalous rib, or by the normal first rib, is nearly always on the lower trunk of the brachial plexus, the symptoms depending on whether the motor, sensory or sympathetic fibers are mainly involved. Neuralgic pains on the ulnar side of the forearm, partial paralysis of the intrinsic muscles of the hand, and of the flexors and extensors of the wrist, muscular atrophy, pallor or cyanosis of the fingers, hypothermia and even trophic ulcers in the distribution of the ulnar nerve, may occur in nearly any combination with or without partial or complete unilateral or bilateral Claude Bernard-Hor-

ner syndrome. Cervical sympathetic involvement is almost constant when the eighth cervical and first dorsal roots are involved in the brachial palsy, with their rami communicantes.

It is the common tendency to hold the head as still and the neck as rigid as possible when suffering from the more painful cranial and ocular conditions. This is almost a postural habit among the more emotive who are prone to some of the milder forms of glaucoma, with a tension just above the normal limits. In such cases nuchal pain and soreness are, in the main, the result of the muscular spasm, exaggerating the effects of the spinal faults which always co-exist. If attention is directed to the cause of this condition, the need for cervical relation explained, and traction, hyperextension of the spine, deep spinal massage and passive movements and hot spinal packs used for the more pronounced cases, the relief is usually prompt, and is followed frequently by surprising improvement in the ocular signs and symptoms.

The majority of patients having chronic inflammatory ocular conditions present decided cervico-thoracic spinal changes, chiefly in the form of tender, arthritic enlargements, marked fibrositis and periarticular thickening, which often, in the glaucomatous especially, bind the sixth and seventh cervical and the upper two or three dorsal vertebrae into a fused, rigid mass which moves "en cuirasse" when any spinal motion is attempted. Whether this represents the irritative cause of the ocular conditions, or is the effect of the latter upon the stabilizing system, is yet to be ascertained. In any event the difficulties and chronicity of treatment in such cases are clearly apparent. False articular surfaces have been produced nearly always and the object of treatment is not the vain end of reinducing free play between the individual vertebrae, but rather that of re-establishing more or less play and of lessening the contractures, fibrous thickenings and vertebral rotations and subluxations. The effect of these pathological changes in modifying the shape and reducing the size of the intervertebral foramina is clearly shown in radiographic studies. Traction and hyperextension of the spine; carefully graduated rotation; deep, protracted, but not too violent massage of the back; thick, hot packs and graduated exercises always give some relief and often give complete relief to the cervical symptoms, together with a coincident reduction of the ocular tension, which may become and remain normal, even without the use of miotics. Not infrequently these means so reduce the blood pressure, generally more or less increased in these cases, that this affords an additional means of indirect relief to heightened intraocular pressure.

The careful study made by Cyriax of London on the marked and often permanent reduction of pathological degrees of blood pressure resulting from manual therapy should be more widely known.

With regard to the method of local spinal treatment I wish to emphasize two points: First, that the improvement in the spinal fault may be brought about in the non-operative cases by a

number of related systems of passive movement, active movement, or gymnastics. The most efficient of these, and certainly the most fundamentally scientific, is the Swedish system of manual therapy introduced by Ling (1776-1839) and elaborated by Branting, Kellgren and Cyriax. This system has a definite, standardized technic and its results are measurably superior to those of the crew of manipulative cults which have sprung up in its wake.

Traction and movement applied with traction, are the fundamental therapeutic means used in all these cases. These identical principles have been employed consciously in surgery, especially in the orthopedic branch, since the time of Sir Astley Cooper, in achieving the mobilization of contracted, contractured and partially ankylosed joints anywhere in the body. Movement applied with traction separates the opposing articular surfaces, elongates the ligaments and muscles, stimulates nerves by this elongation, permits the ready breaking down of adhesions and by the production of flexibility and mobility leads to the relief of symptoms and the recreation of normal posture.

SUMMARY AND CONCLUSIONS

I. Ocular and spinal functions are related: 1, through the direct sympathetic nervous connections; 2, through the aid furnished the position-sensing mechanism of the retinae and extrinsic ocular muscles by the position-sensing mechanism of the neck muscles, and 3, through the accessory visual function of the stabilizing muscles of the neck and shoulder-girdle.

II. Interruptions of these relations may be expressed as symptoms occurring either in the eye or the neck, or both, and unilateral or bilateral according to the form and degree of interruption.

III. Severe cervico-thoracic and brachial lesions and deformities and, less commonly, conditions involving the sacro-sciatic and solar plexuses, may cause paralysis or paresis of the cervical sympathetic, or irritation of the sympathetic, with the production of the vasomotor, secretory and trophic ocular symptoms characteristic of each of these divergent conditions.

IV. The frequent association of minor displacements, anomalies and disease of the cervico-thoracic spine with irregularities of the pupils suggests a relation of cause and effect, with direct pressure or dragging upon the cervical sympathetic chain or upon the rami communicantes as the mediate factors.

V. The frequency with which glaucoma and chronic hyperaemia of the conjunctivae are associated with faults of the cervico-dorsal spine, and the facts that relief of increased intraocular tension may result from appropriate manual therapy of the spine and neck, without the use of miotics, are similarly suggestive.

VI. Strains of the muscular stabilizing system of the head, always exaggerated by faults of skeletal alignment, are responsible for the nuchal aching which follows prolonged or intense ocular fixation. Such strains also appear in acute and chronic intraocular inflammations, as the result of

holding the head rigid in order to reduce the pain due to motion, or to gravitational effect.

Bibliography.

1. de Schweinitz: Amer. Encyclop. Ophthal., Vol. VII, p. 5566.
2. Wilder: Amer. Encyclop. Ophthal., Vol. VII, p. 5567.
3. Rohmer: Ann. d'Ocul., July, 1902.
4. Fisch: Internat. Ophthal. Congress, Utrecht, 1899, p. 554.
5. Cutler and Gibson, Ann. Surg., 1902, XXXVI, 378.
6. Wilder: Jour. A. M. A., 1904, XLIII, 350-357, 425-430.
7. Weeks: Ibid., XLII, 293.
8. Mills: Amer. Jour. Ophthal., July, 1919.
9. Landolt: Amer. Jour. Ophthal., Feb., 1920, p. 84.
10. Cyriax: Jour. de Chir., Paris, Dec., 1919, 15, No. 5.
11. Lowman, Amer. Jour. Orth. Surg., Dec., 1918.
12. Mills: Amer. Encyclop. Ophthal., Vol. XVI, "Spinal Affections, Eye symptoms in," p. 12071.

A GROUP STUDY OF 300 CASES OF ARTHRITIS.*

By MAYNARD C. HARDING, M. D., San Diego, Calif.

The work here reported was done at the U. S. A. Base Hospital, Camp Lewis, Washington, extending over a period of sixteen months. It was all carried out under my personal supervision as chief of the section of orthopedic surgery, to which division it properly belonged, since all joint disabilities had to be passed upon by the orthopedist. It was participated in by a large number of medical officers representing the various specialties, to whom the credit is hereby given. Especially I wish to mention Dr. Dudley Fulton, who, in the capacity of chief of the Medical Service, and later as Commanding Officer, did so much to help correlate the various services of the hospital in this work; and also Dr. Carl J. Snitkay, whose energy and ability overcame the practical difficulties of its establishment; and likewise Dr. Alva F. Maine, who brought the therapeutic department into being.

The need of a special arthritis ward in a hospital of 1500 or more patients was apparent from the first. There is a curious mental attitude in the medical profession toward anything called rheumatism. Whether it is a sort of reflection of the well-known saying of the laity: that a man with rheumatism or seasickness never gets any sympathy; or whether there is a real feeling of helplessness on the part of the doctor in doing anything but let the disease run its course; or whether the radical change in supposed etiology from uricacidosis to focal infection has so unseated our grasp of the subject that we hesitate to take hold of a case with vigor and confidence, and pursue any adequate line of treatment; or whether it is a combination of all these factors, I do not know. But I do know that when the arthritis ward was opened, culling 64 of these cases from other wards, not one had had a reasonably complete search for the underlying cause. I hasten to plead guilty of furnishing several of those cases from my own orthopedic wards.

The conception of the disease on which was built the group was one that my experience here recounted has but served to deepen. In young adults arthritis is an infectious disease, systemic in character, with local manifestations, in which joint trauma plays a large part—often the most important part.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

To correlate the work of a large group of men, each busy with the tasks of his own department, and to secure written reports of their findings, proved a difficult matter. The work had to be so arranged that it proceeded automatically, with the simple aid of a corps man, and kept speeded up to take the shortest possible time. We were able to maintain an average of four days for a complete study after the plan was working well, though many cases could not be "put through the mill" in less than a week.

The outline of study of each case able to make the rounds afoot or in a wheel chair was as follows: History and general examination in the ward; 24-hour urine saved.

Blood for culture, Wassermann, and cell count taken by the laboratory technician.

X-Ray of teeth, sinuses, lungs, and affected joints if chronic. In fresh acute cases the joints were not usually taken, since the findings were uniformly negative.

The sinus rentoenographic report accompanied the patient to the Nose and Throat department, where the same medical officer saw all our arthritis cases.

The dental films were sent direct to the dental officer doing our work, to which department the patient was next sent.

The genito-urinary department went exhaustively into the venereal history and made all the standard tests, using the cytoscope if any findings warranted it.

Orthopedic examinations were made in the ward.

Lung, heart, gastro-intestinal and nervous symptoms, if found, received examination by specialists in their respective lines.

Each examining officer was required to fill a proper blank with his findings and to sign the same at the time of examination. This proved to be almost the hardest thing to get done, as those of you who have had to do with army paper work well know. It was necessary to have one corps man whose duty it was to keep the records up and steer the patients from one department to another. These records were gone over by the ward surgeon and myself and the line of treatment determined.

Right here it is proper to set down our findings that you may see what the group examination disclosed in the way of focal infections. In 89% of the cases some infectious process other than that in the joints themselves was found and treated. Listed separately they are as follows:

| | |
|--|------|
| Cases in which more than one infectious process was found..... | 57% |
| Tonsils | 51% |
| Teeth | 31% |
| Prostate | 12% |
| Gonorrhoea present | 9% |
| Positive Wassermann | 4% |
| Sinus infection | 5% |
| Pyorrhoea | 3.5% |
| Tuberculosis of the lungs..... | 2% |

The blood cultures were all negative. They were stopped after 130 consecutive negatives were secured. I cannot account for this discrepancy

with the work of other observers. Our laboratory was conducted by two as reliable pathologists as the Pacific Coast boasts; and the blood was drawn at the most active stage of the disease.

The white count was so variable that it cannot be made to conform to any clinical picture. The well-known observation that rheumatics are anemic was abundantly born out, and as a consequence hematics were generously administered to most of the patients.

As to types of infection. We started in to culture all of the pathologic tissue removed, and found the usual group of streptococci—hemolyticus, non-hemolyticus and viridans. *But*—a routine examination of hundreds of throats in the hospital undertaken at the same time showed about the same proportion of streptococci present! I am not at all convinced that the particular germ present in a tooth or tonsil is necessarily the sole causative factor in the joint condition.

The urine followed typical febrile curves in acute cases, while a trace of albumen was not rare. No case of kidney trouble arose, though polyuria was often pronounced during the administration of large doses of salicylates.

From a clinical standpoint a few observations are of interest. Ninety per cent. of these men had had a previous attack. This is of importance in that they were all young men, which points to the similarity to tuberculosis in the childhood invasion of lymphatic and synovial tissues. I wish to emphasize this point strongly, for medical men do not heed as they should the lesson contained in it, which is that arthritis in the child calls for a painstaking cleaning up of all sources of infection, for he will otherwise most certainly have other attacks later in life.

Heart complications were rare, and though on the lookout for them, we did not find more than a half dozen all told. None proved fatal, or even crippling, the very worst one afterward going to France with the 91st division without breaking down.

The absence of gastro-intestinal diseases proved a surprise to every one. Not a chronic gall bladder nor appendiceal infection was found in the entire series. This, after all, is not so strange when we consider that they were picked men physically, and nearly all under 31. The chronic gall bladder would not be common at that age, while the fact that several had been operated on for an acute appendicitis in previous years somewhat qualifies my statistics.

The question of sinus infection caused much dispute. The Roentgenologist reported positive findings, with increased density, in many cases, but the most painstaking and repeated examinations by the Rhinologist failed to find inflammation in but 5%. This work was carried out by Dr. Frederick Diemer, chief of the X-Ray laboratory, and by Dr. Robert Levy, chief of the Nose and Throat section, who have here made a definite contribution to the relation of the X-Ray to the diagnosis of sinus infection. We came finally to consider it as suggestive only, except in certain unmistakable cases of massive blocking; and not to be accepted without clinical confirmation.

You may wonder somewhat at the low number of tonsil infections found—51%—as in civil practice we are accustomed to a batting average up somewhere around 1000% by even a conservative nose and throat specialist. As a matter of fact, our rhinologists were more conservative than I was and repeatedly removed tonsils at my request which they did not consider pathologic.

In a dental way nothing less serious than a root abscess was considered a probable cause. On the whole, the cleaning up of the dental conditions seemed to give more prompt relief than tonsillectomies.

The genito-urinary studies proved to be an eye-opener to all of us. About 25% of our cases came in diagnosed as gonorrheal rheumatism. The 12% of inflamed prostates, and 9% actual gonorrhea found, represent with a few exceptions the same men, and is not much above the average of the draft. The typical monarticular gonorrheal arthritis or peri-arthritis was very rare. It made up not more than 2% or 3%. The bulk of the cases having a demonstrable gonorrheal focus presented the same varied types of arthritis as the non-gonorrheal. I am much inclined to believe that medical men are too prone to diagnose gonorrheal arthritis.

Luetic arthritis proved, as expected to be, a small factor.

Based upon the above conception of the disease, we instituted a treatment outline to cover as many points as possible. The acute case was confined strictly to bed, his bowels opened with calomel, and all painful joints splinted. Chicken wire and plaster of paris formed as much a part of our armamentarium as salicylates and surgery. No part of the care of acute rheumatism is so neglected in civil practice as adequate splinting. If there were no heart complications, and the heat did not distress him, he was put in an electric cabinet and sweated daily for a few days. Thoroughly carried out, this usually gave much relief. Sodium salicylate and sodium bi-carbonate were given nearly all acute cases in the following manner:

A stock mixture containing two grains of bi-carbonate to one of salicylate was prepared. The daily dose was from 200 to 400 grains of salicylate divided into six doses, and each taken in a pint of water. The patient then had a pint bottle of water placed by his bed, which he must drink before the next dose. Many drank much more. This was never continued more than three days. Therein lies the secret of successful salicylic medication—saturate, then stop. Very few had any gastric trouble as a result. If so, they were medicated per rectum.

As soon as the acute stage was passed we overfed these men, as we did our tuberculosis patients, and gave them iron. The necessary surgery was attended to as soon as they were able, at once in chronic cases. Intravenous triple typhoid vaccine was given for the non-specific protein reaction in 17 cases. Our results in this small number were unfavorable.

The prognosis, in addition to surgery, were

given much local treatment, consisting of high temperature baking, massage, and graduated exercise.

It is at this point that the most careful judgment must be used as to when to abandon a policy of rest and protection for an inflamed joint surface; and to introduce active motion and use to clear up periarticular congestion and thickening. Permanent roughening may be caused by too early use, while stiffness and atrophy result from too long disuse. A safe guide is the production of pain on voluntary motion. A patient will rarely damage his joint by activity which is not distinctly painful. On the other hand, to force a painful joint by passive motion is only to invite more trouble.

A word as to the Alpine sun lamps now so widely advertised. Having little sunshine in Washington, we made extensive use of them as a substitute. I am convinced that in joint diseases their value is solely as a counter irritant. As such they should be used to produce a blister of desired size and location. The skin should be prepared surgically, the burning done—which is painless—and a sterile dressing applied. We often raised blisters of 20 square inches on the knee with excellent therapeutic results. I cannot see in them a substitute for California sunlight.

Now there is nothing new in all this routine of treatment, but we tried to do all the helpful things we could in each case. There is a vast difference in trying first one, then another remedy, or in doing all of them simultaneously. I believe our results justified our attitude.

The average stay in the ward was 42 days. Of the acute cases 79% were discharged to full duty as cured, 21% as improved. The chronic cases, of course, were not so favorable; 45% were classified as cured and returned to full duty; 40% were improved. Of the improved class many were discharged on S. C. D., while others went into classified service. No case failed to improve. The majority of these chronic cases should never have been inducted into service.

CONCLUSIONS:

1. The older classifications were of little value in handling these cases. We should discard them and make a fresh start on a broader basis than that of dead pathology.
2. Many things are loosely diagnosed as arthritis, fully 25% of our cases entering with that diagnosis were something else.
3. Treatment based upon the etiology of infection gives the best results.
4. From the standpoint of arthritis sudden and brilliant cures from the removal of an infectious process are not common, although they do occur. Remember that, in addition to the tonsils, teeth, etc., the lymphatic chain and the joints themselves are independent infections.
5. It is a systemic disease, and calls for every aid in our power to overcome it and to restore the highest possible degree of general health, at the same time carefully safeguarding the mechanical function of the joint itself.

ETIOLOGY OF 150 CASES OF BRONCHIAL ASTHMA.*

By GEORGE PINESS, M. D., Los Angeles, Calif.

The growing interest that has manifested itself in the past five years in the study of the treatment and etiology of bronchial asthma, has prompted the writer to give you this study and personal observations of 150 cases of bronchial asthma. The purpose of this present work has been to determine the etiological factors in the cases above mentioned and form the basis of this report.

The patients studied were studied at the clinics of the Los Angeles County Hospital, Kasper Cohn Hospital and in the writer's private practice. Careful physical examination were made of each patient to rule out any organic reason that might exist in the heart, lung, nose, throat, and accessory sinuses before they were subjected to the skin tests.

Meltzer¹ pointed out that asthma is a clinical manifestation of anaphylaxis, that the patient with asthma, is sensitized to the various foreign proteins, which are either inspired or ingested from without the body, or absorbed from a focus of infection or suppuration within the body. Therefore I believe, as do other writers, that we have two definite etiological types of asthma, an endogenous and exogenous.

SCOPE OF WORK.

The cases to be reported are 150 in all. Both sexes, all ages, and both adults as well as infants. The routine study of each individual case, was as follows: (1) A careful history was obtained, particular attention being paid to the family history, as to heredity, age of onset, season and location at time of onset, surroundings, occupation, whether or not patient has had such skin conditions as eczema, urticaria, or psoriasis, and perhaps an angio-neurotic oedema. (2) Careful physical examination of the nose, throat, and accessory sinuses by a competent laryngologist, as well as a thorough examination of the chest, abdomen, etc. (3) Laboratory studies of the sputum were made in all cases that did not respond to the skin tests and were also made in cases responding to the skin tests which were positive to the bacterial proteins to confirm the skin reactions. (4) Skin tests were made in all of the cases studied. The extra-dermal or scratch test was the technique employed. The proteins used in the routine work were: The various animal hairs, animal serums, feathers, wool, foods, bacteria and the pollens that were available. The tests were invariably performed on the flexor-surface of the forearm, always commencing at the wrist, and going up to the elbow. Rackenman² uses the intra-dermal method usually on the arm (flexor-surface). This method, I believe to be too delicate and sensitive if not erratic.

The technique employed by the writer is as follows: Small number of cuts, each about one eighth of an inch in length, are made on the flexor surface of the forearm, using a sharp scalpel, penetrating the skin, but not deep enough to draw

blood. On each cut is placed one drop of an 1/10 solution of Sodium Hydrate and then a small amount of protein added. The former solution dissolves the protein and permits its absorption through the abrasion. At the end of a half hour the protein is washed off and reactions are noted. If positive the reaction consists of a raised, white urticarial weal or elevation surrounding the cut. The smallest reaction to be called positive must be at least one half cm. in diameter and any smaller reaction should be considered doubtful. In making the tests it is a rule of the writer to always leave one cut which is not treated with the protein using it as a control and by which the other cuts containing are contracted. Instead of using the powder where patients are to be tested to pollens, the author uses a 1/100 solution of the protein dissolved in a 13% absolute ethyl alcohol in normal saline solution, adding a few drops of phenol which acts as a preservative and keeps the solution sterile.

The predisposing factors considered were, age of onset, sex, occupation, climate, skin diseases, heredity, season. The author was able to elicit a family history on one or both sides in forty-one or 27 4/10% of the patients, while Cook² was able to elicit a family history from one or both sides in 48% of his cases. This variation can be explained very readily in that the latter author has studied almost three times as many cases as the writer of this paper.

Occupation has a definite bearing on the etiology in some of the cases, as has been shown by Walker³ and in the author's own series, particularly in bakers, who are sensitive to wheat, tailors sensitive to wool, hostlers sensitive to horse hair.

In the 150 cases studied there were 83 or 55 4/10 males, and 67 or 44 6/10 females, showing that the sexes are about equally predisposed. Walker³ are quite similar as are those of other writers.

Climate, as a pre-disposing factor is of very little importance, excepting in the cases sensitive to pollen and the bronchitic asthmatics, who are sensitive to bacteria. The latter type of cases usually being found in moist, damp atmospheres.

Skin conditions such as the eczemas, urticarias, angio-neurotic oedemas, are not only pre-disposing factors, but have a definite inter-relationship between themselves and asthma, in that usually the exciting cause of the former is similar to that of the latter. Blackfan, K. D.,¹¹ states that a history of eczema in early life is nearly always a rule with patients who are unable to take different foods on account of their asthma.

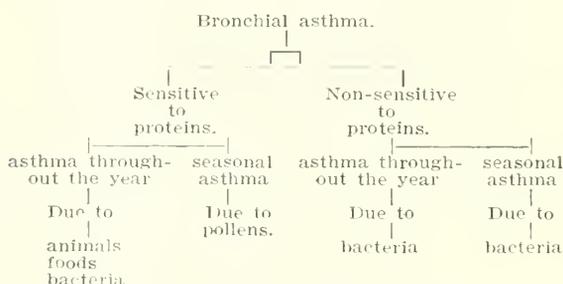
Time and season, when a patient begins to have asthma and the season when attacks are most frequent are very important factors to be considered in determining the etiology, but may mislead one as it is not infrequent for cases that from the history appear to be of the pollen type and upon study will be found to be of the bacterial type, or both types. Cases occurring during the summer months are usually of the pollen group, and those during the winter months,

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

are as a rule of the bacterial group. Those having asthma throughout the year may belong to one of several groups, which can be best explained through the classification of Walker⁵.

Age: All ages are liable, as proven in Walker's⁵ study of 600 cases, and the work of other writers, as well as in the author's own series of cases, a table of which is presented below, the study of which will prove the contention that all ages are liable. In this series, the youngest individual study relative to the onset was 18 months, the oldest being 72 years. Walker⁶ states that of the eleven patients who became sensitive after the age of forty, occupation was the pre-disposing factor in over 50% of the cases. This is of particular interest in this series as one of the cases in those who became sensitive past forty was due to an animal (chicken feathers) and at the time had had a chicken farm. The relationship of age of onset and the sensitization to various types of protein are very important, as is most common for individuals who begin to have their asthma under the age of two years to be sensitive to foods and animals. Between two and five and five and ten foods and animals are again the most frequent offenders. Bacterial proteins become more frequent as the cause of the factor from the age of twelve to past forty. Since we are discussing age it might be well to mention at this time that multiple sensitization is not an infrequent occurrence, particularly amongst those patients who begin to have asthma during infancy and is quite frequent among those beginning between the ages of two and five and five and ten. After these ages the multiple sensitization is not the rule. You will note from the table given below of the 150 cases studied seventy-six or 50.6% were sensitive to various proteins, but that the number of positive reactions were far in excess of the number of cases studied, there being in all one hundred and thirty-four positive skin reactions, which bears out the contention that many patients have multiple sensitization and that they should be tested to all the proteins of all the groups that one has at hand.

The classifications as given by various authors and two of which I wish to present to you at this time are those of Walker⁶ and Cooke⁷. Walker's classification is as follows:



The above classification is very clear and simple, but the writer feels that there should be added to this classification another group belonging to the Non-sensitive group, that is the class of cases who have Endocrine dysfunction.

The classification of Cooke,⁷ is as follows:

- I. Anaphylactic: Protein absorption from
 1. Respiratory.
 - (a) animal emanations.
 - (b) vegetable emanations.
 2. Intestinal tract.
 - (a) foods.
 3. Foci of infection.
 4. (a) subcutaneous tissue or intravenous injection.
 - (b) therapeutic serums.
- II. Non-anaphylactic.
 - Thymus enlargement.
 - (a) tuberculosis,
 - (b) renal,
 - (c) cardiac,
 - (d) bronchial infections,
 - (a) acute,
 - (b) chronic,
 - (e) reflex broncho spasms.

The above classification in the first part covers the ground very thoroughly, but in the non-anaphylactic group the writer feels as most workers do, that renal and cardiac disease as well as reflex broncho spasms are not truly Bronchial Asthas, but may be mere complications or it may be that the asthma so called, present, is simply a dyspnoea of the inspiratory type, due to a toxemia present, not being a true broncho spasm, as can be clearly demonstrated by the X-ray during an attack. The writer does agree with the older writers that it is possible for one suffering with cardiac and renal diseases to have asthma, but when it does occur it does so as a separate and distinct clinical entity, with some above mentioned and if tested to the various proteins, the patient would probably react to one or more of them, depending upon other factors mentioned in other parts of this paper.

In the author's series of 150 cases, 71 or 47% responded to the various protein reactions, while Walker⁷ in his series of 400 cases reported 191 or 48% positive to proteins. You will note from the table above that the great majority that did not respond to the skin tests, gave a history of onset after 35 years of age and those giving positive reactions dated their onset from early life up to and including 30 years of age.

It was not uncommon in this study to find other etiological factor, other than the diseases multiple sensitizations, and from this one can readily see that it requires an almost unlimited number of proteins that patients should be tested to, before one can say that the case is non-sensitive, but for practical purposes the average practitioner can, at least, test the patient with the common proteins such as: animal hair, the foods, such as milk, cereals, fish, and meats, also the bacterial proteins. The above can be readily obtained from the various commercial houses which make and market them; should the protein not be available the crude substance can be used and made in the following manner: The animal hairs can be extracted in a twelve per cent. solution of ethyl alcohol and the bacteria made into a weak alkaline solution and the foods used as

| Age of Onset of Asthma | Number of Cases | Per Cent. Cases | Number Sensitive | Per Cent. Sensitive % | No. Sensitive to Protein in: | | | | |
|---------------------------|-----------------|-----------------|------------------|-----------------------|------------------------------|----------|---------|-------------|-----------|
| | | | | | Foods | Bacteria | Pollens | Animal Hair | Endocrine |
| Under 2 years..... | 15 | 10.0% | 14 | 93.0% | 7 | .. | 2 | 6 | 1 |
| Between 2 and 5 years.... | 15 | 10.0% | 8 | 53.3% | 6 | .. | .. | 4 | .. |
| “ 5 and 10 “ | 11 | 7.3% | 8 | 73.0% | 6 | 3 | 2 | 9 | 2 |
| “ 10 and 15 “ | 9 | 6.0% | 6 | 66.0% | 2 | 5 | 3 | 4 | .. |
| “ 15 and 20 “ | 12 | 8.0% | 6 | 50.0% | 2 | 2 | 5 | 2 | .. |
| “ 20 and 25 “ | 24 | 16.0% | 18 | 75.0% | 3 | 2 | 9 | 1 | 1 |
| “ 25 and 30 “ | 20 | 13.3% | 10 | 50.0% | 2 | 1 | 4 | 1 | .. |
| “ 30 and 35 “ | 15 | 10.0% | 4 | 26.6% | 3 | .. | 2 | 2 | .. |
| “ 35 and 40 “ | 9 | 6.0% | 2 | 22.0% | 2 | .. | 2 | 1 | .. |
| “ 40 and 45 “ | 7 | 4.6% | .. | ..... | .. | .. | .. | .. | .. |
| “ 45 and 50 “ | 5 | 3.3% | 1 | 20.0% | .. | .. | .. | 1 | .. |
| “ 50 and 55 “ | 6 | 4.0% | .. | ..... | .. | .. | .. | .. | .. |
| “ 55 and 60 “ | 2 | 1.3% | 1 | 50.0% | .. | .. | .. | 1 | .. |
| Over 60 years..... | 1 | 6.6% | .. | ..... | .. | .. | .. | .. | .. |
| Total..... | 150 | | 78 | | 33 | 15 | 29 | 27 | 4 |

such; example egg albumin extracted in water.

With the exception of bacteria, negative skin tests with protein rule out these proteins, as a cause of asthma.⁸ Patients frequently give a positive test to some protein, but at that particular time the protein may not be the cause of the asthma, however, at some previous or future time has been or will be the cause of the asthma, therefore it should be eliminated.

An analysis of the cases studied by the writer classified in groups, as per the classification above mentioned, were as follows:

1. Animal group: 29 or 19.3% were sensitive to animal emanations. This type have asthma throughout the year. Ten were sensitive to horse hair dander, five cat hair, five to chicken feathers, one of which was a doctor, whose age at time of onset was 49 years and the only one in this series who gave a positive skin reaction at that age. This is quite unusual, as reactions are rare when the age of onset is as late as his, which can readily be seen when Walker in his series of 600 cases does not report a single reaction after the age of 40.⁸

There were three sensitive to dog hair, two to rabbit, one to goat hair and two to sheep wool. In this group several were sensitive to a combination of animal hairs, and it is interesting to note that most cases that were sensitive to the animal emanations gave a history of onset from two to ten years of age, and those who gave positive reactions past that age could usually be traced to occupation, such as hostlers, tailors, etc.

Eczemas are very common complication, particularly in young children, who are sensitive to foods, although it is not uncommon to see eczemas complicating asthma in adults. Blackfan, K. D.,¹¹ states that a history of eczema in early life is nearly always the rule with patients who are unable to take different foods on account of urticaria, angio-neurotic oedema, and asthma. The writer's personal observations, in a series of 43 cases that were sensitive to foods, six cases were complicated by eczema; a peculiar coincidence being that in five of the cases the eczema disappeared when free from asthma, while in the other case the eczema disappeared, had asthma and vice versa. One case sensitive to horse hair dander was having a similar experience with this exception, that when too large a dose of horse hair extract was given, the eczema appears, this probably being an anaphylactic phenomenon. The food sensitive cases were 43 or 28.3%, while Walker⁹ in his series of 600 cases reports only 12%; this is probably due to fact that the patients studied by him were much older than the cases reported here. The chief offenders in this group were the cereal grains, mainly the wheat grains. Next in order of frequency were rice, corn, rye and barley. It was not uncommon to find multiple sensitization to the cereal proteins. Eggs came second in this group, numbering eleven in all. Of the egg, the egg white seemed to be the most frequent offender, next in order of frequency being the whole egg and then the egg yolk. Milk was not uncommon, as there were six cases sensitive to it.

All but one was sensitive to whole or lactalbumin, only one being sensitive to casein. Next in order of frequency are the fish, meats, vegetables and miscellaneous, which included nuts and fruits, etc.

The bacterial group numbered 21 or 14% of the cases studied. The bacterial proteins to which the patients were tested were: Staphylococcus pyogenus aureus, staphylococcus albus, staphylococcus citreus, streptococcus hemolyticus, streptococcus viridans, streptococcus non-hemolyticus, pneumococcus typei, micrococcus catarrhalis, and micrococcus tetragenalis. Of this group eleven were sensitive to the staphylococcus aureus alone, three were sensitive to streptococcus hemolyticus and viridans, and one was sensitive to streptococcus hemolyticus alone, one to staphylococcus albus and the remainder of this group were sensitive to more than one bacterial protein. Some of this group were sensitive to proteins other than bacterial, and the latter probably being secondary in their sensitization.

The pollen group is the most unsatisfactory of all, as California has so many pollens that it is most difficult to obtain them all. As Selfridge¹² said, "California is the dumping ground of the world for pollen," but thanks to the work of Selfridge and Hall,¹² who made a survey of the most important pollen-producing trees, shrubs and grasses, we are now able to obtain more pollen than at any previous time, and believe that it will not be difficult to obtain the necessary pollens for this work in the future. In this group there were 39 or 26% cases sensitive to pollens. This, of course, does not mean that we detected all the cases that were pollen sensitive, due to the fact that our collection of pollens is incomplete, but the writer hopes to report at some future time the results of his work after complete collection of pollens is at hand. It was noted particularly that this group had a marked tendency to multiple sensitization. The pollens which we have at hand are as follows and a number of reactions obtained were:

| | |
|-----------------------------|----|
| Ragweed (dwarf) | 12 |
| Ragweed (giant)..... | 8 |
| Bermuda grass..... | 9 |
| Golden rod..... | 3 |
| June grass..... | 5 |
| Cosmos | 2 |
| Dahlia | 1 |
| California wild walnut..... | 1 |
| Tumbleweed | 3 |
| Greasewood | 1 |
| Sage brush..... | 2 |
| Broncho grass..... | 7 |
| Salt grass | 2 |
| Pigweed | 4 |
| Wheat | 2 |
| Timothy | 4 |
| Red top..... | 2 |
| Wild oats | 1 |
| Rose | 3 |
| Willow | 2 |

The endocrine group consisted of four cases or 2.6% of the total number seen. This group besides being sensitive to other proteins gave definite

evidence of endocrine disfunction. One case was hypo-thyroid, two were hypo-pituitary, and one ovarian. The hypo-thyroid case, a child, sensitive to foods, although relieved by eliminating the offending proteins, still continued to have some difficulties. On examination this child's hair was coarse and dry, skin was dry, constipation, spaced front teeth, flat feet, and a marked hairy growth over entire body. The hypo-pituitary cases were both sensitive to animal emanations, horse hair dander. There was a lack of pubic hair, fatty pads over shoulders and buttocks, fondness for sugars, spaced teeth, and sugar-tolerance test gave evidence of a low sugar tolerance. The third group, or ovarian disfunction, was a young woman, 18 years of age, sensitive to dog hair, with a history of attacks of asthma several days prior to onset of menstruation. This case was not relieved by treatment with dog hair extract, but upon the addition of corpus-luteum, five grains given three times daily, at the same time continuing treatment with the dog hair, was relieved of her asthma and has been free for a period of eight months. The observations on the above mentioned cases lead the writer to believe that there is a definite relationship between the endocrine secretions and asthma, probably due to a loss of balance between the various secretions, which may have some effect on the absorption of proteins.

Although the author's group contained only three types of endocrine disfunction, it is possible that there may be disfunction of any of the other endocrine glands.

CONCLUSIONS.

- (1). Asthma is a clinical manifestation produced by proteins sensitization.
- (2). It is important that careful physical and laboratory examinations should be made before the diagnosis is established.
- (3). Most painstaking, careful history of the patient is a necessity, as it establishes the etiological factor in many cases.
- (4). Heredity is an important predisposing but not exciting factor in from 25 to 50% of the cases.
- (5). Climate has very little bearing on the etiology excepting in the pollen and asthmatic bronchitis types.
- (6). Eczema, urticaria, and anio-neurotic oedema have definite relationship to the protein sensitive asthmatics.
- (7). That it is possible with cutaneous tests to determine the etiology of bronchial asthma in 47 to 50% of cases.
- (8). Multiple sensitization is common particularly in the food and pollen groups. Sensitization¹⁴ to one protein in early life is apt to be followed by sensitization to other proteins, early in life and vice versa.
- (9). Renal and cardiac diseases may complicate asthma, but the latter is a distinct, and separate condition, not dependent upon the former.
- (10). Patients with a history of onset past 35 years of age rarely give positive skin reactions, but serum of agglutination tests to Staphylococcus

pyogenus aureus occasionally give positive reaction and determine the cause.

(11). There is no fixed relationship¹³ between cutaneous reaction, serum agglutination tests and isolation of staphylococcus aureus from sputum or nasal secretions.

(12). The relationship between the age of onset of asthma and sensitization of different types of protein are very important, but that all ages are liable.

(13). Until a complete collection of California pollens is available, and cutaneous tests made with all of them one will be unable to definitely state that all the offending pollens have been discovered.

(14). Endocrine disfunction bears a prominent part in the etiology of Asthma, particularly the younger individuals, and should be borne in mind where patient does not respond to specific protein treatment.

Bibliography.

1. Meltzer, S. J., Journal Medical Association, 1910-55-1021.
2. Cooke, R. A., and Vander Veer, Journal of Immunology, 1916-1-201.
3. Rackman, F. M., Archives of Internal Medicine, October, 1918.
4. Walker, I. C., Oxford Press, 1919.
5. Walker, I. C., Canadian Medical Assoc. Journal, February, 1919.
6. Cooke, R. A., Clinics of North America, November, 1917.
7. Walker, I. C., Boston Medical and Surgical Journ., August, 1918.
8. Walker, I. C., Clinics of North America, January, 1918.
9. Walker, I. C., Oxford Press, VI, Volume I, Part II.
10. Walker, I. C., Boston Medical and Surgical Journals, 1916-CLXXIV-223.
11. Blackfan, K. D., American Journal and Diseases of Children, 1916-XI-441.
12. Selfridge, G., California State Journal, April and May, 1919.
13. Walker, I. C., Journal of Medical Research, May, 1917.
14. Walker, I. C., Boston Medical and Surgical Journal, August 21, 1918.

A STUDY OF NASAL CONDITIONS OCCURRING IN BRONCHIAL ASTHMA.*

By SIMON JESBERG, M. D., Los Angeles.

It is perhaps well to clearly define the type of asthma under discussion, as the term asthma is so often loosely applied to various conditions causing dyspnea that even today confusion sometimes exists as to the exact condition meant.

By bronchial asthma, or spasmodic asthma, is meant a condition in which there are paroxysmal attacks of dyspnea occurring at more or less irregular intervals in certain individuals, during which the alveoli of the lungs are over-distended with air due to obstruction of the smaller bronchioles. There is marked expiratory difficulty, inspiration is short and expiration much prolonged with loud piping rales.

Of the various theories of the mechanism causing the obstruction, a tonic spasm of the circular musculature of the smaller bronchioles seems the most tenable. The condition is to be clearly differentiated from all other forms of dyspnea or respiratory embarrassment, which are often termed asthma, such as cardiac and renal asthma or any

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

pulmonary or tracheo-bronchial disease or obstruction in which there is dyspnea.

It is the purpose of this paper to present the role played by the nose in this disease, a consideration which cannot be undertaken without referring to literature and to some extent to the various theories of the etiology of asthma.

The writer was profoundly impressed some six years ago by observing a patient who was suffering from bronchial asthma. His asthma was so severe that he had had almost constant dyspnea for two years to such an extent that he could sleep only in the sitting position with his head supported on a table before him. At the Brooklyn Eye and Ear Hospital nasal examination revealed a chronic hyperplastic ethmoiditis on each side. Ethmoidal exenteration was performed after Mosher's method. The dyspnea disappeared as if by magic and that night for the first time in two years he was able to sleep in a recumbent position. This patient was free from dyspnea during convalescence of his nasal operation, after which he was lost sight of.

It was this striking phenomenon that particularly aroused my interest in the subject of nasal conditions in asthma. The above experience is not particularly unique, as similar instances have occurred in the practices of most rhinologists and indeed we have had occasion since to observe this phenomenon repeatedly. Incidentally, we have also observed occasionally in asthmatics having a nasal operation, that an attack of asthma of unusual severity followed the operation. But we have never observed asthmatic attacks following nasal operations in those who were not asthmatic before.

It has been long known that nasal disease frequently co-exists with bronchial asthma and that the two conditions are in some way related.

Following Volotini's classical observation in 1871 of the disappearance of asthma in a patient after removal of nasal Polypi and the reappearance of asthma on the return of Polypi, with permanent relief from asthma after the final cure of the nasal condition, an enthusiastic crusade of nasal operations against bronchial asthma was inaugurated, which too often proved unsuccessful in the permanent relief from asthma.

(1) Dixon and Brodie in 1903 published experiments which showed that in animals a reflex spasm of the musculature of the smaller bronchioles occurred on irritation of sensory nerves having ganglionic connections with the vagus. This was more difficult to produce when the animal was not decerebrated. The sensory nerve endings most readily initiating the reflex were found, in their experiments, to be located in the nasal mucosa and particularly the superior and posterior part of the nasal septum. Conclusions were that a reflex spasmodic contraction of the smaller bronchioles occurred as a result of nasal irritation which reflex is inhibited by the higher centers.

This explained at once two theories concerned with the etiology of asthma, namely: Nasal irritation and neurosis and satisfied those who held to the theory of nasal origin of the disease as

well as those who looked upon asthma as being primarily due to some faulty function of the higher co-ordinating centers.

(2) Meltzer in 1910 pointed out that similar conditions are present in anaphylaxis and asthma and clinically both respond favorably to adrenalin and atropin administration.

For a long time it had been noted that certain individuals developed asthmatic attacks when exposed to the emanations from certain animals or after eating certain food.

(3) Walker, in a series of 400 cases of bronchial asthma, found that 48% were sensitive to some foreign protein as demonstrated by cutaneous tests. Other workers along the same lines have found approximately 50% sensitive to some protein. Either there are other factors concerned in the etiology of asthma; or, if asthma is an allergic reaction, there are other substances not yet discovered which act as the anaphylactic agent.

(4) Grant, in 107 cases of asthma, found nasal pathology marked 68 times; quite slight 31 times; 1 uncertain; and 7 normal. In a series of 85 cases of asthma, examined by the writer with particular reference to nasal pathology, 71 cases were found to show well established nasal changes. In these 71 cases nearly all showed signs of chronic hyperplastic ethmoiditis ranging from considerable hyperplasia of the ethmoidal operculum to complete polypoid degeneration. Some also had, in addition, antral empyema. Deviations of the nasal septum were not considered as pathological changes.

Of nine cases of this series, nasal operations were performed as indicated; one was completely relieved of asthma over the period of two years under observation. This was a case of purulent infection of the ethmoids and sphenoids. Operation was ethmoidal exenteration and opening of sphenoids. Five were markedly relieved, that is, the asthmatic attacks occurred at less frequent intervals and were comparatively light. Of these, two had nasal drainage facilitated by submucous resection of the septum; one ethmoidal exenteration and two antrum operations. One case was not at all improved. This case had bilateral ethmoiditis with asthma of thirty years' duration. Operation was performed only on one side and patient refused further treatment.

(5) J. M. Brown reported on 27 cases of asthma with co-existing ethmoiditis on whom ethmoidal exenteration was performed. Six were completely relieved of asthma; 12 were decidedly improved; 7 were very slightly improved, and 2 not benefited.

In all asthmatics there is an excess of nasal secretion and often a retention of mucus in the various sinuses. The idea occurred that the combined protein of the mucus, mucin, might be split up and act as a foreign protein in the production of anaphylaxis. It was difficult to find bacteria-free mucus, but finally an asthmatic patient was found in whom both antra were filled with clear mucus, due to retention caused by occlusion of the ostia by hyperplasia of the ethmoidal opercula. This mucus was aspirated under aseptic conditions and failed to give a growth on culture media on three attempts.

Using a solution of the precipitated mucin in varying dilutions, cutaneous tests were made on 13 asthmatics and 5 people not having asthma. These tests were all negative, except for one slight reaction in the donor and one slight reaction in a normal person.

The fact that abnormal nasal conditions are so frequently present in asthma and that nasal disease is a factor in the etiology of asthma, is a view that is not at variance at all with the anaphylactic theory. Vasomotor disturbances of the nose occur as a result of toxic products in the blood, whether foreign protein from animals, bacteria, foods or plants; and also from various toxic products whether intestinal or metabolic. The chronic turgescence leads to thickening of the nasal mucosa, with blocking of the sinuses and produces nasal pathology which, due to the excessive irritability of the trigeminal nerve endings, initiates the bronchial reflex. Subsequent bacterial infection of the sinuses supplies the system with toxins which in turn frequently act as the anaphylactic agent and keep up the condition. This procedure is well illustrated by Hay Fever, which is a definite allergic reaction to specific proteins, and in which the nasal symptoms are always well marked. In chronic cases of hay fever 50% develop bronchial asthma which often is present between the seasonal attacks and which no doubt is due to the added bacterial infection subsequent to the nasal pathology.

In asthmatics of whatever origin, nasal changes occur in a large percentage of the cases, which changes are mostly a hyperplasia leading to further disease of the accessory sinuses. The hyperaesthesia of the nasal mucosa is in part due to the primary condition causing the asthma and in part due to the subsequent pathology in the nose.

Nasal pathology tends to maintain the asthma even after the primary cause has been disposed of.

The rhinologist should work in co-operation with the internist, eliminating the nasal factor of the disease in the interest of permanent cure of these sufferers.

Bibliography.

- (1) Dixon & Brodie: Transactions of The Pathological Society, London, Vol. LIV A, 1903.
- (2) Meltzer, S. J.: Journal A. M. A., 1910, Vol. 55, page 1021.
- (3) Walker, I. C.: Archives Internal Medicine, Oct. 15, 1918.
- (4) Grant, Dundas: Practitioner VXC, 1913.
- (5) Brown, J. M.: Annals of Otolaryngology and Laryngology, June, 1917.

Book Reviews

Arteriosclerosis and Hypertension. By L. M. Warfield. 265 pp.; third edition. St. Louis: C. V. Mosby Company. 1920. Price, \$4.00.

That this book has gone through three editions seems in itself to be evidence that it has supplied a certain need. Much of the present day knowledge of arteriosclerosis is given in a quite readable form that seems best adapted to the medical student. There is, however, a great deal of repetition and a distinct feeling is given that the author has spent a great deal of time in elaboration of a subject, the fundamentals of which are poorly understood. Little is given the average reader of medical literature during the last four or five years will not already have seen. The

book serves as a useful compilation of such material.
L. L.

Henry Mills Hurd, the First Superintendent of the Johns Hopkins Hospital. By Thomas Stephen Cullen. Baltimore: The Johns Hopkins Press. 1920.

This book is an account of the work and writings of Henry Mills Hurd, the first superintendent of the Johns Hopkins Hospital. It is, in the main, largely devoted to an account of his writings presented in rather serious style, too serious to appeal to the general reader. It is too bad that the chapter on his relations to the hospital staff has not been more extensively treated, as hundreds of incidents characteristic of the man have been handed down by word of mouth.

Those who know Dr. Hurd and the Johns Hopkins Hospital will find considerable of interest in this work but it will hardly appeal to those who have not had this personal relationship.

A. L. F.

Exophthalmic Goiter and its Non-Surgical Treatment. By Israel Bram. 438 pp. St. Louis: C. V. Mosby Company. 1920. Price, \$5.50.

The author is an ardent advocate of medical treatment in exophthalmic goiter and devotes 114 pages to a most complete enumeration and discussion of all the non-surgical measures found helpful in this condition. These pages, with some complete case histories and a bibliography of eight pages, constitute the book's chief value. The earlier chapters are largely reviews of literature and are made unnecessarily long by extensive quotations from other works.

Bram's own ideas of shell shock occupy some space and may be summed up in his words, ". . . in all probability the vast majority of these (shell shocked) patients are subjects of either an aberrant or a true form of Grave's disease." Expression of the extreme viewpoint that exophthalmic goiter is never a surgical condition necessarily lessens any value which the book might otherwise possess. Nevertheless, it serves the purpose of showing that there are many means, other than surgical, which can be employed to advantage in exophthalmic goiter and that non-surgical cures are not only possible but frequent with proper treatment.
J. M. R.

Medical Aspects of Mustard Gas Poisoning. By A. S. Warthin and C. V. Weller. 267 pp. Illustrated. St. Louis: C. V. Mosby Company. 1919. Price, \$7.00.

An excellent description of the anatomical findings in experimental mustard gas poisoning in animals. The cutaneous, ocular, respiratory and gastro-intestinal lesions are fully described and splendidly illustrated by gross and microphotographs. A few cases of accidental poisoning in man are also given, with the anatomical and clinical findings and a brief review of therapeutic measures.

This book, with the Yale monographs of Winternitz and Underhill, leaves little to be desired on the experimental side of the subject. An authoritative summary of what actually occurred in the A. E. F. has not yet appeared. Such a summary has been prepared for the Surgeon General's "Medical History of the War," which in combination with these experimental studies, will make available our present knowledge of the subject.
J. O.

Diabetic Manual. By Elliott P. Joslin. 191 pp. Illustrated. Second edition. Philadelphia: Lea & Febiger. 1919. Price, \$1.75.

This little book serves as an introduction to the subject of diabetes for both physician and patient. To the former it should stimulate interest in a fascinating disease the modern treatment of which

forms one of the most interesting and satisfactory chapters in modern scientific medicine. To the intelligent well-to-do patient it should give much valuable information which makes for co-operation with the physician and added interest in the results of treatment. One may well question, however, whether the average diabetic will find interest or time for its perusal or study. Estimation of blood sugar has recently become of such importance in the treatment of diabetes that it seems safer to keep in fairly close touch with the patient than to allow him the false security of a negative urine examination done by himself. For the large army of uncultured diabetics to whom this book is available treatment must and can be made successful by a system of approximate diets and occasional blood sugar determinations.

L. L.

Medical Clinics of North America. Volume 4, Number 2 (September). Octavo of 282 pp. Published bi-monthly. W. B. Saunders Company. 1920. Price, per year, \$12.00.

I. M. Cannon: Medical-social clinic. P. D. White and W. D. Reid: Diagnosis of mitral stenosis. Stanley Cobb: Spastic paralysis in children. Maynard Ladd: Vomiting as a symptom in children. E. H. Nichols: Suggestions regarding early diagnosis of acute appendicitis. W. H. Robey, Jr.: Aneurysm of descending aorta. E. A. Locke: Empyema complicating pneumonia. F. W. White: Modern examination of stomach. W. R. Ohler: Renal function tests. M. J. English: A typical case of pneumonia. A. A. Horner: Encephalitis. H. A. Nissen: Cirrhosis of liver showing jaundice and ascites. F. B. Berry: Lobar pneumonia. J. L. Morse: Constipation and eczema in infant from excess of fat in modified milk. L. W. Hill: Congenital atelectasis. Bronchial tetany. E. T. Wyman: Two cases of acquired heart disease in childhood. K. G. Percy: Chronic intestinal indigestion from starch showing indican reaction. J. I. Grover: Enuresis. P. H. Sylvester: Case for diagnosis.

Manual of Psychiatry. By A. J. Rosanoff. 5th ed. New York: John Wiley and Sons. 1920.

The effects of the world war on the field of psychiatry are considered. It may be stated without hesitation that the student or practitioner may find in this book, information on any phase of psychiatry be it a definition of a symptom or psychoses, the technique of a biological test, or a list of words for association tests.

Of especial interest to the reviewer was the chapter which considers the practice of extramural psychiatry. The author calls attention to the survey made under the direction of the National Committee for Mental Hygiene, in Nassau County, New York. 1.37% of the total population were found to be mentally abnormal; .82% were in need of institutional treatment, but only about one-third of these were in hospitals. The psychiatric work on the remaining two-thirds must be looked after by the extramural psychiatrist. Physicians must aid in the solution of the problems connected with retardation in school, sex immorality, criminal tendency, dependency, inebriety and social maladjustments.

The consideration of psychiatry in general, of special psychiatry and of diagnostic procedures is clear, definite, careful and, in addition, the reading is interesting and enjoyable.

J. C.

Industrial Nursing. By F. S. Wright. 179 pp. New York: Macmillan Company. 1919. Price, \$2.00.

This is a very concise, well written book of great interest to physicians, nurses and employers. It describes the qualifications and training needed by the nurse who desires to take up this branch of her profession which is an independent branch

differing in a certain degree from public health nursing. The nurse with a predilection for surgery has a far better opportunity for practice in industrial nursing than she would have in other fields.

This book defines the attitude of the nurse to her employer, to the physician with whom she is associated as well as to the patient. It very clearly demonstrates the peculiar type of tact necessary to the nurse who desires to make a success in this line of work. It discusses the equipment of a first aid room, its management, etc. The chapter devoted to the follow-up visits of the nurse and how the mutual understanding thus acquired between her and the patient aid in the co-operation between the employer and employed is an interesting one.

The industrial nursing center in manufacturing towns with baby welfare service are discussed as well as the food question in industrial plants.

M. C.

Medical Clinics of North America. Volume IV, Number I (New York Number, July 1920). By New York Internists. Octavo of 370 pages, with 44 illustrations. Philadelphia and London: 1920. Issued serially, one volume every other month. Paper, \$12.00; cloth, \$16.00 net. Consisting of six numbers per clinic year.

N. B. Foster: Nephritis. Harlow Brooks: Complications and sequelae of influenza and their management. S. W. Bandler: Puberty and climacterium. H. Wessler: Diagnosis of encapsulated pleural effusions. Cary Eggleston: Treatment of advanced heart failure. A. A. Epstein: Clinical types of chronic parenchymatous nephritis. W. W. Herrick: Some phases of circulatory disturbances of pregnancy. R. L. Cecil: Prevention and serum treatment of lobar pneumonia. H. O. Mosenthal: Renal function as measured by elimination of fluids, salts and nitrogen, and the specific gravity of urine. W. M. Kraus: Neurologic causes and effects of diabetes mellitus and their treatment. H. E. Marks: Clinical determination of venous and capillary pressures. E. P. Boas: Interpretation of high blood-pressure readings. Louis Bauman: Two cases illustrating the clinical significance of urobilin. B. B. Crohn: Early abdominal symptoms of myocardial insufficiency. S. J. Nilson: Diet in eczema. S. Neuhof: Auricular fibrillation. W. F. Macklin: Prevalence of heterophoria and its influence upon general health. Max Kahn: Clinical significance of acidosis. M. B. Rosenbluth: Glandular fever.

Surgical Clinics of Chicago. Volume 4, Number 4 (August, 1920). 215 pp. 80 Illustrations. Published bi-monthly. W. B. Saunders Company. 1920. Price, per year, \$12.00.

D. N. Eisendrath: Anatomic varieties of prostatic hypertrophy. Cary Culbertson: Management of general pelvic peritonitis. G. E. Shambaugh: Deafness improved by using artificial eardrums. Congenital deaf-mutism. Labyrinthine deafness with diplacusis. Labyrinthine deafness with some unusual features. C. A. Parker: Progressive flexion deformity of the fingers of muscular origin. Treatment of bow-legs and knock-knees. A. J. Ochsner: Endothelioma of the brain. G. L. McWhorter: Advantage of elevated double inclined plane in treatment of fracture of lower third of the femur. A. B. Kanavel: Tumors of the face. Hugh McKenna: Arthroplasty on the hip. Neuroma of external popliteal nerve; resection; end-to-end anastomosis. Hugh McKenna and G. W. Hall: Extramedullary spinal tumor. A. D. Bevan: Splenectomy. Pilonidal cyst. X-Ray burn of the anus. Postoperative ventral hernia. Demonstration of three abdominal cases. Dr. Gatewood: Papillary cystadenoma of breast of child. Acute pancreatitis. Tuberculosis of the appendix. E. L. Moorhead: Fractured ribs, emphysema, posterior dislocation of right hip-

joint. Obstruction of sigmoid with a palpable abdominal mass. Undescended testicle: Inguinal hernia. Gustav Kolischer and J. S. Eisenstaedt: Papilloma of bladder. Muscle-splitting incision for exposure of kidney. D. B. Phemister: Ankylosis of jaw following rheumatism: Arthroplasty. R. L. Moodie: Use of cautery among meolithic and later primitive peoples. R. H. Herbst: Unusually large prostate gland. Ulcer of bladder. A. H. Montgomery: Two cases of muscle injury.

Diseases of the Chest and the Principles of Physical Diagnosis, by George W. Norris, M. D., Assistant Professor of Medicine in the University of Pennsylvania, and Henry R. M. Landis, M. D., Assistant Professor of Medicine in the University of Pennsylvania, with a chapter on **Electrocardiograph in Heart Disease**, by Edward Krumbhaar, Ph. M. D., Assistant Professor of Research Medicine in the University of Pennsylvania. Second edition; thoroughly revised. Octavo. Volume of 844 pages with 433 illustrations. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, \$8.00 net.

Norris and Landis, in the second edition of their excellent book on "Diagnosis of Chest Conditions," have given the profession an enlarged and improved work. It has been brought right up to date through the addition of descriptions on pulmonary conditions produced by the recent great epidemics such as streptococcus empyema. The authors discuss chronic inflammatory conditions of the lungs of uncertain etiology on two pages. We are glad to see so important a subject discussed and believe that more space should be devoted to it. Under this heading we should like also to find a discussion of a fairly numerous group of cases which for want of a better name we call non-tuberculosis.

Parts one and two devoted to examinations of the lungs and of the circulatory system are arranged practically the same as in the first edition and remarkable for their detail. No possible physical sign or symptom of pulmonary or circulatory disease is omitted. These chapters are numerous and beautifully illustrated, some illustrations being the usual standard ones, some original with the authors. In fact, the outstanding merit of the entire volume lies in the clarity of exposition supported by appropriate photographs and drawings.

The same detail is carried out in the chapters devoted to special diseases. All the newer diagnostic methods on asthma, particularly the theories of Walker, Rackemann, and Cooke, receive exhaustive mention. In fact, wherever one turns, whether to the chapters on physical diagnosis or those on special diseases, one finds the newest theories and facts and is impressed with the knowledge that this second edition is really revised and in many places rewritten.

This review would be incomplete without a special and commendatory mention of Krumbhaar's excellent chapters on the electrocardiograph.

W. C. V.

Gynoplactic Technology. By Arnold Sturmdorf. 334 pp. Illustrated. Philadelphia: F. A. Davis Company. 1919.

This book is for the most part devoted to plastic operations of a gynecological character and the ground covered ranges from a general discussion of the subject, tracheloplasty, chronic endometritis and repair of the lacerated perineum and related conditions to fistulae, malformations of the vagina, vulva and bladder. Whatever opinions one may hold regarding the views expressed and developed by the author it must be conceded that his discussions are not only timely and suggestive,

but generally stimulating, sometimes original and always interesting. This is no place to discuss the merits of the author's views; suffice it to say that the argument is essentially a protest against prevailing conceptions regarding the pathology of certain gynecological disorders and against certain operative procedures practiced for their cure.

The interest of most readers will undoubtedly be aroused by the section on tears of the cervix and endocervicitis, and that on perineorrhaphy both of which subjects are rather extensively discussed. The author maintains that cervical tears are in themselves generally of little symptomatic importance but that the "fundamental dominant that establishes the morbidity of any cervical lesion is the incidence of infection." And such infection ultimately eventuates in a symptom-complex—chronic endocervicitis—which alone constitutes the basis of the symptomatology and gives the indications and direction of the operative treatment. Trachelorrhaphy and cervical amputation are discarded by the author as inefficient and harmful procedures in lieu of which he practices an endocervical mucosa from the external to the internal os, with preservation of its muscular structure with accurate re-lining of the denuded canal by a cylindrical cuff of its vaginal sheath—I do not claim an ideal restitution to the normal in all cases. So perfectly a balanced mechanism as the uterus, when once deranged, can not be perfectly restored by surgery. But I may contend that the procedure here advocated obviates in the greatest number of cases the detailed shortcomings in the prevailing tracheloplastic methods and results." The same operation is also practiced with apparently good results, in the author's hands, for sterility of cervical origin.

The piece de resistance is unquestionably the section on perineorrhaphy which includes rather full discussions of the mechanism of intrapelvic visceral support, the levator and muscle, pelvic fascia, and levator myorrhaphy. "The keynote in the clinical significance and surgical indications of perineal lacerations is the loss of gynecic support, and the study of its function in the control of intra-abdominal pressure. Concisely stated the levator ani diminishes the force of intra-abdominal pressure upon the pelvic contents by deflecting the direction of that pressure, augments the resistance to the pressure by closing the uterovaginal angle, and obstructs the pelvic outlet against the pressure by compressing the vaginal canal." With this in mind the author proceeds to describe an operation which he believes results in the restitution of anatomic relations as to restore as far as possible physiological as well as mechanical support to the pelvic contents.

To sum up, it may be said that here we have an unusual book of considerable merit built of an observing experience, critical reflection and deep convictions, well worth the reading by those interested in the problems of which it treats. The novelty of presentation is both refreshing and suggestive and the directness and clearness of style compel attention. A. J. L.

El Retiro, The New School for Girls

By MIRIAM VAN WATERS, Superintendent

One of the most interesting social experiments ever undertaken is El Retiro, the new school for girls, established in August, 1919, by the board of supervisors of Los Angeles county. The aim of the new school is to re-educate young girls who are wards of the juvenile court. It is perhaps the first instance in this country where a county

institution has been devoted to preventive and constructive work in the field of moral hygiene.

ORGANIZATION

The legal basis of El Retiro is found in section 22 of the California Juvenile Court Law, which provides for the establishment of a juvenile detention home by the county board of supervisors. El Retiro is a branch of Juvenile Hall, the juvenile detention home of Los Angeles county, as far as finances and administration are concerned. The executive control of the two institutions is centered in one superintendent, who is appointed by the probation committee, from the county civil service lists. Each officer and employee of both institutions is certified by civil service. Although the institutions are over twenty miles apart, a single office equipment does for both and there is no overhead expense for the new institution. All medical, psychological and other technical, scientific work for El Retiro is done by the staff of experts at Juvenile Hall with no extra expense. This is true of stenographic work also.

The staff in residence consists of the following: an assistant superintendent, a domestic science instructor, a manual arts instructor and a utility man. There is also a schoolteacher who has the rank of principal and is employed by the board of education. There are two resident volunteers who serve without pay; one is a trained field worker, the other a playground worker.

For the first year the board of supervisors have allowed budget funds for twenty-five girls. Twenty-two girls are now at the school; by the time this goes to press our population quota will be complete for the present fiscal year, twenty-five girls.

EQUIPMENT

We possess ten acres of ground which is planted to olive trees and truck garden.

The requirements for entrance are as follows: First, an earnest desire to make good; this must have been proven by an unbroken good conduct record at the detention home, and an expressed willingness to undergo a period of training; second, freedom from infectious disease; third, the candidate must be of normal, or borderline mentality—that is to say, no diagnosis cases of feeble-mindedness are accepted; fourth, the girl's home situation must be one that prevents her from carrying out successfully her program of re-education there; the unfit home, the weak home, the broken home, are examples of this condition; finally, no girl is permitted to go to El Retiro who could be earning her living outside, unharmed.

Girls from fourteen to nineteen years of age are received.

COST

We have indicated that there are no administrative expenses connected with El Retiro. The girls buy and make their own clothing, and there are many gifts from the parent-teachers' associations and others. The cost per day, per girl, including salaries, food, supplies, heat and light, is less than \$1.40.

In time the school will be largely self-supporting. It should be entirely so within three years.

Correspondence

CHIROPRACTICALLY SPEAKING

Note. The following specimen is kindly furnished by the State Board of Medical Examiners. Comment on chiropractic standards of education is unnecessary.

G. H. _____, D. C.

Chiropractor
Palmer Graduate

Room _____, _____ Bldg.

San Diego, Calif., November 23, 1920.

Mr. C. W. _____,

Chula Vista, Calif.

Dear Sir:—Received your letter this morning and note contents of same and will say that it our object to sell the number of adjustments and to collect in advance because of the fact that in cases loike yours there are discourouging tine that a patient pass thro, and if it were not that they had the adjustments paid for they would become discouraged and quit which you are intipisating of doing.

When a patient starts to take adjustments there are many things that they do not understand about the work, In all cases we must bring to life the diseased part and in order to do that the area will become verry sensitive and sometimes sore, the patient feeling worse than before, which is the only way that you will ever get well, Better think this over and take the ballance of the adjustments and get well than to let your condition go as it is,

If it is to unhandy for you to come after them it may be that I can arrange to come to your house and give them to you, If it makes you to sore thro the chest we will not give them so often.

There are many patients that have gotten well because of the fact that the adjustments were paid for in advance and rather than to be out the amount they got well by takeing what was just due them.

Chiropractically Yours,

G. H. _____, D. C.

A CORRECTION

The following letter has been received:

"In the December number of the Journal appears an article under heading Collected Clippings on Medical Enforcement, about Judge Ernest Weyand issuing a permanent injunction against the State Board of Medical Examiners from revoking the license of W. F. Harlin, an osteopath, for practising medicine without a physician's license. When shown the article Judge Weyand said no such injunction was issued. The facts are that the newspapers did announce that the temporary injunction has been made a permanent one by Judge Weyand, so that Harlan is receiving all the benefits of same, though no such order was made, according to the judge."

County Societies

LOS ANGELES COUNTY

Los Angeles County Medical Meeting.

November 4 at 8 p. m. in the Friday Morning Clubrooms, the regular monthly meeting was opened by the president, Dr. Rea Smith.

Dr. Albert Soiland's subject was "Cancer of the Lip." He told of undisputed cures with radium emanation during twenty years of experience. A lethal dose should be administered to the pathological cells. The dose should not destroy the underlying cells and produce an X-ray necrosis. Cancer attacking the lip can be cured if it is only a superficial lesion and limited, but if glands are involved the case is hopeless. If the glands are involved use X-ray. Straight surgery should be

supplemented by radiation. A fine set of slides illustrated the appearance of cases before and after the treatment with gratifying and pleasing results.

Dr. Harlan Shoemaker, the secretary, read an invitation from the American Legion to view the medals on Armistice Day.

Dr. R. H. Van Denburg, Associate Professor of Urology, College Medical Evangelists, spoke on "The Proper Recognition of Certain Urologic Symptoms and Their Significance." He said that cystitis usually represents a coexisting infection either in the upper urinary or genital tracts. Infected urines do not represent cystitis until infections of the other urinary organs have been ruled out by a thorough investigation.

1. Frequency of urination is caused by certain chemical, mechanical, or inflammatory conditions, or their combinations.

2. Pain is generally a late symptom in the more chronic conditions. It is most characteristic of stone in the ureter and is the commonest symptom of stone in the bladder.

3. **Character of Urine:** In tuberculosis of bladder, the urine is invariably acid even with a secondary coccus infection. Specific gravity is low. Color is smoky or deep red, often pale milky or opalescent, which is most characteristic. In stone in the bladder, urine is foul-smelling, contains pus cells, and gelatinized pus. In kidney and bladder tumors, urine is bloody and varies from bright red to coffee-ground color.

4. **Hematuria:** Few drops of blood at end of urination often in bladder tuberculosis, secondary to kidney tuberculosis. Most prominent symptom in bladder tumor, apt to be sudden and profuse. In tumor of kidney, hematuria present in 54% as the first symptom. In stone in kidney or ureter, small in amount and may be discovered only microscopically. Present also in syphilis and ulcer of bladder and prostatic hyperplasia.

General Discussion.

Dr. Duncan in referring to Dr. Soiland's paper said he would like to have heard statistics of improved lip cases. He spoke about the efficiency of the X-ray but commended treatment by radium and the burying of tubes in the lesions of suitable cases. Lip cancer demands more radical treatment. Cases should be very carefully selected, the cancer removed and radium treatment given.

Dr. Lockwood said in doing mouth surgery he had operated on many lips and found advanced cases very discouraging. In breast cases he now follows up the operation with X-ray treatment which should be repeated for two years.

Dr. Scholtz stated that many are walking around with skin cancer hard to distinguish from keratosis. In that early stage they can easily be removed.

Dr. Thomas remarked that every epithelioma is accompanied by infected glands. In two months and a half the glands are involved. Cases are seldom seen before that time, and that is the reason they should be operated on at once.

Dr. Soiland agreed with Dr. Duncan. He himself had treated a thousand cases who came from the surgeons and radiologists to be X-rayed. Glandular involvement, straight secondary infection, get well.

Dr. Duffield called attention to the meetings of the Southern California Medical Society to take place the next two days. He also gave the result of the election. He pointed out the need of educating the people. "Better Health" should be circulated, and public lectures given.

Regular Scientific Meeting of November 18.

The Los Angeles County Medical Association met at the usual time and place.

Dr. G. L. Cole called the meeting to order saying that in the absence of the president, vice-president and secretary, he as the senior member of the Council was requested to preside.

Dr. O'Brien was elected temporary secretary.

Dr. Cole spoke in high terms of Dr. G. Frank Lydston, mentioning that he was a native Californian and the first interested in gland implantation, that he is a professor in the Illinois University, a writer and a traveler, and being so well known he would introduce the society to Dr. G. Frank Lydston of the College of Physicians and Surgeons, Chicago. This society has a thousand members, he added, and he himself is also an old Californian.

Dr. Lydston replied that he felt like the prodigal son having returned to his old home. He thought we were all familiar with gland implantation and the elixir of life.

The limitation of material was one of the difficulties. It was found that no gland from a subject after an injury should be used for this work. By the eighth day new circulation was established and certain hormone effects noticed. The periphery received blood supply, the interior broke down and the hormones produced physiological effects. The result was a matter of nutrition, a hormone effect of stimulation. The inference was that the effect of the implanted gland was not due only to the hormone but also to other endocrine organs. Among the endocrine organs the sex gland is the most important. There is no reason then why the sex gland should not improve the function and make youth.

Dr. Rosenkranz referred to Dr. Lydston as a pioneer in this work and one of the world's most competent investigators. He thought that it is hard to keep out the psychic element in such cases, and that patients do not tell the truth in this matter. Animal implantation cases give a certain amount of rejuvenation. He did not believe in the secondary effects. This field of surgery offers great potentialities.

Dr. Lydston closed by saying that there is no surgery without psychic impressions.

Dr. Thaddeus Walker of Detroit on "Permanent Quarters" was introduced by Dr. Cole with the statement that no man in the medical profession has worked so hard in this matter and that he will tell us how to do it here.

Dr. Walker told of the campaign for permanent quarters in Detroit.

Dr. Walker cautioned the profession not to get out of debt as the interest then is lost. With a debt everybody keeps up the work.

Dr. Cecil Reynolds spoke on the "Radical Cure of Hydrocephalus." He presented as testimony of successful cranial operations a few bright children who were epileptics up to the terminal stages of hydrocephalus before the radical cure by operation. Stereopticon views of these cases before and during the operations were viewed with great interest. He laid particular emphasis upon the deceptive character of the focal signs in "occult" hydrocephalus which had led to the futile explorations for tumor in some of the cases, and also upon the special surgical treatment of the dura mater and arachnoid, by which he eventually cured them.

Personals

Dr. Margaret M. Morris is reported ill from the after-effects of influenza.

Dr. Robert Montgomery Vermilye, Glendale, retired for the last few years, who came to California in 1910 having his home in Redlands, has been on the sick-list for some time.

Dr. J. R. Rice, retired physician of San Antonio, married Gertrude Deane from England, residing in Pasadena.

Dr. Charles L. Bennett, San Dimas, was elected president of the Southern California Medical Society November 5, at the Gamut Club, Los Angeles. Dr. Edgerton Crispin, of Los Angeles, was chosen vice-president, Dr. L. C. Kinney, San Diego, second vice-president, and Dr. William Duffield, Los Angeles, secretary and treasurer.

Dr. F. J. Morrow, of Los Angeles was elected secretary and Dr. Henry A. Sherk, Pasadena, Dr.

Granville McGowan, Los Angeles, directors of the California section of the American College of Surgeons, November 4 at San Francisco.

Dr. Wilber Beckett of Los Angeles, and Miss Dolores Hunt of San Francisco were married November 20.

Dr. S. J. Mattison has been elected president of the Pasadena Medical Society for the ensuing year.

Dr. R. L. I. Smith, vice-president and Dr. Caroline McQuiston-Leete, secretary-treasurer, were chosen for the same society.

Dr. Mary Akcy and Forest Haines Gillespie, formerly with the Twenty-third Engineers in France, were married November 29 in Los Angeles.

Home for Needy Children

The City Council authorized an initial payment of \$350 for the purchase of the old Monte Vista Hotel, at Monte Vista for the care of undernourished and needy children of the city; \$9000 is the total price. The hotel has forty rooms, the grounds comprise an acre of land. The home is to be made self-sustaining.

Smallpox and Infantile Paralysis

Dr. J. L. Pomeroy, County Health Officer, reminds us that there were 200 cases of smallpox in the city and as many in the county outside of the cities. Infantile paralysis occurs in the county at intervals. He cautions to diagnose mild typical cases, thus preventing others becoming infected.

ORANGE COUNTY

The regular monthly meeting of the Orange County Medical Society was held at the County Hospital. The committee having charge of propaganda relating to the "Quack Quartette" made a report. A great deal of work had been done and the work of the committee was most satisfactory, although the quack measures carried in this county.

In order to clear up a balance that had not been paid, an assessment of six dollars per member was levied. Drs. J. C. Crawford and H. A. Johnston were appointed delegates to the state convention, with Drs. R. A. Cushman and H. E. Zaiser as alternates.

J. A. Jackson exhibited Roentgenograms and charts showing a method of localization of foreign bodies in the eye. H. D. Newkirk read a paper entitled "Some Phases of Disease of the Antrum of Highmore, With Illustrative Cases." The discussion was opened by Dr. Mayes and followed by Drs. Tralle and Brooks.

Several questions were debated during the evening, such as the advisability of having two meetings a month, and the devoting of all the session to scientific matters, the business of the society to be cared for by a Board of Counselors. These matters, with several others, were left in the hands of a committee who will meet at an early date in the secretary's office, and make recommendations to the Society.

Dr. J. Robinson, of New Britain, Conn., has accepted a position as pediatrician for the Johnston-Wickett Clinic.

Several members of the Society attended the meetings of the College of Surgeons at San Francisco and the Western Surgeons at Los Angeles.

SACRAMENTO

Regular monthly meeting of the Sacramento Society for Medical Improvement, was held Tuesday, November 23, 1920, at the Hotel Sacramento; thirty-five members present; two visitors.

Dr. Hanna, local Health Officer, reported the prevalence at the present time, of cases of rabies, smallpox, diphtheria and scarlet fever, all reported to the Health Department within the past week.

Dr. Beattie reported a case of eclampsia, post-partum, five days after confinement.

The paper of the evening was read by Dr. Samuel Hurwitz of San Francisco, the subject being, "Autogenous Vaccine in the Treatment of

Asthma." Dr. Hurwitz differentiated between asthma proper and chronic bronchitis or asthmatic bronchitis.

The paper dealt largely with sensitization, as a causative factor in asthma; sensitization is acquired through inhalation, ingestion, or infection, the latter arising from the specific protein of the infecting organism.

Infection occurs through the usual foci: teeth, tonsils, gall-bladder, etc.; the problem is to determine the type of asthma, then treat that particular type; the history is important, fifty per cent. showing hereditary predisposition; the occupation also often gives a valuable clue; asthma acquired late in life, is quite often typical, and resistant to treatment; the etiology is also less easily found.

The paper was discussed by Drs. Bramhall, Snyder, Foster, and Howard.

A special meeting of the Society was called for December 1, to consider and discuss the proposed new constitution for the Society.

Dr. W. A. Briggs, dean of the profession of Sacramento, has sufficiently recovered from his two months' illness to be about again, and is receiving the congratulations of his friends.

Dr. C. L. Bittner has left for San Francisco to accept a commission as captain in the Medical Corps, U. S. A.

SAN FRANCISCO COUNTY

Proceedings of the San Francisco County Medical Society

During the month of November, 1920, the following meetings were held:

Tuesday, November 9—General Meeting.

1. Nomination of officers for 1921.
2. Anatomy of the conduction system. W. J. Kerr.
3. Graphic methods in heart disease. Herbert Allen.
4. Syphilis of the heart and aorta. E. C. Dickson.
5. Criteria for diagnosis of heart failure. H. I. Wiel.
6. Drug treatment of heart disease. A. W. Hewlett.

Tuesday, November 16—Committee on Industrial Medicine

Informal talks by Drs. W. H. Winterberg, M. R. Gibbons, J. H. Graves, G. G. Moseley, Emmet Rixford and Russell A. Jewett.

Tuesday, November 23—Eye, Ear, Nose and Throat Section.

1. Election of officers for 1921.
2. Demonstration of cases.
3. Conditions that determine choice of operation in glaucoma. W. F. Blake.
4. Pathological conditions of the internal ear. (Lantern slides.) M. W. Fredrick.
5. The X-ray as a therapeutic agent in selected cases of tonsillar and pharyngeal infections, especially those in which operation is contraindicated. W. P. Lucas.

Tuesday, November 30—Special Meeting.

1. Surgical treatment of empyema. (Motion pictures.) A. E. Mazingo, Indianapolis.
2. Informal talk on gland transplantation. F. G. Lydston, Chicago.

TULARE-KINGS COUNTY

The October meeting of the Tulare County Medical Society was devoted to organizing an active opposition throughout the county to the "Quack Quartet" amendments, Dr. Smith of Oakland, presenting the program of the League in detail, and all members pledging their personal co-operation along the lines desired. The local result appears to have been measurably influenced by the activities thus enlisted.

The November meeting was held at Hotel Johnson, Visalia, November 14 with Dr. C. C. Browning of Los Angeles, the guest of the evening. Dr. Browning spoke at length upon the recognition of tuberculosis by the general practitioner,

and the proper way of impressing the patient with the essential points of his co-operation with the physician in its treatment. The address was illustrated with lantern slides. Following this an informal question box was sprung which Dr. Browning handled with much interest. During the day Dr. Browning visited the Tulare-Kings County Tubercular Hospital, in company with several physicians interested, kindly giving his advice regarding a number of special cases.

At the regular December meeting of the Tulare County Medical Society, Dr. H. W. Fox of Tulare was duly elected to membership, membership to begin January 1, 1921.

The following transfers to the Tulare County Medical Society have been duly made:

July 2, 1920—Dr. Edward Brigham, Dinuba, from Kern County Medical Society.

Aug. 18, 1920—Dr. A. C. Muller, Strathmore, from Sonoma County Medical Society.

At the regular meeting held December 5, 1920, the following officers for the Tulare County Medical Society for 1921 were elected:

President—Dr. A. W. Preston, Visalia.

Vice-President—Dr. C. A. Tillotson, Dinuba.

Secretary-Treasurer—Dr. E. R. Zumwalt, Tulare.

Membership Board Censors—Dr. G. B. Furness, Visalia.

Delegate 1921-22—Dr. C. M. White, Visalia.

Alternate 1921-22—Dr. L. L. Seligman, Dinuba.

NOTICES

LANE MEDICAL LECTURES

Dr. L. Emmett Holt, of Columbia University, New York City, has been appointed Lane Medical Lecturer for the year 1921 at the Medical School of Stanford University, San Francisco. The Lane medical lectures will be delivered in the week commencing November 28, 1921, and the general subject will be that of Growth and Nutrition.

A new private children's unit with unusually complete and modern facilities has been opened on the third floor of Lane Hospital. It comprises a ward of eleven beds, subdivided into cubicles, for older children; a ward of four beds for infants; dressing rooms; an enclosed sun-porch, and an open porch. It is open for use to the general profession.

Clinical Department

AMEBIC GALL BLADDER INFECTIONS WITH OPERATION.

By HERBERT GUNN, M. D., San Francisco.

I can find no reference in the literature regarding the occurrence of amebae in the gall-bladder excepting where liver abscess has been present and has ruptured into it. In the following cases there was apparently no question of a liver abscess having any bearing on the condition of the gall-bladder. The two cases cited were both considered to be incurable amebic dysenteries having received various treatments over periods of from three to five years.

Case 1. Three years previously had liver abscess which was opened and drained with apparently complete recovery and was considered free of intestinal amebae. He was first seen by me three years ago with recurrence of amebic dysentery. Repeated courses failed to clear him as also did an appendicostomy. Later patient consented to an operation on the gall-bladder which it was explained was of a purely experimental nature.

Operation was done by Dr. P. K. Gilman of Stanford University.

The gall-bladder was found to be quite large

with a distinct thickening of its walls. It was thoroughly curetted and drainage instituted. The contents of the gall-bladder appeared normal, cultures were negative and scrapings showed motile amebae present. Treatment carried out following operation failed permanently to eradicate amebae from the intestinal tract. It is assumed that the ducts of the liver are involved and the patient incurable.

Case 2. Chronic amebic dysentery seventeen years' duration which it had been impossible to cure by any known treatment over a period of five years.

Operation by Dr. P. K. Gilman.

Extensive adhesions found in the gall-bladder region. The gall-bladder was considerably enlarged, and its walls distinctly thickened much the same as in case one. Contents appeared normal and cultures negative. No amebae found in the scrapings. The gall-bladder was removed and drainage established into the duct. The appendix which was partly obliterated was removed. A course of emetin hydrochloride and neo-salvarsan was given following operation, since which time the stools have been free of amebae, examinations having been carried out thoroughly and systematically over a period of six months.

Conclusions—First it would appear that a definite involvement of the gall-bladder with amebae can be present without an adjacent abscess to explain it.

Secondly, that it may be possible to cure a definite percentage of cases that have been considered as incurable, by removal of the gall-bladder.

The above is considered merely as a preliminary report and has been abbreviated on account of lack of space.

Several other cases of incurable amebiasis are now under observation.

350 Post street.

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. I. October 28, 1920. Male. American. Age 7 weeks. No. 8718. G. S.

Complaint: Vomiting.

Family History: Father and mother living and well. Three brothers and sisters living and well. No miscarriages. Family history entirely negative. Other children have never had any complaint similar to this.

Past History: Child was supposed to be one month overdue. Birth weight 10 pounds, normal delivery. Baby was somewhat cyanotic at time of birth. Has been breast fed all the time. Nursings have been irregular, whenever mother thought baby was hungry, usually at two or two and a half hour intervals during the day, but only once during night. Baby is nursed about 10 minutes at a time. Besides nursings mother gave about 2 ounces of water daily between meals. During the first week of life baby had rather frequent stools, but since the second week has had only one or two stools a day. Its development was uneventful until the fifth week, when mother noticed that while nursing at the breast baby vomited. He vomited with considerable force, and since that time baby vomited after every feeding, usually while still nursing. Vomiting was always projectile in type, often shooting as far as three feet. During the past week baby apparently retained nothing and had only one bowel movement and that one small in quantity. Very little fecal material was obtained by enema. During the past week he urinated very infrequently, mother thought only once, perhaps twice a day. Mother always noticed that just before baby vomited there was a wave of peristalsis across the abdomen, which traveled from left to right, following which the baby vomited.

Physical Examination: Shows a very well de-

veloped baby of seven weeks in very good condition. The skin, however, was dry and there were signs of loss of tissue turgor. Anterior fontanelle was rather small but not sunken. Eyes, ears, nose and mouth negative. Chest: lungs perfectly clear, heart sounds good. Abdomen: when the baby is not nursing it is soft and just to the right of the median line, 2 cm. below the costal margin, there is a feeling as if the stomach wall is rather hypertrophied. Questionable whether a definite mass can be made out. Physical examination is otherwise negative. When the baby nurses, however, about 5 minutes after starting there are definite peristaltic waves both from the left to the right and right to left. The stomach can be seen to harden and the complete outline of the stomach is visible. This is followed by projectile vomiting. This happens whether breast milk or water is taken.

Diagnosis: In this case is very simple. It is a case of Pyloric Stenosis, giving practically all the classic symptoms. First, male child, with symptoms appearing at 5 weeks, coming on suddenly with projectile vomiting, showing peristaltic waves and definite mass. As the condition progressed stools became infrequent and there was also diminished urination with loss of tissue turgor which is due to lack of water, condition of anhydremia.

Discussion of Treatment: During the past few years it has been found that a certain number of cases of pyloric stenosis will respond to medical treatment. This has been accomplished by giving thick gruel. The gruel is made up by taking 14 tablespoons of farina, 20 ounces water and 8 ounces of skim milk or breast milk. (In this particular case both breast milk and skim milk were tried.) This makes a thick formula which must be fed the baby through a large Hygeia nipple with a large opening. The thick cereal is kept hot and small quantities poured in. The baby took this fairly well but continued to vomit and retained very little. The baby's stomach was also washed out with hot soda bicarbonate solution before nursing. Nursing periods were every four hours. Such feedings will in appropriate cases reduce the vomiting very markedly and when this occurs one can safely depend on medical treatment. In this case, however, after watching the child for 48 hours there was no retention of food by the stomach. Fluids were supplied the child intraperitoneally and by the subcutaneous route. Glucose solution was also given through the sinus, so that the water quotient of the child was kept up. During the 48 hours of medical treatment the child did not retain any of its feedings. Projectile vomiting continued after every feeding. After the 48 hours operation was decided upon. At operation the pylorus was found enlarged and there was a definite cartilaginous mass about the size of the thumb. The muscular layer of the pylorus was split longitudinally in the non-vascular area down to the submucosa. (This is the typical Ramsted operation and is by all odds the best operation for pyloric stenosis of infancy.) The abdomen is then closed. The patient left the table in good condition. 3 per cent. glucose and 3 per cent. bicarbonate was given by rectum immediately after the operation. Temperature after the operation went up to 103 but fell the next morning. There was some vomiting during the night. During the first 24 hours the baby was given 6 feedings of 2 ounces each, composed of 2/3 pumped breast milk and 1/3 boiled water. During the next few days the baby only vomited once or twice and there was no projectile vomiting. The second day after the operation the baby was allowed to go to the breast and nursed for 3 minutes. The baby started gaining within 24 hours after operation and continued to gain from that time on. He was discharged in 10 days after operation in very good condition, having gained 8 ounces since the operation and weighing 2 ounces more than when he entered the hospital. Since returning home the

mother has written that he has not vomited and has continued to gain very satisfactorily.

Discussion: This case illustrates the advantage of carefully watching medical treatment and not waiting until the baby is in poor condition before operating. There is practically no mortality when these cases are operated on while they are in good condition. On the other hand, when operation is deferred until the child is markedly dehydrated and emaciated the mortality rises very rapidly. In no case should operation be deferred for very long if the child continues to vomit on appropriate food. In our experience thickened gruels are by all means the best type of feeding for these cases, and in quite a large number of cases this will prove successful, especially if it is started early.

State Board of Medical Examiners

BOARD OF MEDICAL EXAMINERS OCTOBER REPORT Legal Department—North

Prosecutions for Violation of Section 17 of the State Medical Practice Act.

Total investigations..... 45

New Complaints Filed and Arrests Made.

| | |
|-------------|---|
| October 15, | People vs. L. H. David, Sacramento, No. 1777. |
| " 15, | " " Frank B. Whidden, Sacramento, No. 7078. |
| " 15, | " " Tangi Nischino, Sacramento, No. 1803. |
| " 15, | " " Just Martin, Sacramento, No. 1780. |
| " 15, | " " C. M. Jones, Sacramento, No. 1762. |
| " 28, | " " M. S. Kimbal, Oakland, No. 2972. |
| " 29, | " " Adolph Tschahmi, San Francisco, No. 211330. |
| " 28, | " " B. Y. Gwan, Marysville, No. 42. |
| " 28, | " " Toshiza Nakamura, Marysville, No. 43. |
| " 29, | " " Kengo Koga, Marysville, No. 44. |
| " 8, | " " Ah Ping, alias Cheu Shun, Santa Rosa, No. 2553. |

Total 11

Preliminary Hearings.

| | |
|-------------|--|
| October 14, | People vs. M. J. Grannahan, San Francisco, No. 28294. |
| " 19, | " " L. H. David, Sacramento, No. 1777. |
| " 19, | " " Frank B. Whidden, Sacramento, No. 7078. |
| " 20, | " " Quan Kee, alias Ching Hi, Chico, No. 451. |
| " 26, | " " Tangi Nishiao, Sacramento, No. 1803. |
| " 15, | " " Just Martin, Sacramento, No. 1780. |
| " 7, | " " Jane Lewis, San Francisco, No. 23861. |
| " 30, | " " Teshina Nakamura, Marysville, No. 43. |
| " 29, | " " Kengo Koga, Marysville, No. 44. |
| " 11, | " " L. D. Treseder, San Jose, No. 135. |
| " 8, | " " Sam Richmond, Oakland (Police Court No. 2523, bail forfeited). |

Total 11

Superior Court Trials.

| | |
|------------|--|
| October 5, | People vs. A. C. Goscinsky, Salinas, No. 184 and No. 7317. |
| " 11, | " " Cheu Yuen, Red Bluff, No. — (guilty). |

Total 2

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Secretary
Editor
Managing Editor

SAXTON POPE, M. D.
ALFRED C. REED, M. D.
CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

Alameda.....Dr. E. Spence Du Puy, Oakland
Butte.....Dr. Edward Baumeister, Chico
Contra Costa.....Dr. P. C. Campbell, Richmond
Fresno.....Dr. G. L. Long, Fresno
Glenn.....Dr. W. H. Walker, Willows
Humboldt.....Dr. L. P. Dorais, Eureka
Imperial.....
Kern.....Dr. C. A. Morris, Bakersfield
Lassen-Plumas.....
Los Angeles.....Dr. Wm. Wenzlick, Los Angeles
Marin.....Dr. W. F. Jones, San Rafael
Mendocino.....Dr. O. H. Peckman, Fort Bragg
Merced.....Dr. Brett Davis, Merced
Monterey.....Dr. T. C. Edwards, Salinas
Napa.....Dr. Robt. Crees, Napa
Orange.....Dr. H. A. Johnston, Anaheim
Placer.....
Riverside.....Dr. Paul E. Simonds, Riverside
Sacramento.....Dr. S. E. Simmons, Sacramento
San Benito.....

San Bernardino.....Dr. C. L. Curtiss, Redlands
San Diego.....Dr. Robt. Pollock, San Diego
San Francisco.....Dr. Le Roy Briggs, San Francisco
San Joaquin.....Dr. Dewey R. Powell, Stockton
San Luis Obispo.....Dr. Paul K. Jackson, San Luis Obispo
San Mateo.....Dr. A. L. Offield, Burlingame
Santa Barbara.....Dr. Robert W. Hartwell, Santa Barbara
Santa Clara.....Dr. Chas. Richards, San Jose
Santa Cruz.....Dr. J. B. Cutter, Watsonville
Shasta.....Dr. F. Stabel, Redding
Siskiyou.....
Solano.....Dr. A. V. Doran, Vallejo
Sonoma.....Dr. N. Juell, Santa Rosa
Stanislaus.....Dr. E. F. Reamer, Modesto
Tehama.....
Tulare.....Dr. J. T. Melvin, Porterville
Tuolumne.....
Ventura.....Dr. C. A. Jensen, Ventura
Yolo.....Dr. Frances L. Newton, Woodland
Yuba-Sutter.....

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

FEBRUARY, 1921

No. 2

THE OATH OF HIPPOCRATES

I SWEAR BY APOLLO THE PHYSICIAN, and Aesculapius, and health, and all-heal, and all the gods and goddesses that according to my ability and judgment I will keep this oath and this stipulation—to reckon him who taught me this art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required, to look upon his offspring in the same footing as my own brothers, and to teach them this art if they shall wish to learn it without fee or stipulation, and that by precept, lecture, and every other mode of instruction I will impart a knowledge of the art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen which according to my ability and judgment I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to anyone if asked, nor suggest any such counsel, and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption, and further, from the seduction of females or males, of freemen and slaves. Whatever in connection with my professional practice, or not in connection with it, I see or hear in the life of men which ought not to be spoken of abroad, I will not divulge as reckoning that all such should be kept secret. While I continue to keep this oath unviolated—may it be granted to me to enjoy life and the practice of the art, respected by all men in all times, but should I trespass and violate this oath, may the reverse be my lot.

ANNUAL MEETING IN SAN DIEGO

It is about time to begin planning for the annual trek to the meeting of the Medical Society, State of California. The war is really over. The arts of peace are flourishing. In scientific, social, and practical value, the approaching session already bids fair to eclipse any of its predecessors. There are some big problems to be reported on and some decisive lines of action to be determined. There ought to be two thousand doctors in attendance. It is worth it. For once, put yourself in the way of realizing that you belong to a big, upstanding, two-fisted profession. Get out of your rut. You are in one, whoever you are. Get out of it. Ruts hinder, and your perspective is curtailed by them.

Incidentally, there are several matters that have been appearing from time to time, and the times have been more frequent of late. Firstly, about papers and the program. The society is so large, and blessed with such an array of imposing talent, and the space of the session is still so short, being only three days, that not every member of the society, nor even every member who goes to San Diego, nor yet again even every member who applies for a place on the program, will be able to secure a place on the program. No more hard-working group can be named than your program committee, nor a group who deserve more sympathy and receive more knocks. If they succeed reasonably well in getting a balanced program of wide interest, do not feel that they are your personal enemies because you were perforce one of the three thousand who could not be got in the limelight this year. It is questionable if any doctor should appear on the scientific program two years in succession.

No one regrets more and probably none regret as much, as your executive staff that the *Journal* is not large enough to take care of the excellent scientific material arising in this state. It is no longer possible to publish even the papers pre-

sented before the State Meeting. Do you realize that the columns of the *Journal* have not been open to receive articles for publication directly submitted for over a year and a half? And yet, until printing costs adjust themselves, it is impossible to contemplate immediate enlargement. Last year over thirty state society papers were rejected for one of three reasons. They were too long. They were wretchedly written. Or else they were too technical, and the author joined in feeling that they would more properly appear in a more technical journal. If some kindly divinity would but endow each person on the coming program with a clear vision of the appearance he presents and the manner in which he presents his paper, and the fact that no one is heard, medically or otherwise, because of his much speaking, what a lot of time and stress we would all be saved. Be brief. Be clear. Speak loudly. Stop when you are done. Know what you are trying to put across.

Then there is the perennial rejuvenation of the desire to have stenographic reports of the discussions. Our *Journal* is too small. The best estimate of the cost of stenographic reports is in the neighborhood of two thousand dollars. Can't it be better spent, when we get it, than in reporting discussions? Until then, we must go to publication undiscussed.

Remember then that we will be a long time dead and that the meeting of the State Society offers a welcome oasis as we cross the sands of medical practice and the desert of earning a livelihood, and in these oases are to be found professional pabulum and spiritual refreshing, and good fellowship and a new vision of work well done and new duties pressing. Come to the meeting in San Diego.

INTERVIEW YOUR SENATOR AND ASSEMBLYMAN.

The Legislature is taking a constitutional recess. Senators and Assemblymen have returned to their homes and are ready to discuss pending bills with their constituents. The Legislature will not convene again until February 24th.

Now is the time to interview and inform your Assemblyman and Senator. The *Journal* is familiar with the facts and advocates the passage of Senate Bills Nos. 346, 401, 406, 408, 409 and 410. The first of these, Senate Bill 346, was introduced by Senator Anderson and regulates the incorporation, resources, equipment, faculties, and curricula of any school or college that purports to qualify applicants for a physician and surgeon certificate and a drugless practitioner certificate. One factor largely responsible for some of the pernicious measures that appeared on the November ballot and which were condemned as dangerous by a large majority of the people, is the present weak law of this State regulating the incorporation of colleges that purport to teach the healing art. It is the duty of the State to safeguard the health of its people and only men and women properly educated can safely be licensed to practice the healing art.

The people generally regard a diploma from a college, academy or university as certain evidence that its possessor has certain qualifications. A little learning is a dangerous thing in any of the professions, but especially so when applied to such precious possessions as health and life. Senate Bill No. 346 is a constructive measure offered by the League for the Conservation of Public Health in the interests of students who attend colleges in this State to qualify themselves to practice the healing art and in the interest of the people who will be attended by such students after graduation. In this effort to protect the public from unqualified service the League has the heartiest support of the great majority of people and the entire medical profession.

It is the public that is most interested, for it is the public that must suffer from the ignorance of the incompetents. The people of California have voted uniformly in their various communities for better schools. Educational standards have been raised all along the line except where some alleged colleges attempt to teach the healing art without adequate buildings, equipment, funds or faculty. These incompetent schools are the sources from which incompetents flow. Senate Bill No. 346 will stop the source and the flow will cease. It is a measure that should have the hearty support of all Senators and Assemblymen interested in educational standards as safeguards for the public welfare.

Senate Bill 408 is an act to repeal the general vaccination act for public and private schools. This act has been the source of confusion and useless expense. It does not seem practical of administration without much friction. The law requires that a child must be vaccinated or present a conscientious objector's card before he or she can be admitted to school. Many children whose parents recognized the efficacy of vaccination presented objector's cards and thereby created false statistics and increased the work and expense of City and State health departments. The establishment of exclusive districts for unvaccinated children created more work and expense. The repeal of the law will in no way interfere with the present powers of health officers.

Senate Bill 406, introduced by Senator Crowley, provides for the conduct, maintenance and operation of clinical, diagnostic, pathological and biological laboratories and the preparation, manufacture, standardization, sale or other disposal of serums, vaccines, antitoxins and other biological products. This bill was prepared after conference with leading medical authorities of the State and should not be confused with Senate Bill 479, which attempts to duplicate essential features of Senate Bill 406, but contains other provisions that render it of doubtful value.

Senate Bill 409 adds a new section to the medical practice act relating to the use and application of Roentgen rays, X-rays or Radium rays in the examination, diagnosis or treatment of human beings for diseases, injuries, deformities, etc. Many reasons for the passage of this bill will readily occur to everyone familiar with this subject.

Senate Bills 401 and 410 strengthen and clarify sections of the medical practice act. In Senate Bill 401 anesthesiology is introduced as a new subject with thirty-two hours in the course of instruction for a physician and surgeon certificate. In Senate Bill 410 the oral, practical or clinical phrase which was an indeterminate feature of examinations is eliminated.

Senate Bill 114, which is an act to provide for and regulate the examination and registration of nurses, will require definite amendments before it can be approved. We understand that the authors of the bill have had its defects pointed out to them and welcome amendments that will make the laudable purposes of the measure more certain. The medical profession and the public are devoted to the advancement of nursing in this state and nothing must be done that will hamper nursing in small or large hospitals. The law should embody definitely stated minimum standards, and the definition of "accredited schools" should be more clear and complete.

Is it advisable to create various classes of nurses? There are a number of other legislative measures that we will discuss in the next issue of the Journal. If any reader wishes fuller information on these or other bills affecting public health that are now pending before the Legislature, a letter addressed to The League for the Conservation of Public Health, Butler Building, San Francisco, will receive prompt attention.

BOARD OF MEDICAL EXAMINERS ABOLISHED BY ASSEMBLY BILL 347

On January 18th Governor William D. Stephens sent a special message to the Legislature setting forth, in general terms, an economy and efficiency program. It was stated that this program proceeded upon the fundamental lines recommended by the "Boynton Efficiency Committee" which, two years ago, after lengthy investigation, filed a comprehensive report upon the consolidation of many boards, commissions and other state agencies.

Eight bills were introduced to accomplish the administration's "economy and efficiency plan."

In the Governor's message what was referred to as "the seventh bill" to create a "Department of Professional Standards" was introduced as the first bill of the eight Efficiency Economy Bills in numerical order. We are not informed whether this was an accident, or whether it is considered of first importance, and should therefore be first considered.

It was introduced by Assemblyman J. R. White, Jr., of Los Angeles County, and is known as Assembly Bill 347. It abolishes the Board of Medical Examiners and merges it and all its essential functions with the Boards of Architecture, Accountancy, Dental Examiners, Embalmers, Library Examiners, Optometrists, Pharmacy and Veterinary Medicine.

A lay director shall have power, according to Assembly Bill 347, "to issue licenses for all of these professions, and to suspend or revoke licenses. He shall not be a practitioner of any of the professions under his jurisdiction, but shall select,

for each examination and for each hearing, a board of three persons each of whom shall be a person licensed to practice in this state the profession concerned."

In this bill we first observe a fundamental departure from the recommendations made by the Boynton Committee on Efficiency and Economy. In that report sent by the Governor to the Legislature March 12, 1919, it was set forth as a fundamental policy that only "those agencies which perform similar or allied functions" should be placed under one executive head. The Board of Medical Examiners and some others were "left to function independently" and it was the opinion of the committee as "seriously questionable" whether or not "increased efficiency" would be accomplished by consolidating a number of boards that had no apparent common function. It was pointed out that the item of economy could not be urged "for the reason that all of these boards are supported by fees collected from the professions regulated."

"One science only will one genius fit, so vast is art, so narrow human wit," the scheme proposed in Assembly Bill 347 would have one lay "genius" handle Architects and Embalmers, Dentists and Accountants, Librarians and Veterinarians, Optometrists and Pharmacists with the scientific medical profession thrown in for good measure. It is obvious that this fanciful grouping is not based upon any close relationship between these boards or any similar or allied functions which they are competent to perform.

On whose advice was the Governor led to adopt this impracticable plan, placing a number of uncoordinated professional boards without common policy under the control of an unprofessional chief?

Excellent advice is available, and had the Governor's advisors taken counsel with those best qualified to give it on the most economic and efficient method to maintain professional standards for the protection of the public health, they would realize that Assembly Bill 347 contains vital defects. The chief purpose of the Board of Medical Examiners is to test the qualifications of those who undertake to treat disease in any form and to protect the public from unskilled and incompetent practitioners, from imposition by charlatans and quacks who make extravagant claims of ability to cure the sick and are a constant menace to the health of their victims and the community at large. The public as a whole is entitled to know that anyone licensed by the state for a profession which requires the highest skill, learning and character shall have these qualifications determined by competent judges, and that the incompetent and unscrupulous shall be excluded from practice no matter how loudly they clamor. No law must be passed for political expediency that will lower standards, admit the uneducated to practice, and thereby jeopardize the public health.

One of the arguments advanced in favor of Assembly Bill 347 creates deep concern. It is stated by some of its advocates that the lay director of the proposed department of professional standards may, under the terms of the bill, appoint examiners from any of the many drugless cults of Cali-

tonia—chiropractors, osteopaths, naturopaths, et al.—to conduct the examinations of the individual cultist applicant. It is said by some advocates of the bill that this would satisfy and still the clamor of the cults. What is of more vital importance is that it would nullify the will of the people expressed at the polls upon this subject and would menace public health. We trust that those who are interested in Assembly Bill 347 will study the election returns wherein the people decisively defeated all the anti-health measures proposed by the cults.

There are no cross-cuts to scientific education and there can be no compromise with the incompetent.

We have only the primary object—the protection of the public—in mind and not the offices nor the officers of the board. Has the independent Board of Medical Examiners demonstrated its usefulness? Is there any reasonable charge of inefficiency or extravagance against it? If the present performers are efficient, economic and experienced, and they are dismissed, and an untried plan substituted for them, there must be some other object beside efficiency and economy prompting the action.

The Journal would like to take the testimony of the advocates of Assembly Bill 347, for we favor any practical plan that will produce greater efficiency and economy in promoting and protecting the public health.

DUE PROCESS OF LAW

WHAT THE CULVER DECISION MEANS

The Christian Science Monitor—the international daily newspaper of the Eddyite cult—heads the first column of its first page of January 1st. "Medical Freedom Law Upheld by California Court—Right of Exemption from Physical Examination in Schools is Sustained," etc. If it were not the custom of the international Eddyite propagandist to print deceptive articles on medical subjects we would reach the conclusion that "the Monitor" was starting the new year wrong; but the misleading character of the headlines just quoted shows that "the Monitor" is functioning normally and has made no reform resolutions for 1921.

Now what do the essential facts presented in the record of the Culver Case admitted by both parties disclose?

Under orders of the chief of police of Berkeley, a policeman attached a placard on the premises occupied as a residence by Laura Culver. Her niece, D. N., a pupil at the Berkeley High School, resided with her. In the latter part of August, 1920, there were six cases of diphtheria and one death from that disease among the students of the Berkeley High School. On September 8th the local health officer issued an order to the Berkeley superintendent of schools to the effect that cultures from the noses and throats of all pupils of the school would be taken on that day by the board

of health, and that those refusing cultures should be excluded from school until receiving written permission from the health officer to return. Eighteen of the pupils, including D. N., refused to permit the cultures to be taken. They were sent home and instructed by the school authorities not to return until they received permission from the health officer. After several days seven of these eighteen pupils, including D. N., returned and attended classes at the school, and continued, daily thereafter, to attend school without receiving any permission from the health officer. Cultures were taken from the throats and noses of 1300 pupils, and of those, 220 were designated as carriers. All but ten or twelve pupils of the school submitted to the examination. The local health officer communicated with the secretary of the state board of health, and in response to his request, on September 24th, he received from the said secretary a telegram reading as follows: "Quarantine following contacts with cases and carriers of diphtheria until they are determined not to be carriers of the infection." (Then followed the names of the seven pupils who had returned to school, including D. N.)

The placards placed upon the premises of six homes were not disturbed. The one on the Culver home was torn down. Another policeman placed a fresh placard upon the Culver premises which was immediately torn down.

The only act of Laura Culver in connection with the matter was the tearing down of the placard. "Whether this act," says Judge P. J. Langdon, the decision of the First Appellate District Court, Division Two, "which is admitted, was punishable as a crime or not is the *sole* question presented for determination." There is nothing in the decision upon "the right of exemption from physical examination in the schools." On the contrary, the decision clearly points out the broad powers vested in the board of health "to the end that epidemics may be avoided and the health of the people of the state preserved." The court declares "that every person who *after notice* shall violate or who *upon demand of any public health officer* shall refuse to conform to any rule, order or regulation prescribed by *the state board of health* respecting the quarantine of persons or places shall be guilty of a misdemeanor."

The Journal finds itself in hearty accord with this opinion. For a penal law or ordinance should be sufficiently definite for those affected by it to know their duty thereunder, and if not, it should not be sustained on the assumption that officers will exercise a wise discretion in enforcing it. "Before any citizen may be punished as a criminal it must be shown at least that a rule had been made by the board of health prior to the act sought to be punished as criminal, and such a rule must have been either so published as to give it the effect of a general rule of law, or knowledge of it must have been brought home to the person charged with its violation—"to warrant the punishment of Laura Culver for tearing down the placard it was incumbent upon the prosecution to show that a rule, order or regulation prescribed

by the state board of health had been made, and that the petitioner had notice of it or that she refused to conform to it upon demand of the health officer."

Laura Culver could not be punished for an act of her niece. "There was no order of the board of health, or its secretary, for the quarantine of the premises occupied by the niece. The order was that she should be quarantined. The distinction between the quarantine of a person and the quarantine of a place is clear—there is no rule providing for the placarding of the premises occupied by mere contacts, but only for cases of diphtheria or strongly suggestive of diphtheria. It is palpable that Laura Culver could not have notice of what did not exist."

In addition to all of these persuasive reasons the placard which caused the contention "did not meet the requirements of any form prescribed by the board of health, and it was not dated nor signed by anyone."

It is not surprising that those who deny the existence of disease and are religiously opposed to all health laws should misinterpret the scope of this decision. They fail to appreciate the importance or necessity of any health measures to protect society from disease. They also fail to appreciate that laws must be the same for all classes and must not be varied for particular individuals because they have peculiar beliefs or alleged political power. American law does not tolerate favored classes.

The good sense of mankind has definitely declared that there *is* disease, that certain diseases spread and can be checked, that no citizen, even though he may deny the existence of disease and death, can thereby secure any special exemption or privilege to endanger the lives of his neighbors, his children or the citizens generally.

This decision fully answers those political propagandists of the Eddyite and kindred cults, which are always denouncing the oppressive powers of health boards. It demonstrates that the judiciary will guard against the excessive use of power by health boards. If the individual health officer exceeds his power and trespasses on the rights of individual citizens they can hold him responsible. The acts of the health officer, like the acts of a judge, must be in harmony with due process of law. Neither can with impunity be arbitrary. Due process, however, is not necessarily judicial process. The powers and duties of the state board of health, in protecting society by warding off imminent danger of disease, would be ineffectual if, in emergencies, they had to wait on the formal proceedings of the courts, and the law's delays. This decision in no way limits the very broad powers entrusted to the board of health for safeguarding the public health. The highest courts have declared innumerable times that health officers who are required by law to use frequently emergency and summary measures to preserve the public health will not be prohibited from performing their essential lawful public duties. The courts deal with law and its interpretation. Judges are no more competent to diagnose disease than laymen not invested with judicial power.

Wherever it is necessary in the interests of pub-

lic health to quarantine places or persons in future the state board of health will do so based upon facts and will administer the law impartially regardless of the prejudice of peculiar people whose conduct tends to nullify all health laws.

IPECAC—THE PANACEA AND CURE-ALL

While on the subject of drugs and improper drug advertising, it is appropriate to mention a brochure which has apparently been issued to physicians wholesale, on the virtues of a certain preparation of ipecac. Two questions arise in this connection. The first relates to the propriety, to say the least, of a reputable drug house circularizing the medical profession with reprints or excerpts from scientific articles. The proper place for the doctor to receive authentic scientific information is through his scientific societies and journals. Only here has he assurance that commercial desires are not coloring the matter presented. Only here has he suitable facilities for weighing the pros and the cons, and making impartial decision. The flood of commercialized scientific advertising now in vogue is not in good taste, is unscientific and may be most dangerous. The doctor is always safe in consigning to the waste-basket at once all such "literature" as fast as it comes to hand.

In the second place, is to be considered the actual merit of the claim that ipecac is of such wide service as claimed in the advertising in question. We remember only a few years ago, upon the clinical introduction of emetin, how this drug was lauded as a specific and a quick specific for amebic dysentery. We know now that emetin alone does not cure amebic dysentery. We know that the clinical test of such cure is dangerous for the patient and all too often unsuccessful. Amebic dysentery is increasing fast in non-tropic countries and is a disease of serious consequences and often most difficult or even impossible of cure even with the most approved forms of treatment. Its treatment is never to be undertaken lightly. The only test of cure is repeated negative examinations of the stools over a considerable period of time, and this examination must be directed by an expert in the identification of amebic cysts.

It is unsafe at the present time to advocate ipecac for tonsillitis, typhoid, pertussis, spastic constipation, spasmodic croup, asthma, arthritis or any of an almost indefinite list of diseases for which it has been recommended. For example, it has had strong support in tuberculosis. The use of ipecac as an anti-spasmodic has not yet been divorced in the minds of scientific men from its more primary action as an emetic. This action is often employed to advantage, but it is well to realize that the effect sought is a result of a mild degree of nausea which may be so slight as not to rise to consciousness. Any brochure advocating ipecac in a series of diseases other than amebiasis, should, if honest, state the symptoms and constant dangers of ipecac or emetin poisoning. This poisoning is a matter of serious consequence and the unskilled use of this drug may easily invite trouble.

We are afflicted with a plethora of claims and advertising of drug preparations. Most of it is an insult to the intelligence, honesty and education

of the physician. The modern doctor is using fewer and fewer drugs, and the stimulated interest in drug using inculcated by drug concerns is to be condemned unreservedly. Commercial salesmanship, while laudable in most lines, must observe the strict proprieties of real service, absolute honesty and complete deference to the scientific training and ideals of physicians, if it is not to fall into disfavor as a whole. Useful drugs should be purveyed to the medical profession not by an advocate but by a guarantor of quality alone. We do not go rightfully to the drug house to learn our therapeutics nor do we thank the drug house for seeking to do our thinking for us.

FULTON'S COMPOUNDS

Physicians have received within the past year literature purporting to emanate from the John J. Fulton Company, San Francisco, extolling the virtues of certain preparations in glycosuria and albuminuria. The preparations are for sale, it is said, by all important wholesale drug houses. Extravagant and unsupported claims are made for these preparations, extravagant in that they claim or suggest improvement in all cases, even when all other methods have failed, and unsupported in that no controlled scientific laboratory investigations are reported.

Space is devoted to the matter here simply to advise physicians to leave these nostrums alone. Their formula is not given, in spite of the printed claim that it is not a secret preparation. Even direct written request to the company failed to elicit any definite statement disclosing the formula. There is no reason to believe that the preparations have any virtue in the conditions advertised. The method of advertisement is unethical, in that a secret nostrum is extolled for serious and common diseases, and no opportunity is afforded for control of the statements made.

There is no reason for believing that these nostrums are any whit different from the "Fulton's Compounds" described in "Nostrums for Kidney Diseases and Diabetes," issued by the American Medical Association in 1917. The usual story came out then, showing how case after case which had "testified" as to the curative virtues of these nostrums, had a little later died of their diseases. Nothing is easier to get than unimpeachable testimonials, and nothing is more worthless. The serious danger lies in a commercial concern advertising self-treatment for such dangerous diseases as nephritis and diabetes and bolstering up its claims by specious testimonials and unworthy medical evidence.

In the absence of any indication of scientific merit in these nostrums, and in the absence of any indication that they differ in content or advertising from the "Fulton's Compounds" of four years ago, it is much to be hoped that no physician will be deluded by their claims or lend a credulous ear to their appeal for exploitation. Under no circumstances is a physician justified in giving a preparation of unknown formula to his patient.

The following paragraph from the Journal of the American Medical Association of January 29,

1916, ought to be re-read and deeply pondered by each physician: "Thus, on a foundation of misrepresentation, fraud and deceit is reared the stupendous superstructure of the 'patent medicine' business—a trade whose millions corrupt legislatures, prostitute no small portion of the press and are a standing menace to the public health. Some day an enlightened public opinion will demand the destruction of this evil—and the dawn of that day is not very far off."

Editorial Comment

The wonder grows that any legislative body can appropriate huge sums for repairing the damage wrought by disease, and yet almost ignore the known means of preventing disease. Public health is purchasable, and is a vastly better public bargain than treatment of disease and death.

You will find about as many doctors friendly to you as you treat like friends. Sir Francis Bacon said that words of praise and recognition were becoming in the mouth of a friend but might be most unseemly in one's own mouth.

Someone should estimate the proportion of the fear of disease which is due to patent-medicine advertising. An enlightened press will yet put these vipers out of business.

The well man is entitled to as skillful diagnosis and advice as the sick man. Does he get it? A clinic for the well, and periodic physical examination, are among the best insurance measures which have yet been proposed.

Noguchi has prepared successfully a vaccine against yellow fever which is now being used to good advantage in the endemic zones. Persons who have been successfully vaccinated with this material are no longer subject to yellow fever quarantine detention in Central America.

County societies and smaller groups will be interested to know that lantern slides and movie films on health topics can be procured from the State Board of Health, the only charge being the prepayment of expressage both ways.

Slides may be had on tuberculosis, child welfare, and communicable diseases. Also films on the following subjects:

"How Life Begins"—4 reels

"War on the Mosquito"—1 reel

"The Trump Card," on milk pasteurization—2 reels

"The Error of Omission" on birth registration—1 reel

"The Rat Menace"—1 reel.

For information relative to "How Life Begins" communicate with the Bureau of Social Hygiene, 214 Lachman Building, San Francisco, and for information relative to the slides on Tuberculosis communicate with the Bureau of Tuberculosis, 726 Forum Building, Sacramento. The other slides and films are on hand at the executive office of the State Board of Health, Sacramento.

Special Article

CONCERNING THE SIZE OF WOMEN PRELIMINARY NOTE WITH SPECIAL REFERENCE TO HEIGHT

CLELIA DUEL MOSHER, M. D.,
Stanford University, Palo Alto, Calif.

A popular belief seems to be prevalent that women are increasing in size. This idea has, apparently, received some confirmation from the study of 4023 of the Stanford women who entered the University during the past thirty years.

This study has been limited to the entrance physical examinations, thus minimizing the influence of the college work; the number of graduate students included in these cases is probably too small to have had any great amount of influence. Thus this group of women is more nearly a fair sample of the population at large rather than of the more limited class who have the benefit of university training. Every available physical examination has been used which gave age, weight, and height of the women at their entrance physical examinations.

The romantic story of the founding of Stanford University gave its opening in 1891 a very wide publicity and attracted, not only students from California and the neighboring states, but also from the middle west and from the far east, both north and south. Only fourteen of the thirty years thus far have been analyzed with reference to the birthplace of the students. The curves for the Californians and non-Californians both show the upward trend of weight and height and the downward trend of the age curves.

The grouping of these cases in four age periods does not obliterate these curves, but shows the same general directions. The accuracy of these results is still further augmented by the fact that the investigator made the physical examinations in 1893, 4 and 5; from 1911 to 1918; and part of the examinations in 1910, 1919, and 1920-21. These years contain 1945 of the total 4023 cases included in this study, and are distributed in the first and second decades as well as in the last. Certain of the remaining records were made by examiners trained by the investigator, thus minimizing the element of error introduced by the personal equation in measuring. The curve constructed from the writer's own measurements shows the same upward trend for height as in the curve based on all of the cases for the thirty years.

The examinations are always made during all hours of the working day, and are usually concentrated in the first days of the opening of the semester or quarter. Thus it would seem fair to disregard the diurnal changes as having any very material influence on the results.

A statistical study has been made of the probable errors of the average heights for the years 1891-2, 1893-4, 1916-17, 1917-18, and the probable errors in the differences of the averages for 1891-2 compared with 1917-18 and for 1893-4 compared with 1916-17. All of the measurements of this last pair were made by the writer. This study shows that the average heights are

based upon series which more than satisfy statistical requirements, and that the differences in heights in the contrasted pairs is so many times greater than the probable error of the differences as to afford statistical assurance of validity.

TABLE I. AVERAGE HEIGHT OF 4023 UNIVERSITY WOMEN IN YEAR GROUPS, 1891-2 to 1920-21 INCLUSIVE

| University Year | No. of Cases | Average Height in Inches |
|-----------------|--------------|--------------------------|
| 1891-2 | 94 | 62.4 |
| 1892-3 | 91 | 63.2 |
| 1893-4 | 89 | 63.0 |
| 1894-5 | 124 | 63.3 |
| 1895-6 | 108 | 63.2 |
| 1896-7 | 127 | 63.4 |
| 1897-8 | 124 | 63.2 |
| 1898-9 | 124 | 63.2 |
| 1899-1900 | 117 | 63.5 |
| 1900-1 | 118 | 63.3 |
| 1901-2 | 104 | 63.8 |
| 1902-3 | 150 | 63.8 |
| 1903-4 | 102 | 64.7 |
| 1904-5 | 39 | 63.5 |
| 1905-6 | 78 | 63.6 |
| 1906-7 | 158 | 63.8 |
| 1907-8 | 180 | 63.6 |
| 1908-9 | 63 | 63.5 |
| 1909-10 | 133 | 63.9 |
| 1910-11 | 193 | 63.5 |
| 1911-12 | 131 | 63.7 |
| 1912-13 | 91 | 63.7 |
| 1913-14 | 146 | 63.7 |
| 1914-15 | 168 | 64.0 |
| 1915-16 | 178 | 63.7 |
| 1916-17 | 170 | 64.0 |
| 1917-18 | 238 | 64.1 |
| 1918-19 | 276 | 63.8 |
| 1919-20 | 157 | 63.6 |
| 1920-21 | 152 | 63.9* |

*Examinations of women entering during the first and second quarters only.

TABLE II. AVERAGE HEIGHT OF 4023 UNIVERSITY WOMEN BY 10-YEAR PERIODS. (FROM TABLE I).

| Years in 10-Year Periods | No. of Cases | Average Height in Inches. |
|--------------------------------|--------------|---------------------------|
| 1891-2 to 1900-1 (Inclusive) | 1116 | 63.2 |
| 1901-2 to 1910-11 (Inclusive) | 1200 | 63.5* |
| 1911-12 to 1920-21 (Inclusive) | 1707 | 63.8 |

*The average for 1903-4, which is obviously in error, is not included in this average of the second 10-year period. If this figure is included the average height for the second decade becomes 63.8, the same as the average for the third period.

To be well within the limits of safety we may disregard the average height for the first recorded year, since the abrupt change (62.4) for 1891-2 to the average for the succeeding years is so great as to excite some suspicion of its accuracy, especially as we have no data showing the relation of this low average to the averages of the years preceding.

We may, therefore, conclude, pending further investigation, that, as illustrated by the changes recorded in 4023 women entering Stanford University during the past thirty years, that the average height of the women of today has increased from one to one and one-tenth inches.

There is also a definite increase in the average weight. The detailed data of this part of the investigation will be presented in a later paper, together with the evidence which shows that this increase in weight and height has occurred in spite of the fact that the average age of the women entering the University has grown less. The racial as well as economic importance of these changes, which point to a more fully developed and more perfectly functioning type of woman, can hardly be overestimated.

RELATIONSHIP BETWEEN TRAUMA AND MALIGNANT DISEASE FROM AN INDUSTRIAL VIEWPOINT

W. OPHÜLS, M. D., San Francisco

Before entering upon a discussion of the relationship of trauma to malignant disease from the point of view of one who wishes to determine fairly the connection of an industrial accident with the subsequent development of a malignant growth, it may be well to look upon the question from a purely scientific standpoint and to ask ourselves what warrant is there to assume, that there may be such a connection.

It is common knowledge, that our information in regard to the etiology of tumor is woefully deficient. What the final cause of them is, if there is any single such, we do not know, but we are gradually learning to connect up the development of tumors with other types of proliferative processes of which we have a better understanding; may they be due to abnormalities in development, to inflammation, or may they be connected with the more normal processes of hypertrophy and regeneration. The general impression is, that any change which is associated with tissue proliferation may terminate in the development of true tumor. Other things being equal this transformation occurs the more readily the more actively the tissues are proliferating and the longer the tissue proliferation has continued. It is also evident that this transformation is fortunately a rare occurrence. Pathological tissue proliferations due to one cause or another are exceedingly common. There is hardly any human being, or any living organism for that matter exempt from them, but tumors we meet with only occasionally. It is this which has made many investigators feel, that something new must happen to convert these ordinary tissue proliferations into tumorous growths, but on close analysis may we not find, that the difference is merely a quantitative not a qualitative one, i. e., that after all the same process continues only in a vastly exaggerated form in a more or less predisposed individual? The existence of intermediate stages, where even the best expert with all modern technical means at his disposal cannot decide whether they should be classified as tumors or whether they still belong to the other pathological conditions mentioned seems to point this way.

From these theoretical conditions it will be evident that trauma can contribute to the development of tumors in so far as it causes tissue proliferation and, since any break in continuity, such

as is likely to occur as a result of the trauma, is sure to be followed by regenerative and often by inflammatory proliferative processes, the possibility certainly exists that these may go on to the development of true tumors.

It would also appear, as if repeated and continued traumatic influences would be more likely to terminate in tumor production than a single trauma followed by a reaction of limited duration, and this surmise is amply born out by practical experience. The most numerous and best authenticated cases of post-traumatic tumor formation belong to this group. To mention but one example; so many cases of carcinoma arising in scars or chronic ulcers from old burns have been reported in literature, that there cannot any more be a question of the etiological relation of the one to the other, and the same is true, as we all know, of other types of chronic ulcerations of the skin and mucous membranes in the production and maintenance of which trauma may play an important role.

The relation of single trauma to tumor is much more doubtful, and it is quite generally stated that there is no case so far recorded in literature which proves this connection with scientific accuracy, but that there is sufficient evidence to make it justifiable to give to patients for whom the question of insurance depends on our decision, the benefit of the doubt.

It is interesting to follow the development of our knowledge in this field and to notice how gradually the circumstances under which such a connection is assumed have become more and more restricted, and our attitude toward the question more and more conservative.

Samuel Gross¹ in 1897 made the statement, that among the 144 cases of sarcoma of the long bones which he had been studying one-half of those in which the etiology was recorded were due to traumatism. They could be traced to blows, falls, kicks, sprains, fractures and other injuries.

A thorough discussion of the problem commences with an elaborate paper of Loewenthal,² from Bollinger's laboratory in Munich in 1875 which includes the presentation of 800 short case-records without much critical analysis of them, however. For this reason the majority of them are worthless from a scientific point of view, but at the same time he reports a considerable number of very interesting and suggestive observations as, for instance, several cases in which sarcoma developed at the site of old fractures and in old gun-shot wounds.

Coley³ follows in 1898 with an article on the influence of injury upon the development of sarcoma. He studied 70 cases of sarcoma among which there was a history of trauma in 46 (27%). A careful analysis of the records of the 46 cases shows, that not more than one-half of them are fairly convincing. Coley develops the idea; that the trauma localizes the unknown cause of cancer as it is apt to do in infectious diseases like tuberculosis.

Another extensive, rather early publication (1906) on our subject is that of Roepke⁴ who

reports on 800 carcinomata and 186 sarcomata. He also fails in the critical selection of his cases especially where a single trauma had occurred.

Since then with the introduction of protective legislation in industrial accidents in Europe and in our own country gradually certain rules have been laid down which must be fulfilled before the development of a tumor can be looked upon as the result of an industrial accident. The whole subject was thoroughly discussed at the second international conference on cancer at Paris in 1910, by Bérard⁵ and by Thiem,⁶ both eminent authorities in our subject in their respective countries.

These rules have been variously formulated, but there is a fairly good consensus of opinion on the essentials as follows:

1. The occurrence of the trauma must be proved.

2. The trauma must have been severe enough to appear effective.

3. The growth must develop at a place likely to have been injured by the trauma.

4. It must be reasonably certain that the traumatized part was normal before the accident.

5. The time elapsing between the trauma and the appearance of the tumor must agree with our scientific experience in the rapidity of the development of the particular kind of tumor under consideration. The time must not be too short, not less than several weeks, nor too long. The outside limit is usually given at about two years, but a reasonable connection may be assumed even in cases in which the interval is much longer, if there are symptoms which bridge over the intervening period.

Condition 4 is the one which is most difficult to fulfill, and it is the one which must be fulfilled, if a *scientific* proof of the causal relation of trauma to tumor is to be furnished.

Condition 5 is the one that is most frequently sinned against in decisions in regard to industrial accidents. This is especially true in regard to sarcomata of the bone. If a noticeable tumor in this region follows a comparatively trivial injury in a few days, it is almost certain that the growth preceded the injury. This is also true in cases in which the injury to the bone was unusually painful or caused more damage than one would suspect from its nature.

As a result of the more careful analysis of the cases the percentage figures of tumors really ascribable to injury has been decreasing very much. In his hand-book on "accident medicine," Kaufmann⁷ states that there seems to be a reasonable connection between trauma and benign tumors in two per cent., between trauma and carcinoma also in about two per cent., and between trauma and sarcoma in five per cent. of the cases, and Loewenstein⁸ in a very instructive article from Czerny's clinic informs us that the statistics of the Prussian army and navy from 1899-1907 reveal a proportion of one case of post-traumatic malignancy in 15,000 accidents.

Our general conclusion then would be, that a single trauma not followed by complications is a rare cause of tumor, and each individual case

must be subjected to a careful analysis before arriving at any conclusion. It is evident, that for such an analysis the data must be as complete as possible and very specific in regard to the findings at the time of the injury and as to the events which followed. It is unfortunate that many physicians who treat industrial accident cases do not as yet seem to have learned this lesson. A roentgenogram taken immediately after the injury would clear up many a doubtful case.

After these general considerations I may be permitted to briefly touch on a few special points.

Of benign tumors produced by trauma there have been mentioned: fibroma, lipoma, neuroma, osteoma, and enchondroma.

Neuromata are always traumatic and are not true tumors.

Many of the so-called osteomata are also not true tumors, but are hyperplastic processes associated with bone development following injury to the periosteum and the adjoining soft parts. The bony growths in the muscles of the thigh following injury resulting from horse-back riding are excellent examples of this type of pseudo-tumor.

I also believe that the very nature of lipomata makes the possibility of a traumatic origin of them exceedingly doubtful.

Fibromata, on the other hand, occasionally result from trauma, and the number of fairly well-authenticated cases of enchondroma following trauma is really quite astonishing. In their case the question naturally arises, whether the trauma did anything more than to stimulate the growth of an already pre-existing abnormal mass of cartilage, perhaps a piece of this tissue which had been misplaced embryologically. From our general knowledge of these tumors this appears to be very probable, but even such an occurrence would entitle the patient to compensation.

Sarcomata are supposed to be due most commonly to single trauma, whereas carcinoma is said to follow more frequently repeated and continued injury.

Among all sarcomata the sarcomata of bones are most frequently referred to trauma and, theoretically, the interrelation seems quite plausible, because any injury to bone, and particularly a fracture, is followed by the most remarkably vigorous production of new tissue. In fact the callus-production is often so exuberant, that it is difficult to decide, even microscopically, whether one is dealing with normal regenerative processes or tumor. On the other hand we have to be especially careful in these cases, because, since these growths are usually situated deep in the tissues, attention is often first called to them by some injury, trivial or severe, as the case may be, and also the existence of sarcoma in the bone predisposes the bone to ready occurrence of fracture, and other disturbances which may follow injuries. Kaufmann⁷ estimates that twelve per cent. of the sarcomata of the bones are of traumatic origin. On the basis of a careful scrutiny of the cases reported, I personally believe that this percentage figure is still too high, but even the most skeptical observer must acknowledge that there are a

certain number of reports of such cases which are thoroughly convincing.

There is quite a literature on the relation of the development of glioma and of gliosarcoma to trauma, ever since the possibility of their traumatic origin was first suggested by Virchow. On account of the location of these growths, a decision in this matter is especially difficult and often altogether impracticable. I believe that a careful consideration of the probable rate of growth of such a tumor compared to the time which has elapsed since the injury would be very illuminating in many of them.

With the malignant tumors of the internal organs we encounter the same difficulties, and in very few of them is it possible to establish, even with a certain degree of probability, that they are the result of trauma.

Of the carcinomata of the surface epithelium it has already been stated that they follow chronic injuries very much more commonly than a single trauma, and there are, indeed, very few reports in literature in which the latter seems to be at all likely to have occurred.

Among carcinomata, carcinoma of the breast is most commonly referred to trauma by the patients, and yet the number of even fairly convincing reports of its traumatic origin is so small that some who have made a special study of this problem assert that there is no evidence to connect the development of these tumors with trauma.

So far as I have been able to ascertain, the carcinoma of the testicle is the only type of carcinoma which is frequently caused by a single more or less severe injury. This includes the so-called round-celled sarcoma of this organ, because careful histological examination reveals that most of these so-called sarcomata arise from the epithelium of the seminiferous tubules and, therefore, should be classified as carcinomata. The frequency of their traumatic origin, to my mind, has not been sufficiently emphasized, but anyone who has had experience with these growths will readily confirm it from personal experience, and a study of the case-reports collected in literature reveals the same thing. When we consider the constant and very active multiplication of the spermatogenous cells under normal conditions we may readily understand why a thorough, even single disturbance of them may lead to such disastrous consequences. The mere fact that these growths are usually encountered in comparatively young individuals, in the prime of sexual activity, lends strong support to this theory.

It would appear then, that in estimating the probability of a connection between trauma and the development of a true tumor, the collective experience so far obtained in the particular type of tumor concerned should also be carefully taken into account.

References

1. S. Gross. Sarcoma of Long Bones. Amer. Jou. of Med. Sci. 1879. II. 1.
2. Loewenthal. Ueber die traumatische Entstehung der Geschwulste. Arch. f. Klin. Chir. 1895. II. 1. 267.
3. Coley. The Influence of Injury upon the Development of Sarcoma. Ann. of Surg. 1898. XXVII. 259.
4. Roepke. Die Bedeutung des Traumas fuer die Ent-

stehung der Carcinome und Sarcome. Arch. f. Klin. Chir. 1906. LXXVIII. 201.

5. Bérard. Traumatisme et cancer. II. Intern. Conference on Cancer. Paris 1910. II. 355.
6. Thiem. Trauma und Geschwulstbildung. II. Intern. Conference on Cancer. Paris 1910. II. 491.
7. Kaufmann. Handbuch der Unfallmedizin. 2d ed. 1915. p. 141.
8. Loewenstein. Zur Frage der posttraumatischen Krebse. Beitr. z. Klin. Chir. 1911. LXXIV. 715.

Original Articles

HOW CAN MEDICAL SERVICE BE IMPROVED?*

By MORTON R. GIBBONS, M. D., San Francisco.

To attempt to cover this subject in one quarter of an hour without making some form of explanation or protest might be to acknowledge that medical service can be very little improved, if any. The contrary is the case. It may be vastly improved.

There is no intention in this paper to offer any suggestions for improvement in phases of the law itself. Whatever offering is made deals with the machinery now in use.

My purpose is to take up for consideration a number of subjects, offering briefly some suggestions.

The importance of Industrial Medicine and Surgery is not appreciated by the rank and file of the profession. It does not embrace simply the treatment of industrial injuries. It embraces all the phases of social medicine. The colleges are establishing courses in the subject. It embraces a large proportion of the total surgical and medical work.

The societies are taking it seriously. Let the individuals do likewise. Let the individuals consent to understand the problems. There are still frequent signs of lack of understanding. Many men would be saved much unhappiness if they realized for one instant the difference between the Industrial Accident Commission and the State Compensation Insurance Fund and other insurance companies. Some doctors will take the statements issued to them and the assertions made to them by insurance companies as Gospel. The doctors always have the right to recourse to the Industrial Accident Commission for authoritative information and suggestions.

We can make our work more scientific by early physical examination of selected cases. The hardest cases to fix responsibility in are those in which a physical impairment is superimposed on an injury and outlives it. Osteo-arthritis, tabes, lues, age defects, nephritis, diabetes; there are scores of ailments which are included by the injury in the results of injury. The Industrial Accident Commission has proposed to require an early examination in all injuries in:

1. Persons over 60 years of age.
2. The infirm or those of poor physique.
3. Injuries to head or thorax or abdomen.
4. Serious injuries of any kind.
5. Injuries which may involve nerves.

The committee of the State Medical Society and the committee of the insurance companies con-

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

sider such an exaction inexpedient. The arrangement is that the surgeon will wait for authorization by the employer, insurance company or Commission, which will have been elicited by a suggestion from himself. A special fee is provided. It is devoutly hoped that surgeons will adopt this plan as a routine.

X-RAY EXAMINATIONS

A case has just been remanded by the Supreme Court to the Industrial Accident Commission for further consideration, because the Supreme Court, mind you, discovered a fracture involving the spinal column, not previously found because no previous X-rays had been taken.

The Industrial Accident Commission *requires* X-rays in all bone cases and *possible* bone cases.

We have among us as flourishing as ever the contract doctor. He works nominally for 20 or 25% less than Fee Schedule, and for actually 50% or more less than Fee Schedule, because the provisions for increase charges are not allowed him. His work is sold wholesale, and a contractor lives on the margin which he is entitled to for work done. Naturally, we don't expect high-grade surgery, treatment, or results, and we don't get them. Consideration of this matter is a neglected function of our Medical Societies. The pending advance in fees will produce a larger margin for the contractor and a larger number of contracts unless the Profession watches out.

Sometimes we see the result of poor surgery. Men poorly equipped will attempt to handle cases which are too much for them. Men who may be well equipped in some lines will be required by their contracts to handle cases they are not trained to handle. This happens especially in contract work. The remedy is obvious. The Commission may have to become "hard-boiled" to accomplish justice. A degree in Medicine is not enough qualification. No surgeon is too good. Is it not true that permanent disabilities cost more than the best surgery?

Poor surgery is not always attributable to poor surgeons. The fault of some most skillful surgeons is impatience. The recent army experience is teaching a telling lesson. Patient application of physical therapy will often effect a functional cure where radical surgery would have destroyed all chances of anything but a makeshift. The Commission demands *function* rather than *appearance*.

The rest of my paper will be devoted to phases of the psychology, or human nature of Industrial Accident Surgery, and to Physical Therapy and its branches. These subjects are closely interwoven.

Right psychology is probably lacking more often than good surgery. The Industrial Accident Commission sees a very large proportion of the traumatized neurasthenics. It feels that a large proportion of these unfortunate cases could be forestalled and the condition prevented by right and early treatment. There are many circumstances which conspire to produce these cases. Lack of unity of interest of the injured, the employer, or his insurance representative, and the surgeon is of great importance. Greatest divergence

of interest comes from the injection of the middleman, or insurance carrier. There is too much business and too little sympathy. An employer may be wholly in sympathy with, and have a laudable desire to care for the welfare of, his injured employe, but the middleman, by his methods, with which you are all familiar, may prevent and block that interest and solicitude which would be of value.

Then there is delay in securing medical service. This generally cannot be helped and in not many instances is it harmful except from a psychological standpoint.

Another point is that the surgeon apparently works for someone other than the injured man. He is paid by another and this fact tends to create suspicion in the mind of the injured. The suspicion may not be justified, but it is a reality to be coped with nevertheless. Choice of one's own surgeon would lead to contentment and would solve some of the difficulties. While this would help some difficulties, and the patient would be treated by one who has his confidence and who wants to please his patient, it is not practicable under present arrangements. Results in experience have actually been even poorer than through choice of physicians by employer. This is because the doctor so chosen has not felt a responsibility to the Law and the State which is necessary. The only alternative is for physicians chosen by employers to treat the injured in the same personal manner as though the injured were paying the bill and were the only one to be pleased. The doctor must show himself to be in sympathy with the injured and must show that he is his proponent. He must have the confidence of the injured.

Improper environment is another factor. The solicitous friends, in misdirected kindness, give the idea to the injured that he is terribly hurt. He is made to feel abused and that his injury is worse than it actually is. His lodges and unions serve the same purpose. (In connection with this last feature comes the incentive to get well or the reverse. Sometimes the injured receives benefits which encourage him to invalidism. Red-blooded men are not susceptible to influence of this kind, but unfortunately we have all kinds to deal with.)

The surgeon, the insurance man and everyone who comes in contact with the injured must understand the power of suggestion and the particularly strong power of bad suggestion. There must be no antagonism; there must be a feeling of security in the mind of the injured. The injured must know his rights; should be advised of the probable course which his case will take; what payments he may expect, and what his condition is, very early in the course of his disability. I cannot understand the policy which prompts surgeons to impart no information to these patients. The very first thing that such procedure incurs is lack of confidence, and the belief on the part of the injured that the surgeon is concealing a condition which is probably very serious. It is hard for the Industrial Accident Commission to get these pre-conceived notions out of the patient's mind. It is a daily occurrence, that men come to

the Industrial Accident Commission having had fractures, for instance, not knowing what the character of the injury has been. The frankness with the patient which I advocate is not my own idea, but is the unanimous opinion of authorities who have much to do with these subjects.

Try to appreciate this situation. A man has received a severe injury, but one in which no permanent disability is likely to develop, a fracture, we will say. He is kept in ignorance of the nature of his injury. It comes time for him to work, which will do him the most good. It is the only thing which will forestall permanent disability. His joints are stiff from non-use incident to treatment. He is sent to work. The surgeon has said he can work. He has misgivings because he has pain. The surgeon says the pain is nothing, belittles it, and derides the man. The suspicion aroused by ignorance is confirmed by his own experience of pain and weakness which he is now sure the surgeon knows nothing about. He is now sure the surgeon has been wrong from the start. He is apprehensive, and if properly constituted, is from that time on a traumatized neurasthenic. How much better an early establishment of confidence, and a frank forecast of the case, and explanation of phenomena!

A convalescent is generally pitchforked into his work again. The line of demarkation between ability to work and inability to work is not a sharp line. It is a broad, hazy, and ill-determined zone. It depends on the disability,—the requirements of work,—the character of the convalescent,—the character of the boss.

A form of irritation to which many of the injured are subjected is the attitude toward them and the treatment of them by insurance company representatives, representatives of employers and doctors. It costs nothing to be a human being in the treatment of one not so advantageously situated as one's self. It always strikes me that an individual who treats another in a cavalier manner is laboring under a species of defense reaction. It may be that he cares so little for other people that he prefers to show his contempt in that manner, but I am convinced that a great many people misbehave in an effort to show a superiority which they do not feel. It is an abuse of power which is cowardly. In addition to this, it is a waste of time. A sympathetic attention to one in an inferior position will elicit the desired information and expedite the desired business in a way which no other method of treatment can possibly do. "Contentment is realized only by those who work."

Interwoven with the subject of psychology is the whole group of physical and occupational therapy. It has been said, and the statement is probably substantially true, that the freedom of the army and navy casualties from traumatized neurosis was due to the environment. The results obtained can be attributed to the unusual environment and to the anticipation most of the wounded had, of discharge. The vast majority of soldiers have looked toward discharge from the army as their goal. There was a veritable

stampede in this respect. The wounded have looked upon discharge as a prize for accomplishment of recovery. Immediately after the armistice, when the bulk of the wounded from overseas was returning, orders of the Surgeon-General provided that no soldier injured in line of duty should be discharged until he had received all the benefits which the army could give him. The soldiers, knowing this, and with a burning desire for discharge within them, made every effort to restore function and secure release. Such conditions cannot be stimulated in the industrially injured, but the illustration indicates what psychological value incentive to get well has. The football player injured at the beginning of the season is striving with might and main to get into the game again. He will submit to any kind of painful treatment that promises restoration. To take the place of a natural incentive, or an artificial incentive as that in the case of the soldier cited above, there is now the system of occupational therapy, physical therapy and re-education. This system was developed in this country in the army hospitals. While it has been known for many years and has been practiced for many years in other countries than ours, the war experience has first made it really known to the Profession of this country. I find that the value of this work has been impressed, to any marked degree, upon a comparatively few men of our profession; to many others it appears a casual and more or less theoretical thing; by many it appears to have been unnoticed, certainly unappreciated.

The Industrial Accident Commission is committed to the theory of this physical treatment and demands the application of physical treatment in cases where it may reasonably be expected to produce improvement. (There are three conditions which do not permit of this system having a fair trial. They are, (1) lack of equipment and personnel, (2) lack of proper expert guidance, (3) lack of discipline of the injured.)

For the first condition, the only answer is that those having the power and authority must understand the economic value of this line of treatment and must establish adequate departments fully manned. Of the second condition, I will say that the average surgeon capable of doing the necessary surgical work is not a proper guide to adequate physical therapy. He does not know the possibilities of physical therapy unless he has studied it. He can no more be an expert in that than he can in X-ray diagnosis. My plan would be to have a physical therapeutic specialist connected with each surgical group to whom each case would be sent and with whom each case should be seen in consultation by the operating surgeon. The specialist would learn the exact condition and would then outline physical therapy to be applied. He would watch the course of the case and make the necessary changes, reporting as necessary to the surgeon. The present method is, and I know it from my own experience, that the surgeon is likely to leave the whole question and management of physical therapy to a physical therapist who has no training except in his

own lines of manipulations. I dare say you will not find one surgeon who is conversant with the fundamentals of physical therapy, or even what function may be restored in a given case.

Now, we will discuss occupational therapy. This theoretically begins as soon as the patient is out from under his anaesthetic. It is desirable to keep his mind and his hands busy at occupations compatible with his strength. It keeps him from finding time to count the fly-specks on the ceiling and the metaphorical fly-specks on everything coming in contact with him. The more nearly complete is the consumption of the patient's time, the more the benefit.

In the Massachusetts General Hospital, a recent investigation, the character of which I may not divulge, has shown that the system embracing occupational therapy, physical therapy and work treatment has developed a pecuniary saving of approximately one-third, besides more quickly rehabilitating and more completely rehabilitating the injured. I might say in this connection, that the experience of the Massachusetts General Hospital was not confined to injury cases, but a saving in time and money was developed through the work treatment in ordinary medical and surgical cases. You are familiar with this subject, the bed-side work, the war work, the shop work. But it requires specially-trained aides to do this work. In all of this phase of treatment there is too much tendency to employ makeshifts. If you are going to establish a physical and occupational therapeutic unit, get expert advice. Get expert technicians and aides. Don't get those untrained to their duties and try to adapt them. The rightly-chosen woman can produce ten times as good results as some ready-made, strong-arm man.

There is a host of details I might go into and illustration I might take up. This must be omitted.

- I would especially emphasize the subjects of:
- Physical examination in selected cases.
- Making use of the Industrial Accident Commission for information.
- X-Ray examination in possible bone injury.
- Function more important than appearance.
- The restorative and adaptive power of nature.
- Encouragement of frankness in dealing with the injured.
- Suggestion, good and bad.
- Humanity to expedite all work.
- Physical therapy by experts selected for proper qualities.
- Necessity for guidance in physical therapy.
- Pecuniary saving through therapeutic measures.
- The extraordinary effectiveness of physical therapy if properly applied.

BILATERAL NEPHROLITHIASIS.*

By GEORGE W. HARTMAN, M. D., and SAMUEL A. GOLLMAN, M. D., San Francisco.

Recent reports by various observers of the incidence of bilateral nephrolithiasis are very much in agreement. Braasch¹ reports sixty-two cases among five hundred and sixty-six operations for

calculus, a percentage of 12.3. Israel,² in an exhaustive monograph on kidney and ureter stones, reports sixty-four cases among five hundred and seventy-two operations, or 11.2 per cent.

Our data includes forty-two cases of nephrolithiasis of all types. Of these, ten were bilateral, a percentage of 23.8. If reduced to the proportion operated it becomes 29.4 per cent. It is interesting to compare these figures with those quoted by Krotoszyner³ in 1909, in which he reports three cases but gives no statistics of his own. He quotes Israel's⁴ figures at that time as 27 per cent.; Watson's,⁵ 30 per cent.; Kummell's,⁶ 30 per cent.; Kapsamer's,⁷ 18 per cent. at operation and 30 per cent. at autopsy. It seems strange that with the more crude methods of diagnosis at that time, that the incidence should be greater; one would be inclined to accept the autopsy figures as accurate, against which the argument is made justly that, with our improved methods of diagnosis and treatment, fewer cases of bilateral nephrolithiasis come to autopsy now than at that time. Thirty-two of our patients were males, ten females; the youngest was twenty-two, the oldest eighty-two, the average age forty-three years. Duration of symptoms ranged from two days to thirty-five years. The location of stones was on the right side in fourteen, on the left side in sixteen, bilateral in ten, one of which was a horseshoe kidney. In two cases the stones were found in the bladder, whither they had descended.

Symptomatically, bilateral nephrolithiasis does not differ in any essential detail from unilateral; in fact, in none of the cases reported was the double involvement suspected at the start, and it was usually a matter of surprise to learn that we were dealing with involvement of both kidneys.

DIAGNOSIS

A carefully prepared history is the first step to diagnosis, and though it is not sufficient in itself to draw conclusions, it establishes clues upon which one formulates theories. Ochsner⁸ goes so far as to say: "The most important element in the diagnosis is a carefully-written history taken by the surgeon himself."

In reviewing these cases occurring over a period of years, we were struck by the different conceptions of internes and others as to what constitutes a "history." Some, taken by good men, while adequate for the case in question, were almost valueless for the purpose of statistics. In genito-urinary work, which can be standardized within certain limits, we find it desirable to use a chart form in which certain recurrent symptoms are so arranged that tabulating is rendered easy. For instance, our chart provides spaces covering "Frequency of urination; day—night: Pain; when—before—during—after: Blood; bright—mixed" and so forth. It has been contended that filling out blanks is a lazy man's way of taking a history, but when one is compiling the data for study, it is certainly easier than to wade through pages of wretched writing to get at essentials.

SYMPTOMS

The symptoms of renal calculus are striking to one used to interpreting them, and though the novice will frequently attribute those of other origin to the kidneys, true renal calculi set up a

* Read before the Forty-ninth Annual Meeting of the Medical Society, State of California, Santa Barbara, May, 1920.

syndrome of their own which seldom leads to error. Mistakes in diagnosis will happen, however. In our series, four patients had previously been operated for "appendicitis" and two for "salpingitis." One had had three laparotomies successively for "appendicitis," "salpingitis" and "adhesions" by two very capable surgeons. This, however, is not always the fault of the surgeon. Braasch¹ reports an instance in which the patient complained of gastric symptoms only, and was operated for acute duodenal ulcer. It is essential in formulating a diagnosis to take into consideration all of the refinements of detail and technic at present available, and to verify all data to the point of exclusion. Only by so doing can one approach the final conclusion with the full moral preparation to proceed.

In this series the patient's presenting complaint was sometimes illuminating; twenty-seven complained of pain; five of haematuria; six of difficult and frequent urination; two of "kidney trouble"; one of rheumatism, and one of "stone in the kidney." Studying the pain further, it was found on the affected side in twenty-one instances; in the back in five; in the penis, bladder and opposite side each in one. Radiation of pain was noted in over one-third of the cases. It was mentioned as radiating to the thigh and groin, testicle, bladder, forward, and once to the opposite side. Twenty had one or more attacks of true renal colic. Urinary frequency was increased in twenty-six cases, 61 per cent.; during the day, in six cases; at night, in two, and both day and night in eighteen. While blood was found microscopically at some time in practically all the cases, it was visible to the patient in only twelve instances. Physical examination rarely adds positive findings, but is of value in excluding other conditions. Occasionally a kidney was palpable, but not more frequently than the average. Unless the kidney be markedly enlarged, it is not apt to be felt and a patient who has just gone through an attack of renal colic is not very apt to relax his abdominal muscles sufficiently to enable one to feel much. In most cases where the kidney was palpable it was in women, and it was as frequently felt on the opposite side as on the affected one.

Cystoscopic findings differed; they were negative in the majority of cases, twenty-three, or 54 per cent.; 46 per cent. showed a variation from an appearance of edema of the ureteral orifice or a patulousness and congestion, to actual discharge of blood and pus. In one instance a stone was seen impacted in the ureteral orifice. One case showed a marked cystitis. Ulceration of the bladder mucosa was never seen, a point for differentiation from tuberculosis. In general, cystoscopic findings beyond a patulous ureteral meatus are not especially illuminating. Functional tests showed reduced activity on the affected side in all unilateral cases, sometimes to the point of complete absence of secretion. All of these showed a marked improvement after the removal of the stone.

The diagnostic feature par excellence, however, was the radiogram. We prefer to study our cases previous to making the X-ray. Having them diagnosed by others takes away the incentive to work and one is apt to lean too heavily upon the ra-

diologist. Twenty-nine of the cases, or 69 per cent., were confirmed by the X-ray. In four which were not found by X-ray the subsequent passage of stones confirmed the diagnosis; two additional cases were confirmed by operation.

Proper preparation is essential for good radiograms. Every radiographer has his own methods, which range from nothing at all to very elaborate cleansings of the alimentary tract. We get very good results by giving half an ounce of castor oil on the morning and evening of the day before, clear fluids with no milk that day, and no breakfast on the day the plate is made. No enemas are given as they tend to form gas. It is quite possible to get good pictures without any preparation in individuals not too stout, but it is a great disappointment when the plates are developed to find the bowel full of fecal matter or gas; hence we prefer a standard preparation. Regardless of the location of symptoms, no X-ray is adequate which does not include the entire urinary tract. This was especially borne out in the experience with the bilateral involvements. Neither is any X-ray good which does not show the usual structures, bony and soft, especially the psoas muscles.

Pyelograms do not aid much in diagnosis, but are of value in determining the amount of renal destruction and the type of operation advisable. It is a rule not to inject a kidney if there be an obstruction beyond which a catheter cannot pass. The solution is apt to be retained, causing much pain and possible renal destruction. After making a pyelogram, if any large amount of fluid has been used, it is customary to wash it out with sterile water or normal salt solution. Many of the unfavorable reactions due to pyelography, some of which are mentioned by Kretschmer,² have been overcome by the use of the alkaline halogen solutions and the gravity method and there is no objection to this manoeuvre, when indicated. Wax-tipped catheters are of more value in stone in the ureter than in the kidney, but one must be careful that the scratch does not come from the instrument itself.

Twelve patients passed stones either spontaneously or by manipulation; seventeen were operated; of these seven had pyelotomies; one, ureterotomy; nine, nephrectomies. The last because there had been so much renal destruction that it was impossible to save the kidney.

SUBSEQUENT HISTORY

One patient died of anuria following bilateral pyelotomy in a horse-shoe kidney, an operative mortality of 2.3 per cent.; two died of intercurrent disease; three were improved; twelve were cured; one, not operated, who passed two stones spontaneously, subsequently developed a bilateral pyelitis; and one (No. 5 below) returned with stones in the opposite kidney and ureter. Twelve reported no return of symptoms; twenty-two could not be traced; one who returned complaining of pain in the remaining kidney showed a compensatory hypertrophy, but no sign of stone.

In the ten bilateral cases, including one horse-shoe kidney, all were males. The age ranged from twenty-two to fifty-six, the average being thirty-five years. All complained of pain in the back, three also having pain in the left side. In two

instances it radiated to the bladder; colic was present in four. Increased urinary frequency was present in all cases. Blood was present macroscopically in two. In all patients the diagnosis was confirmed by X-ray. Five were operated; there was one nephrectomy and four pyelotomies.

Choice of operation in bilateral lithiasis must be based upon the general status of the case; while in general the advice is valid to operate upon the better side first, it is not always feasible. Case No. 1 had bilateral stones and pyuria and a chronic cowperitis. As his symptoms were all referred to the left side, this was operated, though the poorer of the two. Subsequent examination of segregated urines showed the operated side free from pus. The opposite side is still to be operated. Case No. 2 showed a silent stone at the lower pole of the right kidney and a very large one in the left pelvis; also a markedly enlarged kidney and pelvis on this side. Cystoscopy was almost impossible on account of the gushes of pure pus from the left ureter. The diagnosis was bilateral nephrolithiasis with left pyonephrosis. The patient was urinating hourly day and night, his symptoms had been present for twenty-five years, and he was a nervous and physical wreck. Had the better side been operated, the opposite kidney would not have been adequate for carrying on the renal function. Upon exposure, the left kidney was found to be a huge pus sac filled with stones and it was removed. The patient is in splendid condition and will go on indefinitely with his one silent stone. He has a few blood cells and a good amount of albumen in his urine. Should it become necessary to operate upon his one remaining kidney he is a better risk now than before his first operation. It is interesting to note that two of his sisters in a family of nine have a history of calculi.

Case No. 4 is quite a fat man who has large stone shadows on both sides. He has a marked pyuria with moderate frequency. Judging from the pictures, there is a large amount of renal destruction on both sides and one would hesitate to interfere. He is fairly comfortable and reports occasionally for X-rays. The stones are increasing in size slowly.

Case No. 5 is interesting in that the patient came in originally in 1915, when a diagnosis of left renal calculus was made. He refused operation and was lost sight of until last week, when he came in again, this time complaining of pain on the left side, radiating to the right. Cystoscopy found the right catheter impeded about six centimeters above the uretero-vesical junction. The X-ray showed three shadows like a rosary at that point. There is also a shadow the size of a hazel nut in the pelvis of the same side. A large shadow completely fills the pelvis and calyces on the left side. There is an anuria on the right side and a pyuria on the left; attempts to dislodge the stones in the ureter show some success. If there is a real anuria present on the right side it will be essential to work quickly. An interesting complication is a skin disease which has accompanied his four attacks of typical colic. This varies from a simple peeling of his hands to a desquamation of almost his entire body.

Case No. 6 has a left nephrotomy in 1905, and though X-rays in 1915 showed large calculi in the right side and ureteral catheterization showed no urine on the left, the patient was quite comfortable at his last appearance.

The remaining cases present nothing of especial interest. Hollander¹⁰ accounts for the formation of bilateral calculi by a paralysis of the renal pelvis and ureter following injuries of the spinal cord. Careful study of our bilateral cases failed to elicit any history of trauma.

SUMMARY

1. Bilateral nephrolithiasis does not differ essentially in history and symptomatology from unilateral.
2. The taking of a careful history is the first essential to the proper study of the case.
3. The symptoms of renal calculus are frequently misinterpreted, hence the necessity of correlating all findings.
4. Pain is a constant symptom, varying from a dull ache to colic; radiation of pain is the most suggestive.
5. Frequency of urination was the most common symptom.
6. Physical examination is of most value in excluding other conditions.
7. Cystoscopic findings are not striking.
8. Function is usually depressed on the affected side.
9. The X-ray gives the best evidence, but is not infallible.
10. It is important to have proper preparation for X-rays and to take the entire urinary tract.
11. There is no objection to a pyelogram if the shadow casting fluid can be drained off.
12. In bilateral involvement, the better side is usually operated first, unless distressing symptoms are coming from the poorer side.
13. Patients with large calculi on both sides may do well if left alone.
14. The fact that some individuals are calculus formers suggests caution in operating and a guarded prognosis.

References.

1. Braasch: Boston Medical and Surgical Journal, CLXXVIII, No. 9.
2. Israel: Folia Urologica, Oct., 1918, No. 8.
3. Krotoszyner: Am. Journal Urology, Feb., 1909.
4. Israel: Chir. Klinik d. Nierenkrankh., 1901.
5. Watson: Ann. of Surg., Sept., 1907.
6. Kummell: Zeitschrift f. Urologie, March, 1907.
7. Kapsamer: Nierendiagnostik u. Nierenchir., III, 1907.
8. Ochsner: J. A. M. A., Vol. 73, No. 15, Oct. 11, 1919.
9. Kretschmer: Surg. Clin. of Chicago, Vol. 1, 1917, p. 1001.
10. Hollander: Berlin Klin. Wochensch., Dec. 1, 1919, 56 No. 48.

URINARY INCONTINENCE AND ITS OPERATIVE REPAIR.*

By JAMES R. FILLON, M. D., San Francisco.
Instructor in Genito-Urinary Surgery, Stanford University Medical School.

Incontinence of urine results from inability of the sphincters to prevent the involuntary escape of urine from the bladder. There are a number of persons having varying degrees of urinary incontinence due to spinal cord diseases, tuberculosis and traumatic lesions, who are forced to

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

wear a urinal on their person. The cystitis which usually accompanies these conditions with its complications and sequellae and the stench emanating from the urinal, impresses one with the miserable condition of these patients and the readiness with which they will submit to any procedure which offers some small hope of relief.

True incontinence has been classified by Guyon as follows:

- A. Without material lesions of the urinary tract.
 1. Incontinence from nerve lesions.
 2. Incontinence from nervous affections.
 3. Incontinence of children.
- B. With material lesions of the urinary tract.
 1. Without retention of urine.
 - a. Mechanical incontinence.
 - b. Incontinence of tuberculosis.
 - c. Traumatic incontinence.
 - d. Incontinence from urethral insufficiency.
 2. With retention of urine.
 - a. Incontinence of stricture.
 - b. Incontinence of enlarged prostate.

The four cases forming the subject of this report, according to their histories, were originally in the last group, but as a result of operative accidents in the attempted relief of their retention, they came under my care suffering from traumatic incontinence without retention of urine.

There are many reports on the treatment of incontinence with drugs, massage, electricity, dilations, and periurethral injections of paraffin and vaseline. Also epidural and spinal injections have been used. But all have more or less failed in the presence of organic disease.

The first operative procedure was reported by Gersuny in 1888, consisting in dissecting free the length of the urethra in the female and twisting it from a half to three quarters of a turn and suturing it in this position. Subsequent articles reported, in general, unsatisfactory results, because of sloughing of the urethra. In 1907, Young reported an original and successful operation on the male in which he sutured both internal and external sphincters which had been cut fifteen months previously during an external urethrotomy. In the discussion of Young's paper Kelly reported two cases in which he had successfully performed similar operations on the sphincter at the neck of the bladder through the vagina in the female.

In 1908, Eckstein reported a case of Tabes and hypertrophied prostate with retention and dribbling in which he did a suprapubic cystotomy establishing a fistula in which a retaining catheter was worn, controlled by a clamp and carried in the pocket of a belt. Similar operations have been done on both the male and female by closing the urethra by a plastic operation, or a flap and valve operation through the perineum or vagina and establishing suprapubic drainage. These patients washed their own bladders once or twice a day and visited their physician every two weeks to have the retaining catheter changed and cleaned. In 1911, Squier reported a case in which he did a successful "urethroplastic operation," dissecting

out a large sac from the posterior urethra forming a new urethral floor, and closing the muscles over it. Kelly in 1914, and Young in 1919, reported further successes of their operations.

There is conflicting testimony as to the comparative value of the two sphincters in the control of micturition. Young states that after perineal prostatectomy, before the wound heals and while urine comes out of the urethra back of the external sphincter, the patient is able to control his urine, showing the internal sphincter is sufficient to prevent incontinence. He also quotes Freyer's autopsy reports on cases of previous suprapubic prostatectomies in which micturition has been normal, but in which the internal sphincter was greatly dilated, showing that it was not entirely necessary to prevent incontinence.

A careful cystoscopic and endoscopic study was made of the cases reported in this article to determine their exact condition, and the site of the injury was seen in all except the case of tuberculosis. At operation it was found that the space between the ruptured ends of the muscles was filled with scar tissue sufficient to allow the sphincters to stand open. In the tabetic and tubercular cases where there was complete incontinence, the bladder wall and also the perineal muscles were found markedly atrophied, of a very soft and friable nature and very difficult at times to suture. In the other two cases where there was slight control, the muscles were in a much healthier and more normal state and gave successful and gratifying results.

Case 1. C. B., No. 42485, German, Age 59. Entered San Francisco Hospital October 6, 1919. Complaint, incontinence of urine. Family history negative. Past history negative except for left nephrotomy in 1893, for removal of kidney stone. Present illness, in May 1918, a perineal prostatectomy was done resulting in a perineal fistula persisting until three months ago. Also if he held his urine over fifteen to thirty minutes he began to dribble.

Examination: Fairly well developed and nourished. Argyle Robertson pupils. Healed left nephrotomy scar. Reflexes present and active. Genitalia normal. Healed perineal scar from prostatectomy wound. Cystoscopic and urethroscopic examination: Entered easily, no residual, bladder capacity twenty-one ounces. The internal sphincter was somewhat relaxed due to a shallow cleft on the right side of a small median bar, apparently the torn internal sphincter. There was a depression just inside the membranous urethra, apparently the urethral orifice of the recent perineal fistula, posterior to which was an overhanging process. The membranous urethra was very much relaxed. Tissues soft.

Operation October 14, 1919, under two grains of tropocaine spinal anesthesia. Inverted V incision made and the scar tissue of the previous prostatectomy dissected out down to the urethra which held a sound. The dissection was carried until the ends of healthy perineal and urethral muscles were found, without opening the urethra. The urethral muscles were brought together and

then the perineal muscles sutured about the urethra, thus making a tight sphincter. The wound was closed without drainage. The internal sphincter was not touched in this case. Recovery uneventful. One month later he was seen and a 24 Fr. sound easily passed. He stated that he was holding his urine two or three hours, and had full control.

Case 2. A. G., No. 42110. German, Age 79. Tinsmith. Complaint: Complete urinary incontinence. Family and past histories negative. Present illness: Started two years previously with frequency of urination, and at times hesitancy and dribbling. Suprapubic prostatectomy done six months previously in Los Angeles, and has had complete incontinence since.

Examination: Argyle Robertson pupils. Lungs, impaired resonance in both. Achilles tendon reflexes absent. Left patellar diminished. Spinal fluid under tension, cell count 36, Wassermann XXX. Blood Wassermann XXX. Genitalia: Erosion of glans penis and prepuce from maceration in urine. No evidence of prostate by rectal palpation. Left vesicle palpable. No residual urine on catheterization. Bladder capacity, less than 100 cc. caused great distress.

Cystoscopic and urethoscopic examinations: Entered easily, marked cystitis with ragged flakes of pus covering the entire bladder wall. The internal sphincter was torn and separated in the base of the urethral orifice. The prostatic urethra was very irregular in outline and scarred. The external sphincter was greatly relaxed, standing open.

This patient was treated for over a month with bladder irrigations, tonics, and antiluetic measures, without improvement. He continually begged for something to be done to relieve his misery, and after several urethoscopic examinations, decided to attempt to repair the internal sphincter and tighten the external sphincter.

Operation, October 25, 1919. Suprapubic cystotomy done and internal orifice exposed. The floor of the urethral orifice was denuded of mucous membrane and the torn ends of the internal sphincter approximated and sutured with fine chromic gut. One half inch drainage tube sutured in. Inverted Y incision made in perineum exposing the bulbo-membranous urethra, and the external sphincter tightened by removing a portion and suturing together the ends. Perineal muscles closed over the urethra and the wound closed without drainage. Suction apparatus attached to suprapubic drain to keep bladder dry.

The bladder was very thin walled and friable, as were the tissues and muscles in the perineum. Forceps and hemostats would tear out on the least strain. The man had no resistance and there was no effort at healing, and he died one month after the operation.

In this case it would have been a better procedure to have followed Eckstein's method with a simple cystotomy and retaining catheter in the fistula, and gotten him up and around in a few days, and later obstructed the urethra by a plastic operation, through the perineum.

Case 3. F. G., No. 42437, Italian, Age 54. Entered October 6, 1919. Complaint: Incontinence of urine. Family history negative. Past history: Radical operation for carcinoma of the lip seven years previously. Present illness: Frequency, burning and pain in head of penis started two years ago. Frequency increased to every fifteen to thirty minutes. In January, 1919, he developed retention and a perineal prostatectomy was done in Stockton, resulting in complete incontinence through the penis when lying down and through a persisting perineal fistula when standing up. His testicles swelled up one month after the operation and have never gone down.

Examination: Marked pyorrhea. Rales and dullness in the apex of the right lung. Sputum negative at this time. Genitalia: Redundant prepuce irritated from dribbling urine; both epididymi enlarged, nodular and hard; right testis small and hard. Two fistulas in perineal wound. Left side of prostate apparently removed. Small mass in region of right lobe, hard, nodular, and infiltrated into the right vesicle.

Cystoscopic and urethoscopic examinations: Entered easily, practically no bladder capacity, mucous membranes somewhat inflamed, particularly around the left ureteral orifice. Posterior urethra rigid and board like, both sphincters standing open showing no contractility. Phtalein test: 30% from the right kidney, and 13½% from the left in half an hour. Acid fast bacilli in the bladder urine.

October 29, 1919, left nephrectomy done, kidney badly abscessed and destroyed.

November 4, 1919, bilateral epididymovasectomy done (Cabot's method) under spinal anesthesia. Pathological report, tuberculous.

November 11, 1919, under spinal anesthesia, inverted V incision made in perineum and fistulas dissected out down to the membranous and prostatic urethra. The sinuses were filled with soft granulation tissue making up more than half of the perineal body. Such a large cavity was present after the dissection, that no attempt was made to find healthy muscle through the thick scar which covered them; the urethral sinus was closed over a sound and the scar infiltrated perineal muscles sutured together with difficulty. A small drainage tube was left down to the urethra. Pathological report showed round celled infiltration and small tubercular abscesses. Suprapubic cystotomy done for drainage.

December 16, 1919, urine draining from both suprapubic and perineal wounds. December 31, 1919, X-Ray treatments started. In twelve days the suprapubic wound was practically closed and by the end of a month both wounds were closed. Forty-seven daily treatments given, omitting Sundays only, without burning. Notes made on February 19, and 23, 1920, state that the patient was up and about, and holding urine for a few minutes at a time.

Shortly after, his perineal wound broke open again, and as acid fast bacilli had been found in his sputum, he was transferred to the T. B. ward. Except for a greatly improved physical

condition, he has the same miserable urinary incontinence he had in the beginning. Perhaps, if the X-Ray therapy had been started earlier, both before the perineal repair operation, and immediately after it, there might have been more primary healing and a permanently closed perineum obtained.

Case 4. J. G., No. 43540, American, Age 44. Entered December 12, 1919. Complaint: Dizzy spells and urinary incontinence. Family history negative. Past history: Insomnia and chronic arthritis in all joints off and on for years. Dizzy spells and headaches for last six years relieved by digitalis and whisky. Pain in heart and swelling of the feet at times. Two Neisser infections, and has been treated for strictures since 1908.

Present illness: Had an external urethrotomy done in 1910, for his strictures. Has had dribbling since then, especially when asleep and when tired after working. Has worn a urinal and been told by several doctors that it was the only relief for him.

Physical findings: Heart absolute irregularity, rapid, weak pulse, no murmurs. Genitalia: Chronic epididymitis both sides. Urine clear. Number 30 Fr. sound easily to bladder. Prostate small, lobes nodular, base infiltrated into vesicles especially right. Prostatic sulcus deep. Cystoscopic and urethroscopic examination: Capacity 32 ounces; bladder wall and ureteral orifices normal. Neck of bladder regular in outline anteriorly, with a deep cleft in the floor of the urethra between the lateral lobes of the prostate. The cleft extends forward through the prostatic and membranous urethras, showing both sphincters had been cut. The sphincters did not close in the normal folds but remained relaxed and were sluggish. Varumontanum not seen.

December 9, 1919, Operation under two grains of tropocaine in spinal fluid. Suprapubic cystotomy: Denuded an area in the bladder neck covering the ends of the cut internal sphincter, and dissected out the scar tissue. Approximated the ends of the muscle with four fine chromic catgut sutures. Sewed in one half inch rubber drainage tube in the suprapubic wound. Injected one and one-half grains more of tropocaine in the spinal fluid, one hour and a half after the first injection. Put the patient in the lithotomy position and made an inverted Y incision in the perineum. The scar tissue was dissected out until the healthy muscle ends were found, without opening the urethra. The ends of the urethral and perineal muscles were approximated and the wound closed without drainage. Negative pressure apparatus applied to the suprapubic bladder tube to keep internal sphincter dry as possible.

In one month the wounds were healed and the patient was urinating normally, getting up once during the night. At the end of six weeks a 29 Fr. sound was passed and a cystourethroscopic examination made showing a median bar across the former cleft in the vesical orifice, and with normally functioning internal and external sphincters on withdrawing the urethroscope.

January 19, 1920, dismissed with urinary condition cured.

Bibliography.

1. Young, H. H.: Suture of Urethral and Vesicle Sphincters for Cure of Incontinence. Tr. South. Surg. and Gyn., 1907.
2. Davis: Gersuny Operation for Enuresis. Ann. Surg., Phila.; 1908.
3. Eekstein: A new Method for Relief of Hopeless Cases of Urinary Incontinence. P. G., N. Y.; 1908.
4. Squier: Post-Operative Urinary Incontinence. Urethroplastic Operation. Med. Rec., N. Y.; 1911.
5. Baldy: Incontinence of Urine, Complete and Incomplete. Surg. Gyn. and Obst.; 1913.
6. Brickner: Incontinence of Urine due to Laceration of Sphincter of Bladder. Am. Jour. Obst., N. Y.; 1913.
7. Kelly: Incontinence of Urine in Women. Surg. Gyn. and Obst.; 1914.
8. Young: Operation for Incontinence of Urine. Surg. Gyn. and Obst.; 1919.

INDUSTRIAL MEDICINE.*

By ROBERT T. LEGGE, M. D., F. A. C. S., University of California, Berkeley.

For the first time in the history of this society a new section on Public Health and Industrial Medicine makes its debut on the program as an important branch in the field of scientific medicine. These specialties should be devoted in their fullest measure to educational problems in preventive, industrial and socialized medicine, so as to offer to the general profession a knowledge of subjects that are correlated with medicine. The practicing physician trained in curative medicine deals entirely with the individual while the sanitarian, the industrial physician, or the social worker deals with the problems that confront the whole of the society. All factors in public health or social economics are fundamentally medical subjects, and consequently the profession should be continually informed of the advances made in these fields of research. Bernardino Ramazzini of the University of Padua, whose death occurred two hundred years ago, and probably the earliest teacher in the study of the diseases of artificers, is reputed to have said: "Man must work to live, and if the work itself brings death a vicious circle is created." This observer realized that nothing comes closer to actual humanitarianism than prophylaxis of the ills caused by special occupations. When the steam engine was invented, modern machinery was the result, and manufacturing became the foundation of commerce and industry. All efforts and skill in chemical and mechanical science were brought to bear to increase output and convert raw materials into finished products. The human machine element was lost sight of in this evolution for the supremacy of trade until lay workers connected with social agencies, statisticians in life insurance companies, and medical men became aroused by the spectacle of the human wastes, who met their early demise, or filled our institutions and hospitals.

The studies of occupational diseases and hygiene by such Europeans as Rambousek, T. M. Legge and Sir Thomas Oliver combined with the pioneers in the field in America, viz: Kober, Alice Hamilton, Gilman Thompson, Hayhurst and others are epoch making. The research in fatigue by Josephine Goldmark and Professor Lee, the compilation of mortality statistics from consump-

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

tion in the dusty trades by Frederick Hoffman, safety in industry by Tolman and the labors of the New York Ventilation Commission are only a few illustrations of the advances made along these lines of endeavor. The culmination of the wrongs and injustice done to workers, through carelessness and injury, was instrumental in the legislative measures that brought about the Workman's Compensation Act. The passage of these laws was the measure which stimulated a demand for well-trained industrial surgeons, men of education, with vision and human interest.

Industrial medicine may appear to the skeptic in the profession to possess a character dangerous to its best interests. He may think that he sees in it the characteristic earmarks of contract practice, or socialized medicine. Such fears need not be entertained, as the fact is now definitely recognized among the great captains of industry that medicine plays an increasingly important part in the whole structure of their various organizations, thereby furnishing a great and parallel increase in all the various activities of medicine. What the profession must demand is that medicine shall not be exploited, and that is one of the chief purposes for which medical societies are grouped. It is illogical to presume that general medicine as it is daily practiced among the laity could be applied collectively to the army, for instance, without a definite knowledge of military training in the specialized fields, and the same is true of industrial medicine and public health.

The great corporations and railroads have realized that in the past they were short-sighted in providing cheap medical service. It was this class of medical men who earned the stigma of the company doctor, and did not command the respect of either the employers or employee, or of his colleagues in the profession. This type was the old time doctor who was primarily a first-aid man. The employer reluctantly learned that such service was the most expensive, as it is far more economical to prevent than to cure. So in the past five years the plant surgeon has risen to a place in the foremost rank of the profession, highly specialized, honorable, and rich in opportunities for human service.

Industrial medicine is not simply a field for the ordinary practice of general medicine or surgery, it is a development which has perfected a specialty in traumatic and occupational diseases, and the means for increased production, healthier and happier workers and decreased labor turnovers.

The scope of the general application of industrial medicine is to the larger group as a unit, and it is in this relation that the main endeavors are centered, although individual medicine is rendered whenever requested. Its specific purpose is prevention, the prevention of occupational diseases and accidents. When these two main issues are applied to the whole group, the humanizing of industry is attained, and a crowning victory for society accomplished. The long hours of labor, the speeding up of machines and other measures promoted by the employer to secure the maximum return from the labor of his employees, are unscientific and unwarranted. To secure the maximum of efficiency from the human machine, the

industrial surgeon, virtually a human engineer, acts as the agent for stabilizing labor, thereby facilitating production and helping the worker to do a better day's work and to earn better compensation. These facts most employers now realize.

The trained industrial surgeon, by his methods and process of elimination, makes scientific studies of the hazards of occupation; is able to interpret industrial processes, and clearly understand the various operations of mechanical appliances, and to provide the necessary working environment. The worker in the modern factory should not be denied fresh air, sunshine and good water. These are his natural privileges and environments lacking these things are responsible for many occupational diseases, those resulting from the emanations from fumes, gases, toxic metals, dust, high temperature and humidity. Occupational hygienists recognize that physical breakdown is due to unsanitary working conditions, lack of medical supervision and lack in the recognition and prompt treatment of conditions which lead to invalidism. The employer now realizes that better relations between himself and the worker are possible by the provision of healthful places in which to work.

The most capable individual to estimate the human requirements for filling a job or the placing of the handicap where service can be of most value is the industrial physician, through the medium of physical examinations, whereby physical defects are revealed and detected.

It is estimated by Mock that in the United States there are forty million workers, and of this number about one-tenth are receiving scientific medical supervision. Of this vast industrial army he states that two million lose time yearly entailing a loss of over one day each, 750,000 of more than four weeks, 18,000 are permanently disabled, and 22,000 are killed outright. From an economic standpoint the loss is estimated at eighteen million working days or the working time of 60,000 men per year. Gier states that the non-effectives in the average industrial plants are known to be three per cent. for sickness, two per cent. absences falsely claimed to be sickness, one per cent. lost time due to accidents, or six per cent. in all. When the principles of industrial medicine intelligently applied can reduce these numbers to three per cent., or a gain of 30 workers in every 1000 on the job, the employer as well as the employee is markedly enriched thereby.

The United States Department of Labor investigation concerning accidents in the steel and iron industry found that fractures of all kinds alone constituted 2.6 per cent. of all injuries and that the average of days lost was 55. It is evident that some factor must have entered into the determination of this average, for the figures in no way correspond to those obtained by the American Surgical Association Fracture Committee, their average of time lost being 105 days for all long bones. The conclusion to be drawn is that in industry the rendering of immediate and proper surgical service by a surgeon specializing in traumatic injuries is that factor.

The introduction of plant dispensaries constitutes a medical agency where the "stitch in time" method is practiced; where infections and minor

ailments are nipped in the bud. With skilled trained nurses constantly in attendance, shock and hemorrhage is averted or controlled, the wounds are carefully sterilized and temporarily dressed while the surgeon is being notified. A workman soiled and sweating when injured, burned or sick, dispatched at once to the dispensary or plant hospital and given immediate attention, cleaned and put in a clean bed, has these advantages: his psychology is changed, fear eliminated and confidence established. Such agencies as first aid and transportation of the injured by trained employees in this art are important factors in preventive surgery. Work of rescue in smoke, gas and fumes, the application of artificial respiration by these first aid teams, have materially lessened morbidity and mortality, lessened suffering and shortened hospital days.

The plant surgeon coming directly in contact with the injured, keeps careful records important to the safety man, who after investigation applies the knowledge gained to the prevention of recurrence of similar accidents.

In co-operation with departments of employment where physical examinations are compulsory, the industrial surgeon plays an important role. The elimination of the unfit and the mental deficient, the recognition of infectious diseases, the placing of those with certain defects where they may still be efficient, and the discovery of degenerative diseases are benefits derived from such service. For industry is learning that labor turn-over is costly and is continually adding to the cost of the product.

Comprehensive study and conservative estimates by investigators show that it costs about \$40 to hire and train a person for a job. By figuring that about 10 per cent. of the applicants are rejected, it is safe to conclude that the employer has saved \$400 for every one hundred applicants. This estimate, however, would be cut in half if the overhead average of \$2.50 per capita for medical examinations were charged.

Humane disqualification only must be resorted to, and the surgeon is in duty bound to give his professional reasons and advice to the rejected so that his defect may, if possible, be remedied. Some objections were raised by union labor as to physical examinations on the ground that industry was primarily the cause of these defects. Undoubtedly this is largely true, but alcohol, venereal and other infectious diseases are responsible for a great measure—a problem which industrial medicine must in the future solve.

In the close relation maintained with the welfare department in providing comfortable bathing and washing facilities, clean toilet and rest rooms, sanitary drinking fountains, and eating services, recreational activities, etc., the industrial surgeon acts as a practical hygienist, fostering increased comfort and happiness to the employees and receiving their good will and gratitude.

The introduction of the public health nurse has opened up a new specialty in this field. Her work is fully recognized as essential to industry. Follow up work in treatment of employees, prevention of malingering, teaching hygiene and visit-

ing the homes, rendering first aid, and assisting the plant physician in physical examinations and keeping records, and giving advice to women in industry, doing social welfare work and making periodical sanitary inspections of the plant; this service constitutes preventive as well as economic medicine and tends to improve home conditions and decrease wage losses.

The study of occupational diseases while not new, offers to the industrial M. D. opportunities for research and investigations. Many of our states allow under the Workingmen's Compensation Commission, compensation for occupational diseases, California being one of these. Problems of great magnitude must be decided, such as, whether a worker had tuberculosis before entering a dusty trade, or a degenerative heart condition which was perhaps luetic, rather than resulting from industrial poisons. Our state board of health requires that certain occupational diseases are reportable, as for example: anthrax, compressed air diseases, toxic jaundice, etc. How many of our general practitioners are uncertain in their recognition of occupational diseases, and how often by ascertaining the patient's occupation, the clew to the diagnosis may be found. Plumbism was known to Hippocrates. Michael Angelo, Raphael and Corregio were victims of this disease, and yet we often see painters being operated upon for appendicitis, when colic is the main symptom, and the blue line on the gum is overlooked. Toxic jaundice, a symptom of acute yellow atrophy of the liver, a fatal disease due to the fumes of benzol, t. n. t. and tetra chlorethane, must not be a case for cholecystectomy but one to report for the prevention of other like cases. Chills, fever and sweats are the cardinal symptoms of brass founders' ague, due to zinc fumes; so neither the anophele nor the antidotes for malaria bear any relation as to the cause and cure of such analagous symptoms. Blindness was repeatedly met with in practice, but was methyl alcohol thought of as the causative agent? Dermatitis and exfoliation of the skin is common with dyers and workers in aniline. These are but a few illustrations of common occupational diseases confronted daily. The long list of toxic fumes, gases and dusts, the poisonous metals, such as lead, arsenic, mercury and chrome, the dusty trades, such as felt hat operators, grinders, polishers and cement workers, the diseases of harmful environments, such as caisson disease, trauma, neuroses, occupational cramps, anthrax and the incidents of tuberculosis, afford rich opportunities to the industrial surgeon to study and prevent hazards, thus bringing a keener appreciation of the great service which he can perform to society and of the valuable contributions he is able to make for the enrichment of medical science.

The doctor who merely accepts employment as a factory physician essentially to conduct a dispensary for the purpose of rendering emergency services in cases of accident, and often to protect the interests of the employer as to claims, cannot in the light of what has already been said be classed as an industrial surgeon in the truest sense. The study of industrial physiology in the worker

is a step in industrial research. Output and fatigue, rest, hours of labor, welfare work and food and their relations to efficiency, has been rationally developed by Lee in this promising science. It has two objects: first, the more purely scientific one of learning how the industrial worker actually performs his work, the conditions under which he can work most efficiently and produce the largest output, while maintaining his body in health and in the best condition; second, the more practical object of establishing in the factories the conditions which are conducive to the maximum output, and the maintenance of the maximum power of the worker. As a result of these earnest efforts, both employer and worker will soon recognize that industry must be organized on an intelligent basis, and not as heretofore on a basis of ignorant speculation. A great and virgin field for development still awaits the investigator.

The phenomenal advances made in industry in recent decades, chiefly through the achievements of mechanical and chemical engineering, has improved automatic machinery and developed new processes, but has not succeeded in eliminating the human worker. The human machine, therefore, the most intricate of all, has its limitations, due to fatigue, and must be understood, watched and not abused. Industrial medicine and sanitation has made scientific progress since the war, and individual investigators such as Florence, Lee, Gilbreth and Spaeth have shed much light on this subject of fatigue. As fatigue delays work, spoils material, diminishes output, causes accidents, sickness, and absences, naturally efficiency is diminished by it. How to minimize fatigue and maintain the efficient working power of the worker, constitutes one of the great industrial problems of the day.

The unique observations of Gilbreth with the use of the cinematograph for the study and curtailing unnecessary movements, thereby conserving much energy and overcoming fatigue, has resulted in increased output. The application of rest periods, at intervals, by Taylor had the effect of increasing production without detriment to the worker. Shorter hours in the British munition factories, where the working time was reduced from ten to eight hours, did not reduce the output. These examples afford practical illustration of the value of science applied industrially.

Industrial hygiene has made progress by leaps and bounds in the environment of the factory. The problems of ventilation, high temperature and humidity, are particularly interesting. Haldane (British), Lee, Hill, Winslow (American), whose books on these problems are epoch-making, have revolutionized the old theories of Petten-Koffer that CO₂ was the dangerous factor in ventilation. These investigators have proved by research that the ill effects of confined air are not due so much to the chemical impurities in the air, as to physical ones, such as increased temperature, humidity and stagnation of air about our bodies. It is these conditions which, when maintained, produce fatigue, lassitude, anemia, increased metabolism, loss of resistance and a predisposition to acute and chronic diseases in the worker. Tersely, as Lee

has stated, ventilation is not a chemical but a physical and not a pulmonary but a cutaneous problem.

Industrial illumination is another factor in occupational hygiene, that the attention of architects has been called to, in the construction of modern factories. Inadequate natural or artificial illumination has its consequent effects not only on the cleanliness and cheerfulness of the workshop, but it decreases production and increases spoilage. There occur 25 per cent. more accidents in dark shops, and in night work. Poor lighting causes eye strain and impaired health in the employee.

Such public health matters as epidemiology, safe water supplies, waste disposal, insect control, all play an important role in safeguarding the worker in industry.

As sanitation is linked to preventive medicine, so is safety to preventive surgery. Accident prevention was the outcome of our State Compensation Acts. The slogan, "Safety First," was born as a result. Van Schaack of the Aetna Life, quotes that "on a basis of 300 working days of eight hours each, the startling and shocking record is that a workman is killed every four minutes, and one injured every four seconds." Viewing this situation from a humanitarian standpoint, we see clearly that the prevention of preventable accidents is not an altruistic accomplishment. To eliminate pain, as far as possible, to heighten the enjoyment of life, and reduce sorrow and misery, is a duty which admits of no arguments. From an economic viewpoint, picture the disaster of the victim of a fatal or serious accident; if a fatal one, his loss of wages, hospital and funeral expenses, the struggles and hardships of dependents, or if blinded or totally disabled, the inevitable burden to the family and community. The employer is liable for damages and the consumer experiences a rise in prices. There is greatly diminished efficiency after an accident, as the shock to the other workers curtails their productivity and at times even causes complete stoppage of work. The incidents of time consumed, material spoiled, and the training of a new employee, are matters that appeal economically to all employers where hard dollars are distinctly measured, to say nothing of the experience of having killed or maimed a human being.

The industrial surgeon must do more than relieve pain medically and surgically. Prevention of accidents is worth a pound of cure, and he must organize, wherever his field of duty lies, safety first campaigns. His understanding of how the accident occurred prompts him to ascertain the actual risk each employee is liable to and enables him to eliminate and reduce all risks by providing safeguards to all dangerous machines and places. His knowledge derived from the physical examination records made when the person was employed, gives him the opportunity to select the careful and intelligent workman for hazardous positions and the unfit or maimed for places where danger is nil. The promotion of first aid training, the promulgation of rules for safety, and their discipline and education in caution, incidentally falls to his lot.

In these days when the conservation of man power is necessary, not only from the humanitarian

but the economic point of view, safety, in the prevention of injuries and unnecessary deaths, pays. In 1914 the estimate in accident mortality in the United States was 2.8 per 1000 workers, while in Germany before the war it was .68 per 1000. The U. S. Steel Corporation reduced its accidents 42.6, while the Pennsylvania Railroad shops' reduction was 63 per cent. by the institution of careful safety measures rigidly enforced. Our industrial losses by accident is one of our greatest social evils, and national wastes, and undoubtedly constitutes the second highest cause of poverty and dependency. No one can compute the actual economic losses, the estimate being, roughly, 600 millions of dollars.

Industrial medicine, through the leadership of its personnel, recognized the opportunity during the war, for the rehabilitation of disabled and crippled soldiers. They were familiar with the enormous wastage of man power in industry, due to disability, and realized the wrong that was done by managers in scrapping their employees for whom they were morally responsible. The principle of salvaging crippled soldiers, applied to the industrial army as well, and as now organized, must continue always. To fulfill our obligations the human scrap heap must be salvaged and human life and energy conserved by physical reconstruction and vocational re-training methods.

In spite of our labors these will be still in our midst: the armless, the legless, the tubercular, the epileptic, and blind, many of whom can be furnished with gainful occupations and so become efficient members of society. Through this fertile field of social endeavor a new profession of physio and occupational therapy has been created. These, mostly women, trained in the arts of massage, physical education, hydro and electro therapy, and occupational methods and psychology, are not only preventing disability from ankylosis of joints, injuries to muscles, etc., but are instrumental in the solution of reclaiming and re-educating the maimed from accident and disease, so that they may be put back on the payroll and preserve their economic independence.

Much is to be expected in the next few years from well-trained men in the new specialty of industrial medicine. The research in occupational and degenerative diseases of the worker is just beginning. The hazards of war industrial plants were studied scientifically and so were revealed the effects of the poisonous dusts and vapors such as Trinitrotuol and the aeroplane dope mixtures. Every new appliance and discovery may have its particular hazards, as for example, the effect of the air hammer on the hands of the stone-cutter, which has been a recent contribution.

In New England forty-five manufacturers consented to contribute \$1000 yearly for five years to Harvard Medical School to establish a chair of industrial medicine and surgery. Several of our medical schools have already added teachers and special clinics for this new field, special emphasis being given to traumatic and orthopedic surgery, industrial hygiene and the public health and social welfare work. The graduates to spend one year of internship in industrial hospitals associated with

large plants. This shows the great importance that is laid on the subject not only by our medical schools but by the great number of employers who have organized medical departments in their plants. The employer does not have to look on the credit side of the ledger to see whether industrial medicine pays. He knows that medicine scientifically applied has increased efficiency and output, that compensation and loss of time is decreased, and the good will between employer and employee is preserved and strengthened. The employee likewise reaps the benefit in securing healthier working conditions, better care when sick or injured, protection from contagious and occupational diseases, overcoming of loss of wages, and of suffering and thereby increasing his comfort and happiness.

What satisfaction and contentment awaits the specialist who follows such a vocation as this. In the hand of the well-trained industrial surgeon lies the humanizing of industry, which in turn offers to labor and capital social reconstruction and democracy.

THE INDUSTRIAL SURGEON, WHAT HE IS—WHAT HE CAN BE—WHAT HE SHOULD BE.*

BY GILBERT M. BARRETT, M. D., F. A. C. S.,
San Francisco

Many problems are before the medical world and the most of these are pressing for recognition and solution before the Industrial portion of the world.

The Industrial Surgeon of today believes in and advocates examination of all applicants for work. It should be the accepted routine of all industrial enterprises. One of the greatest sources of saving to the employer is the physical selection of employees for work. This is done by the physical examination of all applicants for work before employment. The value to the employer depends upon the thoroughness of these examinations and the amount of co-operation between the employment department, the medical department and the foreman. The placing of all comers on jobs without any effort at a physical selection for their work is responsible for a great financial waste which cannot be shown in dollars and cents, but which, nevertheless, is very evident. Some of the sources of waste from the employment of the physically unfit are given by Mock as:

(a) The unfit who later must be discharged because of inability to do the work.

(b) The unfit who may continue to work for a few months or a year, but with a gradual decrease in their efficiency, due to advancing disease. Sooner or later they are forced to stop work, and during the entire period of employment they have been a source of loss to the company employing them.

(c) Those who, because of their physical condition, are subject to frequent accidents.

(d) Those who suffer accidents which ordinarily would not be serious, but, because of co-

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

incidental physical conditions, cause prolonged disability or even death.

(e) Those having some contagious disease when employed, who communicate it to others in the working force. The acute contagious diseases are more common, but tuberculosis and syphilis also cause a great loss.

(f) Employment of the mentally deficient, the moral degenerate, and other types of mentally handicapped men who make up a certain percentage of the floating labor. An observing industrial physician will pick out this type during the course of his examination.

This suggestion of physical examination has the endorsement of the Industrial Surgeon; of the management of most industries, of Samuel Gompers as chairman of the Committee on Labor of the Council of National Defense, and of all save the few who can see in such an arrangement nothing of good for the employee. As has been explained by all Industrial surgeons, whose experience gives them authority to speak wisely, and as outlined in Col. Mock's work, and as declared by Dr. Loyal A. Shoudy, Chief Surgeon of the Bethlehem Steel Company, such examination is not designed nor intended to eliminate from labor's ranks every defective, and accept for employment only the perfect, the young, the strong and robust. It is the settled policy of all these Industrial Surgeons that it is not *rejection* of the worker but the *fitting of him* to his job. It also enables the Medical Department of any industry to keep in touch with the health and health problems of the employees. It permits its supervision of the Plant individually, and in group, so that prevention may be given an opportunity to prevent, and so that the communicable diseases may be early discovered, and the chronically diseased may be fitted to some job where he may still be productive and yet not sped to invalidism or dissolution.

Physical examination is really a necessary requirement. Not only this as a prerequisite for employment, but there should be a re-examination periodically; so that the Plant organization from the General Manager down through the entire force may be kept in good health.

This re-examination would be a practical demonstration of a health survey. Increasing blood pressure; decreasing weight; beginning eye trouble, nervous trouble, all these may be discovered, the cause ascertained, and if possible, the remedy applied,—medication, surgery, a brief vacation, more rest, change of employment, whatever is indicated. The period for this may be any time from six to twelve months.

Mock collected statistics from ten large industries, having very excellent medical staffs, which examine all applicants for work. The following table shows the results of these examinations:

1. Total number of applicants examined in one year..... 118,900
2. Total number employed having disabilities that did not interfere with selected work..... 41,158
or 34.7 per cent.

3. Total number rejected for work because of disabilities..... 11,433
or 9.7 per cent.
4. Total number having no disabilities of any moment..... 66,309
or 55.6 per cent.
5. Total number of regular employees in these ten industries 102,400

It is fair to assume that these 11,433 applicants who were rejected for work would have soon lost their positions because of inefficiency, or would have left because of sickness. Certainly by the end of a year practically all of these would have been eliminated from the working force. It is impossible to estimate accurately what the loss to these companies would have been during that year from having these men and women in their employ. It would have been considerable, however, from decreasing efficiency due to disease, from an increased accident rate, from loss of time due to sickness and the resulting sick benefits in many cases.

Several estimates have been made of the cost of labor turnover. These estimates vary from \$10 to \$200. One authority, after a careful study of this problem in many industries, gives as a low average the amount of \$35 as representing the cost of hiring and training an individual. Therefore, the 11,433 rejected cases in the above table can be estimated as saving the companies rejecting them, \$400,155 in labor turnover.

Magnus Alexander in a comprehensive study of the cost of health supervision in ninety-nine different industries found that the average cost per employee for all medical work was \$2.50. Using this figure as a fair average, and taking the regular number of employees as 102,400, we can estimate the cost of the entire medical work in these ten industries at \$256,000. Thus the examination of applicants alone undoubtedly saved these companies over \$140,000 during the course of one year.

1. Saving to ten concerns from rejection of physically unfit..... \$400,155
2. Cost of entire medical work in these concerns 256,000
3. Profit to the concerns from this one branch of medical work alone 144,155

It is fair and conservative to estimate that at least 10 per cent. of those applicants with physical disabilities who were employed would have left very shortly if they had not been placed on jobs suitable for their physical condition, thus adding to their efficiency, contentment and health protection. This adds another \$144,000 to the profit of the employers from this system.

Col. Mock in his recent book divides the services of the so-called Human Maintenance Department into Medical, Surgical, Dental, Nursing, Safety and Sanitation. He insists that there should be adjuncts to the Health Supervision out-

lined under the foregoing main heads. In these he includes Employment, Restaurant, Recreation, Welfare, Insurance and others.

Anent the dental conditions confronting all industrial plants Floyd W. Parsons in the Saturday Evening Post of March 20, 1920, said: "The United States is a nation of dental cripples. This is due to the practice of reparative rather than preventive dentistry." This is in consonance with Col. Mock's estimate that one-fourth of some 16,000 draftees placed in "limited service class" were so placed because of dental defects, diseased teeth or an insufficient number of teeth.

These figures clearly demonstrate that nationally we are allowing a calamitous state to ensue in the mouths of the children by neglecting the care of their teeth when it should be given. Having sound teeth in the mouth of an adult depends on the character of the foundation that is laid in youth. If the teeth of the child are neglected, there is no hope for the grown-up in the years to come.

According to Col. Mock, Dr. Irving Clark found 92% of applicants for work showed some diseased condition as pyorrhea, decayed teeth, abscesses, etc.

These conditions are a menace not only of the present but for the future in the form of infections, pulmonary and arthritic and heart disease, so-called, from the organisms found in the mouth unused to brush and powder and antiseptic wash.

The hazards to health are not confined to the industrial world whether the plant be large or small.

Certain industrial health hazards have been grouped as follows by Lauffer:

1. Poisons, dust, fumes, gases.
2. Heat, humidity, ventilation.
3. Lighting.
4. Crowding.
5. Fire peril.
6. Association with diseased employees.

The hazards do not all lie with or fall on the employee. The employer has certain definite industrial health hazards grouped by the same writer.

1. Decreased production; machines lie idle; sick employees are irregular, discouraged, lack "pep."

2. Excessive turnover, due to ill health, unfitness for job assigned, prevalence of epidemic and infectious diseases.

3. Increased accident compensation expenditure, due to sickness masquerading as injuries.

Cases arise daily where conditions are pathological, but trauma is alleged, or in which a minor trauma has provoked a long period of disability or an unusual degree of permanent impairment follows injuries, not in consequence of the injury alone but a disease condition present in the employee at the time. At the present time in many States the Industrial Accident Commission holds the employer strictly liable, as he takes the employee as he is.

The government employs only healthy men for the fighting line, men whose ability to recover

from wounds is 100% plus. The industries necessarily employ many aged and feeble men suffering from latent diseases and infirmities, having enfeebled powers of resistance and necessarily delayed recoveries when injured. The industries are consequently entitled, no less than the men—to sympathetic consideration in the vast economic problem evoked by injury plus sickness.

It is advocated that there should be legalized releases for defects that cause abnormally long periods of accident disability—hernia, varicose veins, tuberculous foci in joints or lungs, valvular heart lesions, eye defects, amputations. All these and others should be noted in the examination charts and an employer not held liable for defects and diseases arising from causes unrelated to the employment, nor for aggravations of the same. This is along the lines of the laws of Connecticut.

Post mortems should be obligatory when the cause of death is in dispute, and the post mortem report should terminate the controversy.

Federal health charts are recommended by some, valid anywhere and everywhere in the country. Proper placement in industry requires the truth about physical defects.

It must be remembered that hazards are not confined to industry, but are found outside totally apart from industrial service. Among them are tendencies inherited or acquired, domestic troubles, financial worries, too little rest, exposure to infectious diseases, neglected teeth, tonsils, venereal diseases, various physical defects as hernia, flat feet, astigmatism.

An employee spends 8 or 9 hours in the industrial service daily, for 5½ or 6 days per week; and the rest of the 24 hours, at home, in community, or social association he incurs health hazards.

In the industrial plants of today with their modern heating, lighting, ventilating and sanitary equipment, he is probably in more healthful surroundings than in his home, his club, his movie haunt or his occasionally-attended church, especially with reference to communicable diseases.

It is admitted that there are industrial health hazards; it should be as well known and as widely circulated that the *purely industrial diseases* are rare in any general industry; that preventable, non-industrial ailments are the preponderating cause of sickness, disability and health impairment.

Fatigue is a common enough trouble, it is spoken of and written about a great deal, but septic or infectious foci are often more responsible for a muscular or mental fatigue than labor itself, alone.

Henry C. Linke, Ph. D., in the September, 1919 Journal Industrial Hygiene stated the results of the work carried on in a large manufacturing concern to determine the effects of fatigue on the work of shell inspection. A ten-hour day was in vogue with Saturday half holiday. This investigation was conducted from four angles:

1. By means of a reinspection.
2. By means of psychological tests.

3. By means of a careful production study.
4. By means of ordinary observation.

The tests were carried out over a period of three weeks. It was found that contrary to the orthodox belief that there is always a falling off toward evening, there was a slight increase. Instead of a consistent decrease in production with the lowest part at the end of the day, there was an intermittent increase with the highest rate of production during the last hour of the day.

Comparing the findings with those of a year before with a shorter working day, it was shown conclusively that a shorter day does not necessarily mean an increase in the rate of production.

It was concluded that the ten-hour day, per se, did not produce enough fatigue to prevent more work being done in the last part of the day than was done in the morning, directly after luncheon, or at any other part of the day. In view of this carefully thought out, worked out investigation let us not place too much credence in the ideas and plans of those who, as laborers, are always requesting a change of job, or those who, as writers, urge us to change the employment of the workers by a certain rule, or by a certain number of hours' work, to avoid fatigue.

Let me state, contrary to the usual belief that the shipyards are worse than a first-line trench, deaths in the Bethlehem Shipbuilding Plant at San Francisco in 1919, were four, one fractured skull, one electrocution, and two (one an epileptic) general fractures by falls from a height.

Two deaths are credited to the Alameda Plant, but one was due to the man being struck by an auto outside the plant and the other was an epileptic with cardiac decompensation employed only one week, not an injury case.

It will thus be seen that safety devices procure safety—that the Welfare and Safety Departments are working and producing results.

If this small death loss for one year, four fatal accidents with 35,000 men employed, be compared with the deaths due to autos alone the rate is altogether in favor of the well-organized and well-conducted industrial plant. C. W. Price, General Manager, National Safety Council, said in Worcester last March: "During 19 months of our participation in the war when 47,949 were killed or fatally wounded, no less than 126,000 men, women and children were killed in this country, 35,000 in industry, and 91,000 outside of industry."

The surgical deaths in the Union Plant Hospital were three for the year 1919, when 648 surgical operations were done including gall bladders, perforated gastric and duodenal ulcers, hernias, appendicitis, thoracotomies, bone cases, fractures, plates, bone grafts, etc. This is one for 216 cases operated on.

It is with the utmost pleasure and gratification that I pay the tribute to the management of the Bethlehem Shipbuilding Corporation, Ltd., and our Board of Directors, of an appreciative Chief Surgeon, Hospital Staff and Nursing Staff. There has been at no time a request or sugges-

tion which bespoke hospital betterment, or improvement of the service in any form but it received a hearty response, genuine approval and the financial backing necessary to its consummation.

Col. Mock shows the arrangement in some of the large industrial organizations (see cut No. 1, p. 18). This corresponds to our present arrangement with Dr. W. E. Parker, Jr., as the head of the Department.

The Industrial Surgeon today is the development of an idea. He is the fuller fruition of the old mining doctor, the man who lived in the wilds and cared for the miners, their families, if any there were, and the scattered residents of the district. He is the result of a need and a demand. With him he brought some sort of system, some semblance of organization, and of these there was as much need as of his personal services in many instances.

What the Industrial Surgeon *can be* is problematic, as it will depend on those now serving the present-day industries, as to whether he proves himself merely valuable or invaluable, on legislative enactments, on Commissions' rulings, on the future of preventive medicine being taken over, largely or altogether by the State.

He should be the "center and circumference" of medical and surgical knowledge; the "ne plus ultra," the "sine qua non," the super-medical man. He should be one able to control the management, the workmen and disease. He should be competent to handle welfare and safety work sanitation and housing problems, both within and without the Plant. He should be able, capable, wise, suave, firm, generous, kind, gentle, understanding, tender, strong, unerring in both instinct and judgment. How he shall be and become all this, and more, will have to be left to the present group of such men and those they train; to the medical schools (six have already a Department of Industrial Medicine and Surgery) which will enlarge an already unwieldy curriculum to embrace the essential and basic features of this growing branch of medicine and surgery; to the large industrial concerns to which it is ever becoming more certain that their medical and surgical departments yield as large a profit as any, in better health, lessened number of infections, quicker return to employment, increased appreciation of the workers, and improved morale.

Granted some growth already, some improvement over the old-time contract doctor, granted the necessity, the insistent call, the super-medical man will be the result unless unreasonable laws curtail his possibilities, and hedge him about with unnecessary and unwarranted technicalities stunting his growth and lessening his ardor.

The Industrial Surgeon of today is a promise for the future, not so varicolored as the rainbow, but, as the rainbow bespeaks that "No more shall the world be destroyed by flood," so the present day Industrial Surgeon, bespeaks that no more shall the industrial world be destroyed by preventable illness, infections or ignorance of sanitation.

DEFORMITIES OF THE HAND ACQUIRED AFTER ACCIDENTS.*

By A. GOTTLIEB, M. D., San Francisco.

These hand deformities may be classified into three groups: hysterical, functional, and organic. A deformity is however rarely a pure example of a group in view of the fact that injury is their common etiology, and that they present symptoms which are characteristic for more than one group.

I. HYSTERICAL DEFORMITY

A condition which is perpetuated from the suggestions obtained during the acute stage of the injury. In comparison with the deformity the injury was trivial, as a rule.

Etiology and mode of production: A neurotic temperament of the patient may be taken as a predisposing factor; injury to the soft or solid tissues of the hand or forearm as the primary cause.

The deformity develops about as follows: The wrist and fingers are held in that position which has been assumed to relieve pain during the acute stage. In course of time the pain has disappeared, but the hand has continued to remain in the selected attitude by the power of auto- or hetero-suggestions. Fear that any change of position may give rise to pain has created the autosuggestion in the patient, while the heterosuggestion is the outcome of strict instruction of the surgeon in charge not to move the hand at all lest harm and pain will ensue, or it is the result of complete immobilization with the cessation of all motion. After the retentive appliance is taken off, the patient is afraid to move the wrist and fingers because it really is painful—at least at first attempt. If at this time the patient is not persuaded to use the hand, it remains fixed in the position in which it has been immobilized. The deformity will be the more persistent the stronger the patient has been impressed by the after-treatment of a nurse or masseuse who, instead of explaining the actual cause of the malformation, will display sympathy and apply physiotherapy to restore function; both of which will only serve to imprint upon the patient's mind the gravity of his condition.

Symptoms: Typical for this group is that the complaints are exaggerated and the deformity is out of proportion with the injury and the organic changes. The objective findings, such as tenderness and coldness of the skin, stiffness of joints, atrophy of muscles, etc., can be attributed to the enforced rest in the early stage and the inactivity of the hand since the deformity has been assumed. A very limited part of these findings are due to the primary injury.

Treatment: Persuasion and re-education.^{1 2 3} In accordance with the patient's intelligence, it is explained how the deformity has come about. After that, engaging the patient in a neutral conversation and withdrawing his attention from the deformity, the wrist and fingers are manipulated. When the patient is shown that the joints are movable and the muscles active, he will often display great surprise because he did not expect, nor

believe it possible. This fact alone will induce him to active use of the hand. It is essential that the operator should have the full confidence of the patient and that this maneuver be repeated if the first one fails.

The changes from the injury and disuse must be treated as outlined for the organic group; but even after the hysteric element of the deformity has been overcome, the patient must still be informed why the physiotherapy is being applied. During the examination and treatment great care must be exercised not to suggest any new symptoms, but confidence must be awakened that a cure, at least marked improvement, is certain.

FUNCTIONAL DEFORMITY

This is the resultant of two antagonistic forces: one of them (A) is produced by the overaction of a group of muscles, and the other (B) by the inaction of its antagonist. The deformity is the difference of action of these forces and is always in the direction of the first, the greater of the two:

Etiology and mode of development: The primary cause is an injury, particularly to muscles and peripheral nerves. The injury is not sufficient to account for the loss of power in the inactive muscle group, and the findings do not indicate a partial or complete division of its nerve supply.

The trauma must have established on the side of force A, a source of peripheral irritation which causes a continuous contraction of this muscle group. Precaution not having been taken in the early period of treatment against the formation of this source, the permanent overstimulation and overaction has created a muscular hypertrophy and has increased its normal function.

The opposing muscle group, force B, does not display power equivalent to its volume and does not respond in proportion to the patient's volition. This phenomenon can be explained by the plus stimulation which force A receives, i. e., the artificial stimulus in addition to its physiological, while force B merely receives its physiological. In course of time this disturbance of balance weakens the muscles of force B in virtue of its constant under-use and its permanent stretching; partial atrophy and functional disability develops, and a wrong muscle habit becomes established.

Symptoms: The wrist and fingers are usually extended. The degree of the deformity varies with the injury, and the coexisting organic changes, such as old scars, muscular and joint fibrositis and bone ankylosis.⁴ The mental attitude of the patient is good: he is anxious to get well. No element of suggestion and lack of will power is detectable. If the patient displays doubt in the possibility of being improved, it is because he has been subjected to various treatment and has lost faith in its effectiveness.

Treatment: The causes of the disability are explained and the patient is taught how to execute normal motion at his own volition. He must completely relax all the muscles of the extremity and successively contract selected muscles to secure motion of the wrist and separate finger joints. Every day the same movements are repeated. The

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

patient is informed that success largely depends upon his efforts to execute these motions voluntarily.

While treating a functional case one will notice how the mental attitude of the patient varies from that of the hysterical: the former responds willingly and with interest to the instructions, and his attention must be centered upon the hand; the latter is apprehensive to suggestions and mistrustful to muscle training; his attention must be diverted from the hand. The organic changes are dealt with as outlined below.

3. ORGANIC DEFORMITY

A condition in which the function is interfered with only by pathological changes in the anatomy of the hand or forearm or both.

Etiology: Injury to the soft or solid tissues is the primary cause; the contributing factors are: long-continued immobilization with forced inactivity, and as Goldwaith⁵ says: "Loss of interest in the case by the surgeon as soon as the acuteness has passed, with the result that persons of limited experience are made responsible for the later stages of treatment."

If anywhere restriction of motion is harmful, it ought to be in so complex a mechanism of motion as the hand, where forty muscles move twenty-seven bones and a complicated apparatus of ligaments bind them together. This explains why injuries to the hand give the large number of permanent disabilities.

Pathology: The most frequent changes are extensive fibrositis within and contractures of the skin, fasciae, tendons, muscles, and joints of the hand and forearm. A small number of cases present bony ankylosis and partial or complete muscular paralysis. Atrophy of muscles and weakness of disuse and more or less circulatory disturbances are found in all these cases.

Symptoms: The position of the fingers, mostly contracted in flexion, the stiffness of joints, the weakness of muscles and the other symptoms which restrict motion, differ according to the character and extent of the injury and the thoroughness of the contributing causes. One may assert that the severity of the symptoms and the probability of permanent crippling is in direct proportion to the time lost in needless rest and to the inadequate after-treatment, and not to the severity of the primary injury.

Treatment: Prophylactic physiotherapy would prevent many a crippling of the hand. Its object is to keep the muscles functioning, the tendons from adhering to their sheath, the joints from stiffening and the trophic changes from developing. This is attained by means of physical measures begun as early as the third day after the injury.^{6 7 8} The treatment should be given by the surgeon in charge of the case or at least under his strict supervision. Great harm can result from inefficient physiotherapy in the early stage after the injury.

In a well-developed deformity a thorough trial should always be given to physiotherapy before any operative procedure is undertaken to reconstruct anatomic damages. Too hasty forcible correction

of stiff fingers, joint resection, tendon loosening, and other operations on the hand are rarely successful and usually lead to greater disability than before.^{9 10 11 12}

The objects of physiotherapy are: to soften and stretch contracted tissues, to increase muscular power and to regain motion of the finger and wrist joints.

The hand, and the forearm when indicated, is exposed to a stimulating remedy which produces an artificial hyperemia. The agents most suited for this purpose are: the hyperthermal bath, with or without galvanic ionization; the high-frequency current in the form of diathermy, and the radiant or convective heat. While the hand is thus exposed, the joints are passively manipulated and the scar tissues stretched. When active motion is possible the patient grips his fingers over a rubber ball or a piece of rubber hose and presses them also between the fingers. This active-resistive exercise increases muscular power while the stimulating remedy is at work. After about twenty minutes' exposure, the hand and forearm are massaged and vibrated to dissipate the artificially-created effusion, and each joint is moved within the limit of pain. A very efficient means to loosen adhesions in the fingers is the use of the vibrator. While the hand is exposed to light and heat, it holds with all its strength a working vibratote which best conforms to its hollowness. Further power and motion are gained by active and resistive exercises on apparatus. These should be constructed on the principle of raising graduated and measurable weight which is increased in proportion to the growth of muscular strength. The apparatus used are: for flexion and extension of the wrist; for flexion and extension of the fingers, and for rotation of the forearm. Besides that the patient is advised to do simple finger movements, such as crumbling of paper, compressing a rubber ball or piece of hose, which can be carried in the pocket, and other simple ones which help the flexors of the hand and forearm.

Nothing surpasses, however, the voluntary and unconscious use of the hand for productive work at home and in the workshop. At home he may do laundrying, window-washing, and other domestic work which necessitates grasping various objects with the hand; in the shop he may use the tools of his trade, which not only restores the hand but also accustoms him to work with a hand which may remain permanently disabled. It must be explained to the patient that this work is curative and will not lead to a premature discharge with loss of compensation. There should even be no objection that he gets a small remuneration for it, although still receiving compensation. This work is a therapeutic adjunct in reducing disability and should therefore be encouraged.

A brace should be worn during the night and in the hours of rest. The main object of it is to retain the correction. The simplest brace is the Krukenberg glove,¹³ or such a modification of it which has elastic tapes attached to the fingertips and has accumulators for these tapes on both, the flexor and extensor, surfaces of the wrist.

With this arrangement of elastic pulls, the glove serves not only to keep the correction and to stretch the tissues, but also to increase the power of muscles when the fingers are flexed and extended against the resistance of the elastic tapes. Of the other corrective appliances those devised by Schede¹⁴ have the same threefold effect, and are the most commendable.

In conclusion I wish to add that about every fortnight all hand deformities should be measured and the motion and muscular strength recorded. The finger motion is measured with a pleximeter or a protractor of a cardboard with the scale marked in degrees¹⁵ or by means of a lead tape, and then graphically represented on paper.¹⁶ The muscular strength is measured with a dynamograph or by squeezing the partly inflated cuff of a tycos sphygmomanometer and noting the height to which the mercury can be raised.

The patient must be informed of any improvement because it will encourage and convince him that the treatment is effective and is restoring his hand to usefulness.

References.

1. Hurst, A. R. War contractures: localized tetanus, reflex disorders, or hysteria. *Brit. J. Surg.* 6:603-604. (April) 1919.
2. Boettinger, A. Diskussion: Zur therapeutischen Verwendung d. Hypnose bei Faellen von Kriegshysterie. *Neur. Centrabl.* 6:262. (March) 1916.
3. Rixon, H. L. Hysterical perpetuation of symptoms. *Lancet.* 1:418. (March 15) 1919.
4. Morton, W. C. Treatment of functional disabilities of limbs. *Brit. J. Surg.* 6:498. (April) 1919.
5. Goldwath, J. E. Work of physical reconstruction as it concerns orthop. surgery. *N. Y. M. J.* 110:397. (Sept. 6.) 1919.
6. Lange, F. Die Orthopaedie int. Kriege. Muenchen. med. Wehnschr. 61:2157. (Oct. 27) 1914.
7. Ritschl. Orthopaedisches in d. Verwundetenbehandlung. *Med. Klinik.* 1:124. (Jan. 31) 1915.
8. Buchholz, C. H. Therapeutic exercises and massage. Lea and Febiger, Philadelphia, 1917. pages 188-9.
9. Hohman, G. Zur mediko-mechan. Behandl. der Fingerversteifungen. Muenchen. med. Wehnschr. 63:105. (Jan. 8) 1916.
10. Cooper, G. C. Contractures and allied conditions. *Brit. med. Jour.* p. 199. (Jan. 27) 1917.
11. Metcalf, C. R. Impairment of function of hand due to war injuries. *J. Orthop. Surg.* 1:198. (April) 1919.
12. Spitzzi, H. Orthop. Behandlung Kriegsverwundeter. Urban und Schwarzenberg. Berlin. 1915. p. 107.
13. Krukenberg, H. Lehrbuch d. mechan. Heilmethoden. Enke. Stuttgart. 1896. p. 169.
14. Schede, F. Mobilisierung versteifter Gelenke. Muenchen. med. Wehnschr. 62:279. 1915.
15. McKenzie, R. T. Reclaiming the maimed. Macmillan Company, N. Y. 1918. pages 68-70.
16. Gottlieb, A. Graphic presentation of finger deformities. *Surg. Gynec. Obst.* 29:420. (Oct.) 1919.

EXAMINATION OF EMPLOYEES IN INDUSTRY.*

By CHARLES ALFRED DUKES, M. D., F. A. C. S.
Oakland, Cal.

Industry exists solely for the purpose of converting raw materials into finished products of marketable value. Labor is employed in the industry for the assistance it is in the accomplishment of that purpose, and its value is fixed by the skill and facility of its effort in that direction as manifested by the quality and quantity of its output.

Industrial Medicine may be defined as the theory and practice of medicine applied to the purpose of preventing and alleviating sickness and injury among industrial workers in order that they

may enjoy the benefits of continuous productive employment.

In August, 1918, Samuel Gompers is quoted in the official U. S. Bulletin as testifying that it is his opinion—speaking in his official capacity as president of the American Federation of Labor—that physical examinations of workmen were necessary for the prevention of the spread of contagious diseases and for the protection of the men who might be placed at work for which they are physically unfit.

One of the greatest sources of saving to the employer is the physical selection of employees for work. This is done by the physical examination of all applicants for work before employment. The placing of all comers on jobs without any effort at a physical selection for their work is responsible for a great financial waste which cannot be shown in dollars and cents but which, nevertheless, is very evident.

This waste is due to the following:

1. The employment of the physically unfit who later must be discharged because of inability to do the work.

2. The employment of the physically unfit who continue to work for a few months or a year with a gradual decrease in their efficiency due to advancing disease until finally they are forced to quit work. They have been a source of loss to the concern from the time of their employment.

3. The employment of the physically unfit who, because of their condition, are subject to frequent accidents. Every accident is a loss to the concern.

4. The employment of the physically unfit who suffer accidents which ordinarily would not be serious, but because of the coincidental, unknown physical condition, are fatal, or at least, cause prolonged disability. The loss to the concern from this source is far greater than most employers are aware of.

5. The employment of a person who has a contagious disease who communicates it to others of the working force. The acute contagious diseases are more common, but tuberculosis and syphilis cause a great loss.

6. The employment of the mentally deficient who never can be fitted to a job, and who form a certain percentage of the floating labor on account of this fact. An observant industrial physician will pick out this type during the course of an examination.

The old employees:

Complete physical examination of, either periodically or whenever some condition arises showing the need of a general survey.

(a) To discover threatened diseases early, while still preventable and curable.

(b) To discover any existing condition that makes the employee prone to accident, or to cause accidents to others. It is just as important to survey the human machine to prevent accidents as it is to survey the mechanical appliances of a plant.

(c) To rule out those with contagious conditions to prevent the spread of disease.

(d) To discover those with handicapped con-

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

ditions, either physical or mental and to place them at types of work which will not be hazardous for them and where they can still be efficient in spite of the handicap.

(c) Examination should precede the treatment of any condition, no matter how minor, thus preventing the administration of a wrong type of treatment through lack of knowledge of the true condition or of coincident disorders.

Most industries make it imperative that no old employee be discharged because of physical defects, but that they shall be surveyed or examined at regular intervals and recommendations made as to their fitness for employment, which rules are faithfully carried out by those in authority.

It is fair to assume that those rejected under these physical examinations would have lost their positions because of inefficiency or the exaggeration of their infirmities or sickness. Consequently it is also fair to assume that before the end of a year they would all have been the cause of expense to the industry as well as loss to themselves. The amount of loss to the industry is a difficult one to determine as it would vary from a few dollars to several hundred dollars per capita. Averaging the cost of training a man at \$45 times the number of men rejected would probably be a fair estimate of the loss in time and labor, plus the loss of taking care of these men because of their increased disability.

A news comment on "Medicine in Industry" in a recent issue of the Saturday Evening Post, showing the interest of the lay press, is as follows:

Many employers are finding that great profit results from the establishment of a system of physical examinations of all applicants for work before employment. When men are simply hired without being subjected to a preliminary investigation the outcome is frequently mutually unsatisfactory. Often such men are unfit for the work in hand, and in a few months they are sure to show a gradual decrease in efficiency due to the progress of disease or a dislike for the occupation they have engaged in. When a company hires men who are wholly unqualified for the service at hand the corporation is sure to lose through increased accidents and large labor turnover or because of unrest created in the organization by these undesirable employees.

It has been found that in industries where medical examinations are unknown, the prevalence of acute contagious diseases is far greater than in those businesses where all prospective employees are carefully investigated. It is also a fact that such examinations enable the placement of men in positions where their efficiency is greatest.

Another investigator makes the statement that the practice in the United States with reference to medical work in industry indicates an average annual cost of \$2.50 per employee for medical examinations. Let us assume that one of our big American industries employs 200,000 workers. Let us further suppose in this industry there are no medical investigations of applicants for jobs. In such an industry 20,000 men, or ten per cent. of those employed would be totally unfit for work

and would soon be dismissed. This means 20,000 men added to the labor turnover, and if the cost of the labor turnover in the industry amounts to say \$40 per person, then the employment of these undesirables has cost the industry \$800,000. Now, if we accept the figure of \$2.50 for each examination, as stated above we find that this particular industry could have adopted a system of examining all applicants or prospective employees at an expense of \$500,000 annually. The yearly saving from the plan, therefore, to the industry would have been \$300,000. It is further true that additional benefits from medical examinations of this kind would have resulted to all the individual companies making up the industry in question.

An authority on the subject of industrial hygiene called attention recently to one instance where an examination of 15,000 applicants caused the rejection in a certain industry of forty-four cases of acute contagious diseases which would have caused the companies in question great loss, due to the starting of six different kinds of epidemics that undoubtedly would have started if the diseased applicants had been engaged.

The charts which we are showing illustrate the types of diseases and disabilities which have been found in the examination of several thousand employees. The lessons to be learned can be readily deduced from these disabilities and what it would mean to the industry to have had these men misplaced.

GRAPHIC CHART SHOWING DEFECTS FOR WHICH APPLICANTS WERE REJECTED

| | |
|------------------------------------|-------|
| Number of applicants examined..... | 12014 |
| Number of applicants rejected..... | 1942 |
| Percentage of rejections..... | 16 |
| Blood pressure | 581 |
| Teeth | 382 |
| Heart | 302 |
| Hernia | 274 |
| Eye | 264 |
| Miscellaneous | 236 |
| Extremities | 220 |
| Genito-urinary | 210 |
| Lungs | 82 |

GRAPHIC CHART SHOWING DEFECTS FOUND IN EMPLOYEES AND APPLICANTS EXAMINED

| | |
|------------------------------------|-------|
| Number of applicants examined..... | 12014 |
| Number of employees examined..... | 6924 |
| Total number of examinations..... | 18938 |
| Teeth | 4706 |
| Flat feet..... | 1700 |
| Extremities Varicose veins..... | 975 |
| Miscel. | 399 |
| Amputations | 57 |
| ..... | 2831 |
| Eye | 2427 |
| Defects of vision..... | 2285 |
| Diseases | 113 |
| Blindness, one eye..... | 29 |
| Diseased tonsils | 2177 |
| Blood pressure | 1957 |
| Genito-urinary | 1357 |
| Skin | 868 |
| Heart | 721 |

| | |
|----------------------|-----|
| Hernia | 696 |
| Fractures | 551 |
| Spinal defects | 509 |
| Ear | 448 |
| Lungs | 169 |
| T. B. | 56 |
| Other | 115 |

The high percentage of rejection shown by this table and the large number of defects found, should not astonish us when out of over 32,000 examined school children over 16,000 were found to have defective teeth. New York City estimated nearly 17.3 per cent. of the school children were ill-nourished, while in the draft examinations many Boards rejected from 40 to 67 per cent., and in one district in East Boston 1675 men were examined to secure 214 healthy men.

References.

- The Journal of Industrial Hygiene of Sept. 1919. "Industrial Medicine and Surgery, a Résumé of Its Development, Scope and Benefits," by Harry E. Mock, M. D., F. A. C. S.
 Industrial Medicine and Surgery, by Harry E. Mock, M. D., F. A. C. S.
 The Journal of Industrial Hygiene of December, 1919. "Scope of the Physical Examination in Industry," by C. D. Selby, M. D., Toledo, Ohio.
 The Journal of Industrial Hygiene of January, 1920. "The Proper Executive Function of the Industrial Physician," by Dudley R. Kennedy, Counsellor in Labor, Employment and Industrial Problems, Philadelphia, and Richard M. Neustadt.
 The Saturday Evening Post.

502 Central Bank Bldg., Oakland, California.

ROENTGEN TREATMENT OF UTERINE HEMORRHAGE.*

By LYELL C. KINNEY, M. D., San Diego, Cal.

The treatment of atypical uterine hemorrhage is the most satisfactory task referred to the radiologist. Most of these patients are seen after many months of bleeding, with severe anaemia, and frequently they have been curetted several times. In spite of this history the prognosis of a suitable case is almost invariable. It is practically certain that the bleeding can be controlled within four weeks and a rapid general recovery instituted by that time. The change in these women is little short of marvelous, and is most grateful to them and a source of great satisfaction to the attending physician as well as to the roentgenologist.

In spite of the brilliant results in properly chosen cases the sine qua non is an accurate diagnosis. Most of our patients are referred by gynecologists after careful study, and when they are referred otherwise they are thoroughly studied with a competent gynecologist. It is only under such painstaking co-operation between a pelvic surgeon and the roentgenologist that any actinotherapy is justified.

Uterine hemorrhage is only a presenting symptom, never a diagnosis, and the underlying pathology must be ascertained before any intelligent treatment can be instituted. In approaching a case of prolonged atypical hemorrhage one must eliminate, first, the accidents and incidents of pregnancy, second, pelvic infection, and third, malignancy. Having ruled out this triad practically every case of uterine hemorrhage can be controlled by roentgenotherapy.

However, efficient X-ray treatment usually involves the establishment of the menopause and sterility, and, therefore, the X-ray will only be called into use after the general physical and mechanical conditions have been ruled out or properly treated. There are cases on record where the ovaries have been protected during X-ray treatment and normal menstruation and normal pregnancy have followed a clinical cure. However, the danger of the complete arrest of menstruation limits the X-ray treatment of uterine hemorrhage to those conditions where the establishment of a menopause is justifiable.

We have found roentgenotherapy efficient and suitable in the following types of cases:

1. In patients that have atypical bleeding from a grossly normal uterus nearing the menopause or as an incident of the menopause the hemorrhage can be controlled and the menopause established in practically 100% of cases.

2. In uterine hemorrhage from small fibroids at or near the menopause the arrest of the bleeding and establishment of the menopause are certain, and the fibroid will disappear or decrease in size and become symptomless.

3. Patients that are poor surgical risks with uterine hemorrhage from any type of fibroid can be relieved from their symptoms of hemorrhage quickly and effectually by X-ray.

4. There are certain cases where uterine hemorrhage and dysmenorrhea are so destroying the patient's emotional and mental balance or so undermining her physical condition that a menopause is justifiable, and where it is justifiable it can be secured easily and certainly with roentgenotherapy. I believe that X-ray is distinctly indicated in this class of cases.

On the other hand roentgenotherapy is contra-indicated where the establishment of a menopause is not justifiable, and it is contra-indicated in the treatment of uterine hemorrhage where that hemorrhage is a symptom of an urgently surgical condition. We may group these classes as follows:

Uterine hemorrhage in adolescence can be readily controlled without danger by radium and it is not justifiable to assume the risk of the menopause except where radium is not obtainable or in extreme cases. In the hemorrhage of uterine fibroids in young women the patients should be given the chance of a myomectomy if possible rather than hazard their expectancy of motherhood. Uterine hemorrhage accompanying a submucous or sloughing fibroid is the presenting symptom of a distinctly surgical condition and should only be treated as such. The treatment of large fibroids with symptoms of pressure can be successfully carried out with X-ray and is certainly justifiable in those cases presenting serious surgical counterindications. But whether the roentgen treatment of large fibroids in patients that are good surgical risks is justifiable is still an open question. I do not believe that it is justifiable and I consider that the extirpation should be strongly advised for every patient having a large fibroid or with definite pressure symptoms. Furthermore, uterine hemorrhage from malignancy

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

is an indication for either radium or surgery, and one must be constantly on guard to see that these cases have their radium or their surgery at the earliest possible moment.

Those of our surgical friends who have not seen the light find many arguments against actino-therapy, but most of them are judging the present-day treatment by the accidents of the past, and would be highly indignant if we judged their surgery by the mistakes or inexperience of earlier days. The X-ray treatment can now be given with practically no discomfort or nausea and without interfering with the daily routine of the patient. The danger of injury to the skin is nil with modern methods and certainly less great than dangers of disabling adhesions or the accidents of hysterectomy.

The main argument against actino-therapy is the supposed danger of subsequent malignant degeneration. This may be good theory but the experience of ten years does not bear it out. The literature shows the incidence of one-half of one per cent. of sarcoma in fibroids, but even if this percentage represented a fatal mistake it does not equal the best statistics of mortality following hysterectomy, and it must be remembered that at least 87% of uterine sarcomata will recur shortly after excision. Regarding the possibility of carcinomata following the X-ray treatment of fibroids we can state definitely that it does not occur. Dr. Pfahler stated at Atlantic City in June, 1919, that he had never seen malignant degeneration following X-ray treatment in his series of 150 cases. The Freiburg clinic reports four hundred cases of successfully treated fibroids where no malignancy has developed. Beclere of Paris reports four hundred cases dating back to 1908, none of which have developed malignancy. This fully bears out the contention that a symptomless fibroid is an innocent fibroid, and, further, this answers the theoretical objection that a residual fibroid after actino-therapy will develop malignancy.

The final argument that is raised is the danger of overlooking concurrent surgical conditions. However, it is no more probable that one will find a diseased appendix or diseased tubes or ovaries in these patients with uterine hemorrhage than in any other patient that comes under observation. It is no argument against radiotherapy that these conditions may exist and not be relieved by the treatment. A careful diagnostician will bear these possibilities in mind and treat them surgically whether or not they accompany uterine hemorrhage that would otherwise yield to radiotherapy. But after eliminating concurrent surgical conditions and malignancy there are a large number of women in the third and fourth decade to whom roentgenotherapy offers a complete, safe and certain clinical cure from these distressing symptoms.

Certain advantages are claimed for radium in the treatment of uterine hemorrhage in contrast to X-ray, but it must be remembered that radium demands intrauterine application and it is no

more certain and no more efficient than X-ray treatment.

The technic of X-ray therapy in uterine hemorrhage varies widely. Beclere has consistently used the weekly application of three Holzkecht units and established menopause in sixty per cent. of his cases within three months. Wm. Meyer is giving a single treatment of forty to ninety minutes and in his last twenty-five cases, ranging from 17 to 45 years of age, established a menopause at one sitting. It has been our experience that the average case will yield completely to thirty-six filtered erythema doses, irrespective of how they are given. It is our policy to divide the abdomen and back into twelve areas. Three areas a day are given a massive treatment thus extending the series over four days. A three to four weeks interval is allowed between each series. The series are repeated until the patient has missed one menstrual period and developed constitutional symptoms of the menopause. Our laboratory is situated so that it is possible to give X-ray treatments practically out of doors, and only four of our patients have complained of discomfort or nausea.

Thirty cases with uterine hemorrhage have been referred to us for roentgenotherapy in the past four years. With one exception these patients were 39 to 50 years of age. They were distributed as follows: Four cases of myopathic hemorrhage; twenty-two cases of small intramural fibroids; two cases of fibroids reaching to the crest of the ilium; one hypertrophic endometritis with hemorrhage after repeated curettage; and one mental case, thirty years of age, where excessive hemorrhage demanded a menopause. One case has been omitted from this series—a young girl twenty years of age with tuberculosis, asthmatic attacks and excessive menstruation. The treatment was discontinued as the asthmatic attacks were increased by the X-ray.

The seriousness of hemorrhage has varied from flooding during the time of a regular period to a constant flow of four months' duration. The duration of symptoms has run from six months to as high as ten years. Fifty per cent. of these patients faced an immediate hysterectomy as the only other alternative. The results have been uniform in every case. The hemorrhage was completely checked and menstruation ceased. A careful review of these cases shows no recurrence of symptoms and no pelvic complications following treatment. Six of the cases did not menstruate again after receiving their first X-ray series. In twenty-two cases there was an increase in the flow in the first subsequent period, followed by a normal or sub-normal second period, and a complete arrest following the third X-ray series. Two cases required a fourth X-ray series to establish a menopause. In the two large fibroids noted the tumor decreased so that it was not palpable above the symphysis.

It is our custom to warn each patient that she may have an excessive period after her first X-ray series and she is advised to remain in bed during this entire period. This precaution keeps down

any alarming flow at the first subsequent period and it has been unnecessary to take any precaution after the second series.

The following two cases are reported in detail as they typically represent the entire series:

CASE NO. 2. UTERINE HEMORRHAGE FROM A SMALL FIBROID

Mrs. C. F. Age 41. Referred by Dr. Francis Meade, November 26th, 1917. The patient complained of excessive flooding, of periods lasting from ten to twenty-one days, and this was of two years' duration. Pelvic examination showed a small intramural fibroid, not palpable above the symphysis, about the size of a lemon. Otherwise the pelvic organs were negative. In addition the patient gave a history of pulmonary tuberculosis and duodenal ulcer, both of which were confirmed by X-ray examination. The patient was referred for the establishment of the menopause. She was given three X-ray series of twelve treatments each, on November 26th, December 12th, 1917, and January 10th, 1918, respectively. The first period was still excessive but not as free as formerly, the second period was normal and she has not menstruated since. After her X-ray treatments she was sent to the mountains for the tuberculosis. Her physician reports, on May 7th, 1920, that she had no pelvic symptoms, that her tuberculosis is now latent, and that she had had no atypical bleeding.

CASE NO. 9. HEMORRHAGE FROM A GROSSLY NORMAL UTERUS

Mrs. A. L. Age 40. Referred by Dr. B. J. O'Neill, September 29th, 1918. This patient was operated upon in 1914 and a chronically inflamed appendix, tube and ovary were removed. The uterus was found to be tied down by firm adhesions, the other tube and ovary were left in situ. In 1916 a cholecystostomy was done to relieve a chronic cholecystitis. Following her surgery in 1914 the menstruation was normal until the past summer when it became excessive. There had been six weeks of constant flooding in spite of repeated packing and curettage. Pelvic examination showed a uterus normal in size and contour, firmly adherent but otherwise negative. Microscopic examination of uterine scrapings was negative. This patient was given three X-ray series. The hemorrhage stopped immediately following the first series. Her subsequent period started normally but became excessive after a long motor trip. The second period was normal and was the last. On February 1st, 1920, this patient was seen still suffering from upper abdominal adhesions but she has been entirely free from hemorrhage and pelvic symptoms.

I desire to protest strongly against the indiscriminate use of X-ray and radium. Uterine hemorrhage demands an early and searching examination and the greatest accuracy in diagnosis. If the physician who is handling these cases can not reach an early decision he should have the immediate co-operation of an expert gynecologist. It is only by so doing that we can keep down the mortality from carcinoma of the uterus and prevent the development of serious surgical complications. On the other hand, in the conditions we have discussed, X-ray and radium are specific in the treatment of uterine hemorrhage and this should be borne in mind in the treating of those cases where surgery is not urgently indicated.

HEAT THE MOST PRACTICAL AND PROMISING TREATMENT IN UTERINE CARCINOMA.*

By J. F. PERCY, M.D., San Diego, California.

Today we are limited in the discussion of the cancer question merely to the terms of its treatment. Practically nothing regarding any other phase of the disease is known, certainly not to a degree to be of any value in its management from the standpoint of therapy. The basis of all our treatment of cancer is still empiric, as it always has been, and yet it can truthfully be said that progress has been made, except possibly in the inoperable types as far as it relates to the use of the cold steel knife.

There are five methods today for the treatment of cancer that have a rightful claim to the consideration of medical men. They are the knife, X-ray, radium, electro-coagulation (diathermy), and heat. All five of these in the hands of those most familiar with their correct and rational use have undoubted cures to their credit, and I say this with full appreciation of the significance of the word "cure" as it is related to the question of scientific accuracy especially in the treatment of cancer.

It is not necessary to extensively discuss the knife in the treatment of this disease at this time because the arguments for and against its use are to well known to need recapitulation here. There is no question of its great value could we always be certain that in its use it could be made to cut wide of the disease and in no instance invade the regions where the cancer cell is developing. Because of this uncertainty as to whether the knife will be the means of disseminating the disease into new areas we witness the effort being made everywhere by surgeons to find a more reliable substitute for it in the treatment of cancer. I expect to live to see the day when surgeons will universally condemn its use because of this undeniable and uncontrollable danger. There is another phase of the use of the knife that is usually ignored when it is advocated in the treatment of cancer. I refer to the classification of the type of case that presents itself for treatment. Is it operable or inoperable, and what are the signs and symptoms governing the decision to put it in one or the other of these classes? My own work has been almost entirely with the inoperable type of case, and yet my technic and its results are frequently discussed with the operable form of the disease.

The X-ray in superficial growths especially of the skin is of undoubted value. It does cure by destroying them. It is in the deep-seated growths that the consensus of opinion as to the real value of this agent have not yet fully crystallized. One most interesting and valuable fact has come out of its intensive use, however; the really tremendous inhibiting power of the skin in preventing the penetration of the rays. This seems to be

*Read in the section on Gynecology and Obstetrics, Medical Society of the State of California, Santa Barbara, May, 1920.

one of the chief hindrances at present to its most efficient use.

The storm center for the treatment of cancer seems to hang over the question of the use of radium. It has moved into the place formerly held by the X-ray. And, like all agents, with tremendous potential energy for good or evil in the treatment of disease has not yet reached the place where its possibilities for good are fully understood or its limitations well defined. That radium, like the X-ray, has a definite and valuable place in the treatment of certain forms of malignancy there seems to be no question. Some of the best trained and most experienced medical minds, both here and abroad, are giving their best efforts with enthusiasm to the clearing away of these problems, and the results of their work even as far as it has gone can neither be questioned or denied.

A recent writer has reported sixty per cent. of his supposedly inoperable uterine cancer cases alive and well three, four and five years after their treatment with radium. At present he is engaged on the very practical problem of trying to determine why his thirty or forty per cent. treated by the same agent did not recover also. He mentions an experience which he observed in the use of radium in the treatment of uterine cancer; that in some cases where it seemed to have "failed completely and the treatment was abandoned as hopeless, the woman returned months later immeasurably improved or even clinically cured." But this writer does not seem to know that this experience with radium which he explains on the basis of some "mysterious force" at work is not an uncommon one with any or all of the methods that have ever had any standing in the local or general treatment of cancer. He also speaks of a probable "cumulative action from the radium" as a possible explanation of the unexpected good results. The foregoing is a very brief statement of one side of the picture regarding the value of radium in the treatment of cancer, the favorable side.

The other is made by those who have used it more or less thoroughly and as they believe intelligently, and have abandoned its use in any form of cancer as too dangerous or uncertain in its effects and therefore lacking in any results that were worth while. In one of the largest Eastern clinics with an almost exclusive cancer service, which it was my privilege to visit during the past winter, it was openly claimed in one of their public clinics that they had practically excluded radium from the institution in the treatment of any form of cancer. The statement was distinctly made, first, that they had a large quantity of radium, and, second, that its use in the hospital was directed by a physician "who probably knew more about the correct use of radium in the treatment of cancer than any man living either in this country or in Europe." They emphasized not only their lack of results as far as benefits to their patients were concerned but they especially referred to the distressing sequela which so often gave rise to a form of permanent suffering unequalled by any other method so far de-

veloped for the destruction of a malignant mass. This is the other side of the picture, the unfavorable one.

I believe that both of these pictures are overdrawn, and the fact that they are will give point, I trust, to the plea that I shall make at the end of this paper for a more comprehensive study of all the methods that give any promise for the cure of this disease. As I proceed I shall try and discuss as judicially as I can my personal views based on my experience as to the relative value of all five of the methods of the treatment of cancer under consideration at this time.

The only effective substitute for the cold knife in cancer is the hot one, and when the technic of its correct use by surgeons is learned, there can be no question as to its final place in the treatment of all forms of malignancy. The fundamental thing in the use of heat which has not been grasped in its entirety by those who wish to make use of it in a successful way is that the results depend on the dissemination of heat until the tissues known to be involved in the malignancy and those also only suspected to be involved are fully infused with the heat. This means that it is not the number of minutes that is given to the dissemination of the heat into the tissues, but the one of whether it has really made the tissues so hot in the course of the treatment that the cancer cells can no longer live there. In other words, surgeons in speaking of this technic refer to the number of minutes that they employ the heat, forgetting that they cannot correctly speak of the treatment in terms of minutes, for time is not the important factor in its most effective use. The essential, the necessary and the important element, I repeat, is a degree of heat that the laboratory and clinical experience has shown will kill the cancer cell in the tissues, regardless of whether it takes a long or short time to get it there, and in this regard each case is a law unto itself.

The statistics of the late Dr. John Byrne following his use of the high heat in cervical carcinoma are a sufficient defense, if any is needed, against any question that may be raised as to the value of the use of the cautery knife in carcinoma. This surgeon reported 60% of his cases alive and well five years after the high amputation of the cancerous cervix by the actual cautery followed by the infiltration of the unremoved tissues with heat until they were of the consistency of "horn." This percentage of cures was obtained not on a few cases for the material which came to him was "enormous." His results, published in 1889 in a remarkable monograph entitled "A Digest of Twenty Years' Experience in the Treatment of Uterine Cancer," have never been equaled, and we must remember also that he had no operative mortality following his technic in this operation.

One of the serious difficulties following the use of the X-ray, radium or electro-coagulation in the treatment of malignancy is the fact that in the event of their failure to relieve or cure usually nothing further in the way of surgery or the heat technic can be used. The reason for this is that

the results from either of these agents as far as the normal or abnormal cell is concerned cannot be regulated so as to produce their maximum effects only on the malignancy. The practical consequences of their use too often is to destroy not only the abnormal cell but the normal as well, and too, far beyond the area of their immediate application. It is for this reason that the operating surgeon who has one of these cases referred to him for surgical treatment after the use of these agents or methods is loath to attempt it for fear, mainly, of a poor repair following his operation. In addition to this his difficulties are frequently increased because the tissues invaded by his knife bleed in a most persistent way. Another more recently recognized danger following the use of radium and the X-ray especially are the changes produced in the blood of the patient. These alterations in the blood produce in an appreciable percentage of cases an early, dangerous and even fatal result. Electro-coagulation is a little less formidable in this regard than are the other two. Another fact should be referred to in this connection also. Radium and the X-ray frequently leave, as far as the pelvis is concerned, a rather formidable type of adhesions and scar tissue. These are usually found in the form of bands and masses that also prevent subsequent successful operative procedures with either the hot or cold knife. I am speaking now from a rather large surgical experience with this class of cases. Many of them developed their adhesions in my own clinic where for some years I followed the so-called deep penetration method by the X-ray, subsequent to the use of the heat technic. In addition to this many cases were sent to me through the courtesy of colleagues, for the heat treatment, that had previously had exposures, not only to the X-ray but also with radium and diathermy. I have indeed had cases under my care who before I saw them had been treated consecutively by all three of these methods. Where I felt warranted in opening the abdomen with the hope that I might accomplish something, at least in a palliative way, I found that where these agents had been used intensively that the surface appearance of the intestines, as they lay together in the lower abdomen, was apparently not altered. But when I tried to get into the pelvis it was impossible to do so because of the perfect adhesions between the gut coils. The intestines were glued together in a remarkably effective way and, too, without any macroscopic evidence of a previous inflammatory reaction. There was also a persistent and at times an alarming oozing wherever the tissues that had been acted upon by these powerful agents were disturbed by my fingers and scalpel. This was especially true of the abdominal incision.

The chief disadvantages of the heat treatment are two. First, in cervical carcinoma the development, in a small proportion of cases following the use of the heat, of a vesico-vaginal fistula. This is usually manifest within a week or ten days. Second, a secondary hemorrhage coming on about the fourteenth day after the treatment. It

should be stated, however, that I have had none of these hemorrhages among my own cases, neither have I heard of any in the practice of other surgeons since making it the rule to tie both internal iliac and ovarian arteries. One of the surprises to the novice in the use of the heat in the pelvis is the remarkable post-operative freedom from pain and suffering. This leaves as the chief objection to the heat technic the injuries to the bladder. This can be dismissed in a few words. If cancer has already made changes in the base of the bladder it is merely abandonment of the woman to her fate not to infuse heat into it when it can be done so easily. I have had no trouble with my patients when fistulae develop, as they sometimes but not always do, because I always explain to them in my preliminary statement that I may make a hole in their bladder and that it is much better for them that I do it than for the cancer to be the cause of it. In addition to this I never minimize to the patients or to their family what a horribly disgusting and offending thing a patient with this condition is to everyone, especially to those who have to live in the same house, and that this remains true until the fistula is closed. I have found it to be the rule that the patient would rather have a hole in the bladder with no cancer than no hole and the cancer still there. They are always told that the fistula probably can be successfully closed if it does not do so spontaneously within six weeks or two months. In some cases I have had to convert the upper part of the vagina into the lower part of the bladder. These cases have a useful bladder, one of them now over fourteen years.

It can also be said of heat, when used in the treatment of cancer, that it destroys an immense number of malignant cells just from its minor or surface application. This is especially true in the cautery surgery of breast cancer, in the axilla, the mouth, the neck, along the ureters and iliacs, and in the parametrium, to mention no more. To get this result you do not have to get the high degrees of heat through introducing the heating head into the deeper structures; a surface application of a temperature sufficient to melt fat is all that is required, after the skin is opened or removed. In this way you can both treat and preserve important structures, including the nerves, blood vessels, the bladder, intestines and rectum.

In applying heat to these vitally important regions you are permitted some regulatory supervision over the dosage so that you can destroy cancer cells alone or you can carry it on to the degree sufficient to melt down a large and dense collection of these cells. But the most important thing of all (and I want to call your attention to it again) is the fact that when heat has been applied in a destructive way to cancer-bearing areas, the injury sustained by the normal structures is not sufficient to prevent a reasonably good repair. If the local disease is destroyed, by the heat, the filling-in process, or repair, which follows is often a remarkably good, as far as function is concerned, imitation of the normal structures.

I cannot let the opportunity, that your section has given me, Mr. Chairman, to present the claims of heat in the treatment of cancer, pass without a plea for the earnest consideration of another important phase of the cancer question. I refer to the fact that there is today no concerted scientific effort to study cancer from the standpoint alone of *treatment*. An immense amount of splendid effort is being expended to clear the question as to the origin of the disease, but the results so far have been greatly disproportionate to the time, money, equipment and brains given to unraveling the mystery. There is a constructive scientific community of interests for the study of the cause or causes of cancer but nothing has been done along the same lines to clear up the moot points in its treatment. We hear, and even know, of the benefits following the use of the knife, of radium, of electro-coagulation, of the X-ray and of heat, and as well of various other methods that have undoubted cures to their credit. But they are reports of individual workers or of institutions devoted only to their own conception of what is best in the treatment of this disease. We have standardized the use of quinine, of digitalis, of mercury, of morphine, of salvarsan and the various antitoxins, to mention no more. By the same token, we have for the successful treatment of cancer, at least in some of its manifestations, a sufficient number of agents and methods to fix our attention today on this very important aspect of the cancer question. Each advocate of a special treatment knows what he can do with it, and as well what he cannot do; but no individual or institution has or can under present conditions correlate all the knowledge of the successes and failures of all the workers and give it to us as a great gift.

The explanation is not far to seek. Each method recognized today as worthy of consideration in the treatment of cancer is either an individual or a group proposition. Each one of these individuals or groups at present are too much concerned with their own hopes based on their methods or technic to investigate in a constructive way the most important part of the valuable work in the treatment of cancer really accomplished by the other groups. If this could be done in the near future on a large number of cases it would soon result in a standardized treatment that would be recognized by both the profession and the public as the greatest step toward the clearing up of the cancer treatment question so far developed.

NASAL CATARRH

By C. A. Phelan, M. D., San Francisco.

Catarrh, from the latinized form of the Greek word, "catarrhus," is a generic term used to denote the sort of fluid flow discharging from a membranous surface. This may be a simple serous or sero-mucous, mucous, muco-purulent, or a sanious catarrh, and the ratio of seriousness is placed in the above order. A catarrh may be acute, sub-acute or chronic, with more or less fever.

As applied to the nasal region, catarrh is not a disease but only a symptom, and may be a mani-

festation of many and varied pathological states of the nasal chambers, or a local manifestation of a systemic condition, sometimes of the simplest and sometimes of the most serious.

Nasal catarrh is a subject of vast importance for it is often met with in practice since it is a common accompaniment of many general diseases. In Influenza nasal catarrh is always present, and it is undoubtedly by the nasal discharges that the bacillus is spread about and the contagion conveyed from person to person.

Always examine the patient's handkerchief because this is the pathological flag. In rhinorrhoea, the discharge is mostly serous, merely wetting the handkerchief, staining it but little, and not stiffening it at all. In chronic rhinitis, the flow is mostly a mucous fluid which adheres to the handkerchief and agglutinates its folds, but which does not discolor. In purulent rhinitis, the discharge is yellow-colored and sometimes offensive, discolored to a green or yellowish green, and it stains, starches and agglutinates the handkerchief. In atrophic rhinitis, masses of foul smelling crusts are often expelled from the nostrils. And if the patient waves before you a sanious colored handkerchief—beware! Think of the matadore waving his flag in the arena, and look for malignant disease.

The prevalence of nasal catarrh then demands that we should know all that we can about it. There is also another reason, and it is one that the practitioner must always be prepared to combat among the laity and take care not to help to spread about, and that is that nasal catarrh is incurable. It is one of the fallacies that has a strong firm hold on the laity and even, strange to say, on many learned medical men, that chronic nasal catarrh is an incurable malady and must be endured throughout the patient's lifetime. It is truly remarkable how many medical men believe this to be true and do not hesitate to tell the patient that he must never expect to be cured. Now, this can only be explained by ignorance of the nature of the cause of nasal catarrh.

It is quite true that many cases of this malady are very difficult to cure, and no ordinary or even extraordinary therapeutical means will do so, since many such intractable nasal catarrhs are due to pus polypi in the maxillary antrum and frontal sinus keeping up a continual drenching of the nasal passages with mucus, pus and blood. With many patients nothing that the practitioner can do will cure, the only remedy being a surgical one, after which it takes about six months to effect a cure. But I want to emphatically emphasize the fact that the disease can be eradicated.

In examining a case, go carefully into the history and see if the nasal catarrh dates back to repeated attacks of influenza, the catarrh incident to this malady often extending to the antrum or other nasal sinuses, so becoming chronic.

The method of examination is an important consideration in the investigation of the causes of nasal catarrh. First, note the shape of the nose, as those with long and high noses and consequently, narrow nasal cavities, are more likely to

suffer from intractable catarrh than those whose noses are broader and lower, with a wider interior.

The mouth should always be carefully examined, and it is remarkable how often this is overlooked in practice in relation to nasal discharges. In many cases pyorrhoea alveolaris and carious teeth are found to be present. The septic mouth induces a septic pharyngitis, and this brings on a purulent rhinitis, and so the nasal discharge is kept going from constant reinfection from the mouth.

The tonsils should be examined for, when enlarged, especially if follicular with open spaces readily accumulating inspissated septic material, they are a fertile source of nasal sepsis, and this keeps up a nasal catarrh. The nasal pharynx should always be examined with a retro-pharyngeal mirror. Adenoids in the nasal pharynx, by becoming periodically septic, will maintain a discharge from the nose.

Lest we forget, let me impress the necessity of making an examination of the ears in all cases. It is remarkable, but no less a fact, that a discharge from the middle ear may cause and account for the continuance of a nasal catarrh, the ear discharge being precipitated down the eustachian tubes and so into the nasal pharynx and nose.

We have heard a great deal from time to time with reference to the nose infecting the ear, and it is well recognized that such extension of nasal sepsis is not unusual. The ear may, and does, infect the nose, and the fact that aural discharges are liable to be precipitated down the eustachian tubes and into the nasal passages, setting up purulent rhinitis and sinus diseases, has not been sufficiently considered as a direct cause of such trouble.

There is little doubt but that much of the danger of such septic irrigation descending from the upper pharyngeal region and from the middle ear by way of the eustachian tubes is prevented by the active function of the tonsil. In these structures bacterial changes are constantly carried on, and from them auto-vaccination proceeds by which the patient is protected by the organism of this pus escaping down from the septic middle ear. It is imperative, therefore, to ever keep the likelihood of aural sources of infection in mind, and to scrutinize these cavities carefully, otherwise a sure source of sepsis may easily be overlooked.

The method of examination is an important consideration in the investigation of the causes of nasal catarrh. It is a great mistake, and even likely to lead one astray in diagnosis, to put a speculum straightway into the nostrils and so attempt to elucidate the cause of a chronic discharge. I would lay stress upon the value in making inquiries into nasal cases by commencing with the outside by palpation and inspection of the groups of cervical lymphatic glands.

One of the most intractable cases of purulent rhinitis that I have seen was that of a person who came to the clinic complaining of pain and swelling in the sublingual and sub-maxillary regions, and these lymphatics were found to be acutely inflamed. The cause was a septic discharge from the nose with ulceration in the vesti-

bule which was found partially occluded with accumulated sanious crusts.

The lymphatics from the anterior half of the nasal cavity follow the line of the facial veins and run to the glands in the sub-maxillary and sub-lingual regions, while those of the posterior half trace backward to the tonsils and from there they empty into the superior deep carotid group of lymphatics. Hence, the importance of palpating those regions before inspecting the nasal interior.

In seeking the causes of a nasal catarrh, the nasal chambers should always be examined first by way of the mouth and the naso-pharynx by the posterior opening of the nose. The patient bears the retro-pharyngeal examination much better if it is carried out early than if it is done at the end of the inspection. Valuable information is often gained with reference to the case by a careful inspection of the pharynx and naso-pharynx by means of the retro-pharyngeal mirror.

Many people have asked the question, "Why are some people more subject to colds in the head, that is, attacks of acute rhinitis, than others?" One or two members of a family are often contracting colds while the others escape. Some members of an office staff are always falling victims, and others almost never have a cold.

There are two explanations. First, the person's unhealthy habits or unhealthy surroundings or his breathing a damp, musty smelling, foul or dusty atmosphere, air that, owing to insufficient ventilation, has not been removed; and, secondly, abnormal anatomical conditions in the nasal cavity. In my experience and opinion, the latter is the more common and potent as a determining cause of recurrent head colds and nasal catarrh. An individual with a normal nasal interior, breathing an unpure atmosphere, is less liable to become affected than one with a disturbed interior and breathing a purer atmosphere.

To determine the causes of catarrh, therefore, it is imperative to get a good view of the inside of the nose so that departures from the normal may be carefully observed. Although it should be safe to assume that practitioners are generally acquainted with the appearance of the interior of a normal nose, I may say that I have found among practitioners a remarkable deficiency in their knowledge on this subject. A description of a normal inferior turbinal is seldom correctly given. A mental picture of the appearance of a normal tympanic membrane, larynx or retina is usually acquired and retained and can be readily given, but that of a normal nose rarely. The inferior turbinal may be taken as the criterion of a healthy nose and may be used as a correct standard to go by in the study of departures from the normal.

The two entrances to the nose should be symmetrical and sufficiently patent to allow free ingress of air on both sides. This is of the greatest consequence, since any obstruction at the entrance to the passages, such as collapse of the alar cartilages or dislocation of the columnar cartilages into the entrance, by lessening the volume of the air current, directly leads to congestion and ac-

cumulation of discharges, consequently causing nasal catarrh. If these seemingly simple and visible defects are not remedied, it avails but little to perform some skillful operation on the nasal interior for the removal of nasal catarrh as it will invariably be a failure.

The nasal septum should be straight, but it seldom is, although slight departures from the normal arc of little consequence as a reason for nasal catarrh.

The inferior turbinals are easily visible in tilting the tip of the nose with the thumb. They are rosy, red, rotund, resilient and moist, and a free passage can be seen between their most prominent parts and the septum. The common departures from the normal, as seen best in these turbinals, consist either in accumulations or the contrary of these healthy conditions.

In chronic rhinitis the inferior turbinals are too rosy red, too rotund, too resilient, and secrete too much mucous discharge, and the nasal passages are diminished and partially blocked, especially on lying down. In hypertrophic rhinitis the turbinals are enlarged but more firm in their consistency, less red and resilient, but still they over-secrete.

In atrophic rhinitis, the turbinals are non-existent of very small and usually covered with septic crusts.

The middle turbinal in the normal nose is usually easily to be seen on tilting the head a little backwards and is found to be rosy, red, uniform, smooth and moist. The floor of the nose can be readily inspected from the front and is seen to be straight and concaved, and should not contain any discharge. Sometimes the lower half of the nasal cavity is normal, but the upper half in the region of the middle turbinal is abnormal and keeps up a catarrh.

Mucous polypi are one of the most common causes of a persistent nasal catarrh. They are at first very small and nearly always spring from the region of the middle turbinals and hang free into the middle meatus. They also often start on the lips of the hiatus semi-lunaris on the outer wall where the mucous membrane is rather loose and easily becomes congested and oedematous. The discharge is of a watery character and until the polypi cause blocking of the middle meatus, this may be all that the patient complains of except that they say that changes of weather affect them; dry weather favorably and wet the reverse, as regards the amount of stoppage and discharge.

The discharges that I have been considering have been derived from the general surface of the mucous membrane, but should the discharge be mostly purulent there is a great likelihood that it may come from one or more of the accessory sinuses, and that a thorough examination of these should be made to eliminate any such local infection.

The outflow from the sinuses takes place either anteriorly or posteriorly, and this becomes a common cause of anterior or posterior nasal catarrh. All of the sinuses, the antrum, frontal, sphenoidal and anterior and posterior ethmoid cells are liable to acute and chronic catarrh. The acute inflammation is the most usual forerunner of the chronic.

In acute antral and frontal sinus sepsis there is a more or less profuse yellow purulent discharge from the nose anteriorly with pain in the cheek and eye, and a throbbing, full, aching and more or less bursting sensation of varying severity. Should the frontal sinus be so affected, these painful feelings will be felt mostly over the forehead, in the orbit and at the inner canthus, and the discharge will be lasting for longer periods throughout the day, as distinguished from that from the maxillary antrum, where it is a morning discharge, generally clearing off as the day advances.

In acute frontal sinus sepsis there is often swelling, usually over the inner canthus and extending outwards over the eye and forehead, whereas, in acute maxillary antritis, the swelling appears below the outer canthus and advances inwards.

The presence of pain and throbbing in the neighborhood of a sinus, therefore, with associated discharge from the nose, ought always to be given strict attention and demands urgent treatment so as to avoid the case drifting into the chronic category.

Acute catarrh of the posterior ethmoid cells and sphenoidal sinus usually are accompanied with deep-seated throbbing headaches and more or less yellow discharge down the back of the pharynx, producing retro-pharyngeal catarrh.

Nasal catarrh, generally with a fetor and a thick yellow discharge, is what nearly all patients suffering from chronic antral disease complain about. On examination pus is seen on the floor of the nose and can generally also be detected running over the inferior turbinals and under the middle turbinals. If this discharge is wiped away and the patient's head lowered and inclined to the opposite side for ten minutes so that the affected antrum is uppermost, on raising the head and examining again, pus is usually to be found again in these positions.

Transillumination will show the maxillary antrum to be dark on the side involved, and if the inner wall of the antrum be punctured with a small trocar and cannula, pus can be blown and washed out which, of course, is proof positive of septic antritis.

Chronic frontal sinusitis manifests itself also by catarrh. The discharge is more or less a continuous one, going on throughout the day and will not, as in the case of the antrum, appear chiefly in the morning. If the nasal cavity be examined the discharge will be found in the anterior and upper parts of the nose, coming down outside the middle turbinals and tracking over the inferior downwards to the floor. If these fluids are wiped away and the posterior half of the middle meatus packed with cotton wool so as to shut off the ostium leading to the maxillary antrum, the discharges will be observed to accumulate again without displacing the cotton.

Should the catarrh flow backwards, constituting a post-nasal catarrh, the posterior groups of accessory cells are often involved in disease, and the pus can be seen on the posterior pharyngeal wall, and by means of the retro-pharyngeal mirror can be traced flowing over the posterior ends of the middle and inferior turbinals.

In nasal catarrh should the discharge be sanious, it might be due to the simplest of causes, such as a foreign body in the inferior meatus, especially if unilateral and in a child.

In an adult there might be present a small ulcer at the seat of election for epistaxis, at the junction of the skin with mucous membrane.

Blood in the discharge, however, if unilateral and in an adult, especially if accompanied with progressive nasal obstruction, might be due to malignant disease and be of serious import.

TREATMENT

The treatment of nasal catarrh obviously depends upon the cause. It is therefore imperative to ascertain its source.

There are common rules which apply to the treatment of all nasal discharges, and they should be on no account overlooked.

It seems to be almost instinctive in the medical mind to start the treatment of nasal discharges by ordering syringes, and I am particularly desirous of giving warnings against the danger of such measures. Never for any reason should a large or powerful syringe be employed for the purpose of syringing the nose. I have seen many disastrous consequences follow such treatment, and I want to add a word of caution against the employment of the syphon syringe, which in my experience is equally reprehensible, the discharge being likely to be driven back into the posterior and upper regions of the nasal cavity and into the naso-pharynx, and so may easily invade the accessory sinuses or the middle ear.

To syringe is simply to fight against Nature's endeavor to get rid of the discharge by the anterior route. It is surprising how little clearance of mucous and muco-pus takes place on even forcible syringing. If mucous or muco-pus is allowed to become somewhat dry, as it does in the nose, it is almost impossible to wash it away by syringing, thus emphasizing the futility of trying to clean nasal passages in this way.

I would condemn all syringing of the nose; the utmost that should be done, being to use a coarse spray containing a warm alkaline solution which may be sniffed up frequently as the spraying is being carried out.

A sniffing nasal douche may be used or a warm soothing alkaline lotion might be sniffed into the nostrils from the palm of the hand with safety and advantage. Nothing more forcible than a gentle sniff of such liquid into the nose is warrantable.

When the desire is only to clean and moisten the nasal passages, the following prescription makes one of the best lotions:

| | |
|---------------------|-----------|
| Rx. Sodium Chloride | Gr. XXXXV |
| Sodium Salicylate | " XXXXV |
| Sodium Borate | " LXXXX |
| Potassium Chlorate | " LXXXX |
| Glycerine | Drachm |
| Water | 6 Oz. |

Directions: Two teaspoonfuls added to one ounce of warm water and used to spray or sniff up nostrils occasionally.

CHAIRMAN'S ADDRESS.*

ADVANCE IN BUSINESS METHODS.

By P. A. JORDAN, M. D., Eye and Ear Sec., San Jose.

Thirteen months have rolled by since last we met in these beautiful grounds. I have keenly felt the honor of being chosen your chairman for the past year, and my secretary and myself wish to express our thanks for your loyal support.

The program about to be enjoyed speaks both for our work in arranging it, and your excellent thought in producing it.

We are living in an age of greatly advanced medicine and surgery, and have a greater responsibility imposed upon us. Instead of treating disease by the old puttering methods we at once attempt to remove the infective foci which so often causes the malady which we are asked to cure.

We formerly treated long and patiently cases of iritis without thinking of, or discovering carious teeth or infected tonsils or luetic blood which was causing the trouble. Today iritis immediately makes us think of an infected focus which, when remedied, allows the diseased iris to at once clear up. Cataracts were removed in the presence of carious teeth, which act now would be considered little less than criminal. Catarrhal conditions were treated with pink sprays and costly atomizers, whereas now a sub-mucous resection or suitable turbinotomies relieves the catarrhal condition at once.

Chronic otitis media, we believe, will be much less in the growing generation of children than formerly, due to the growing custom of the careful enucleation of tonsils and adenoids.

The great advance in the science of our specialty has caused a tendency on the part of many of our fellows to attempt an improvement in the business methods of their own respective offices. There is no more excuse for lax business methods in our offices than there is excuse for poorly made diagnoses or carelessly administered treatments. Our patients, unfortunately, have been trained in past generations to consider the doctor as a man having no business methods, and this is, unfortunately, largely true.

The speaker would recommend that at the first visit of each patient he be given a most thorough examination which leads as nearly to a diagnosis as possible; that he be inspired with the greatest amount of confidence in his examiner by having explained to him, in terms suitable, the degree of gravity of his trouble. He likes this explanation. He has come to find out something about himself, and he is pleased to have you take time to tell him about it. Then he should be taken to the business desk and asked to make a deposit covering the cost of his first visit, and also be given an explanation of what each succeeding visit may cost; or, if it is an operation needed,—the reasons for same should be carefully explained, and when he asks how much it will cost the answer may at once be given, "We will

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

talk the matter over and see what this should cost you in your present financial condition." He is then told the usual price of such a surgical procedure. He is asked the amount of his income and also of his expense, and the price is arranged so that he can readily afford this expenditure without any financial embarrassment. This makes him an immediate friend of the doctor. He pays for this operation in advance and feels then he has an investment. He is not worried about a bill, the size of which he does not yet know.

This course immediately eliminates the professional dead-beat. Having eliminated the man who plans not to pay, the physician has saved his time, strength and the cash outlay which this causes. This careful business planning does not replace or decrease professional zeal, but on the contrary increases the same. It allows more time for the care of worthy patients, more time for study, recreation and post graduate courses, and incidentally affords more financial remuneration for such pursuits. It does not pauperize any one; it places medical care within the financial reach of all, because no patient need go away because he is poor. His financial condition is discussed openly and freely with him at the first sitting, and instead of his being frightened away by a cold statement that he will have to pay a large amount, he is made to feel that the physician is interested in him to such an extent that he will do for him entirely careful scientific work for as small a fee as the patient feels is just.

Cash should always accompany the work with the same promptness as each individual patient pays his rent, food and store bills. This plan affords a daily cash income to the office and does away with almost all monthly bills, and has, in my experience, practically eliminated the use of the collector. It has removed from my office the professional dead-beat who, in former years, came in flocks, and at the same time it has made no enemies, but has made many warmer friendships.

I wish here to refer to a criticism in the February 1920 California State Medical Journal. Permit me to read a portion of this article:

"To the Editor:

An article appears in your issue of January, 1920, that seems to me to present a wrong point of view regarding the attitude of the physician toward his work; and while this point of view may appeal to a few members of the profession, I can not believe that it does to the great majority. The fault with the article is that it *assumes the primary object of the physician to be the accumulation of money, and that his dealings with patients should be conducted always with this object in view.* But on the contrary, from time immemorial, medicine has been considered one of the great callings or professions, into which men enter because actuated by motives higher than those that prompt the adoption of a mercantile pursuit. It has been handed down by our fathers in medicine and it is as true today as it ever was, that the first and highest motive of the physician is service; that his constant

desire, inspiring all his daily work, must be the relief of suffering and distress, as he has been trained to do; and to do it for the sake of doing it, not for what it will bring him in dollars and cents. To be sure, he expects and must have a fair return for his service; but he must not make this his first thought or he lowers a great profession to the level of a sordid business."

It is this criticism which has inspired my address on this subject today. It entirely misstates my view on this subject, and I vigorously resent the implication that the physician's first thought, in dealing with his patients, is primarily for financial gain; but I as earnestly assert that all physicians I have ever known fully expect a fair remuneration for their services, sufficient to afford a comfortable livelihood, and with the hope of saving enough funds during the harvest time of life to provide for a warm hearth when life's winter snows begin to fall. It is my belief that 90% or more of all men and women entering the medical schools have taken up the work with the hope of making a living, in view. If this last statement be true, why should we hesitate to put our offices in order, treat our patients in a business-like way and collect from them what they honorably and honestly should pay for services rendered? Why procrastinate in presenting our claims?

The author of this criticism quotes our Savior, and says "Man does not live by bread alone." Our Savior also said, "The servant is worthy of his hire," and I am sure that he wishes us to do our work in a tidy manner.

Your speaker possesses high ideals in the pursuit of his profession. He will gladly compare his free charity work among patients and will also compare his cash charity gifts with those of the critic above mentioned. He loves his work for the work's sake; for the good he is able to do patients, both rich and poor, and he has found by experience of the last few years that treating all classes of patients in a deserving business-like manner has incidentally been profitable in this world's goods.

I hope to see in the near future a chair of instruction along business lines installed in each medical school in our country.

Book Reviews

Diseases of the Intestines and Lower Alimentary Tract. By Anthony Bassler. 660 pages. Illustrated. Philadelphia: F. A. Davis Company. 1920. Price, \$7.00.

The author has, with marked attention to detail, written his personal views upon intestinal diseases. He readily quotes the opinions of other writers and in this manner brings the work quite up to date. Yet the author does not hesitate to state clearly when his opinion differs from the other authorities.

A large portion of the volume is devoted to anatomy, physiology and examinations, great detail being given to various laboratory tests, some of which could have been omitted.

A good portion of the book is devoted to Intestinal Toxemia. In fact this subject pervades the whole volume and is used to explain many conditions. The method of bacterial study of the

stool for diagnosis is of interest but far from convincing. The suggested therapy through vaccines, for the intestinal toxemia, seems not above question in view of the recent evidence of the effect of diet on intestinal contents.

Although a great deal of material in this volume is carried over from a former generation, which could be safely omitted, the book is a step in advance, especially as seen in some of the diet lists, and contains facts that are of interest and value to all. The impression is that the new material could have been gathered into a much smaller volume, thus making it more valuable and decidedly less expensive. E. J. B.

Advanced Lessons in Practical Physiology for Students and Practitioners of Medicine. By Russell Burton-Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo of 238 pages with 123 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$4 net.

This volume is really the laboratory companion to Burton-Opitz's text-book of physiology. The primal requisite of any laboratory guide is clarity, and this particular note characterizes the volume throughout.

Without being verbose and over technical, each step in the preparation of an experiment is concisely set forth, and in such a manner as to develop in the student that mental attitude which is essential to the proper observation of facts, and inductive correlation of these facts once they are obtained.

The experiments given to exemplify the fundamental principles of respiration and circulation are particularly well selected, as is also the treatment of physiology of the nervous system.

In format the book is well done. Throughout the volume blank pages are inserted so that the student may annotate for himself and put down such data as he deems desirable. Altogether, it is one of the best laboratory manuals that we know of and should receive a well-merited recognition.

R. A. Y.

Physiology and Biochemistry in Modern Medicine.

By J. J. R. Macleod. 3d ed. 992 pages. Illustrated. St. Louis: C. V. Mosby Company, 1920.

The appearance of the third edition of Macleod's work confirms the already favorable reception, which has been given the book. The growing tendency of medical schools to teach the laboratory courses, with an under-emphasis of the clinical courses, and the lack of proper laboratory training in the older medical schools, has created a definite call—the answer to which is supplied by the author's work.

This volume bridges the chasm between the purely academic sciences, and the practical problems of medicine as found by the practitioner in his every-day work. The newer methods of diagnosis and treatment are continually demanding from the practitioner a well-rounded scientific balance, and it is only by a thorough knowledge of the fundamental principles of biochemistry and physiology that he can justly apply to himself the term "a scientific practitioner." It is by correlating these two factors that the book finds its justification.

Considerable new matter has been added to the third edition, there has been an extensive revision of the section on neurology by Dr. A. C. Redfield. The chapter on respiration is particularly complete and brings the material up to and inclusive of the newer work of Henderson and Haldane. The chapter dealing with the endocrine organs is particularly well written, the experimental evidence is conservatively epitomized, and the gradual drift toward the clinical application of the knowledge thus gleaned is judiciously pointed out. Typographically and structurally, the volume maintains

the high standards that have always been set by Mosby's books. The illustrations are profuse and helpful, the tables, whenever given, are accurately compiled. All in all, the volume is one of the most useful and valuable that a physician can acquire, and no well-balanced working library can afford to be without it.

R. A. Y.

An Epitome of Hydrotherapy, for Physicians, Architects and Nurses. By Simon Baruch, M. D.

LL. D., Consulting Physician to Knickerbocker and Montefiori Hospitals, Consulting Hydrotherapist to Bellevue Hospital, New York City, Formerly Professor of Hydrotherapy, College of Physicians and Surgeons, Columbia University. 12mo of 205 pages, illustrated. Philadelphia and London: 1920. W. B. Saunders Company. Cloth, \$2.00 net.

The prominence of the author on hydrotherapeutic matters brings this volume to the fore as the most up-to-date ready reference manual obtainable. The physician who wishes to prescribe hydriatic treatments finds much usable knowledge. The operator who would give these treatments most efficiently will benefit by careful study of the methods therein described. Persons planning or installing hydrotherapeutic equipment will make fewer blunders in first consulting the chapters on the construction and arrangement of this complex and expensive apparatus. H. L. L.

Correspondence

WE HEARTILY AGREE

January 21, 1921.

To the Editor:

1. We regret the fact that you were unable to accept the article sent to you for publication in the State Journal because, as you inform us, it would take at least a year or more for its publication.

2. It is rather lamentable that those desirous of publishing papers after working on some point of interest that would be of benefit to readers of the Journal should be prevented from doing so because of the extreme limitation of space in the State Journal.

3. Cannot some means be found or devised, such as subscription or the like, to make it possible for the Journal to be at least double its size? This is the only fault that we find with our Journal, which, otherwise, as we know for a fact, is highly considered in the East.

4. Appreciating your attention to this letter and trusting you will take this matter up with the editing committee in order to remedy such a deplorable defect.

Yours very truly,

JAMES EAVES, M.D.

PAUL CAMPICHE, M.D.

560 Sutter Street, San Francisco.

VENEREAL DISEASE CONTROL

Los Angeles, Dec. 21, 1920.

To the Editor:

In your November 1920 issue you have a very excellent article from a scientific technical viewpoint upon, "Status of Venereal Disease Control" (page 399).

There is no question at all about venereal disease being absolutely preventable. Perhaps this question is a good deal like the little doggie braying at the moon; our efforts will be futile, but since we have such excellent prophylactics, why not tell the public about them and use them? After all is said and done, and "Fit to Fight" pictures have been shown and no stone left unturned, the people seem to choose to keep on in the same old way. We can't forget what some of our dear old "Prof's," used to say about the sexual instinct being next to the first great law of Nature, that of "self-preservation," and that

sometimes the former even superseded the latter. Whether married or not, everyone is entitled to protection, and they are certainly getting little or none under the way we are instructing now. We protect ourselves against smallpox, diphtheria, typhoid fever, pneumonia, et al.; why not this? We know how. It would seem that the Army system would be better, so that the "gonococcal count," would "take the lethal count," for good and all time.

Had it not been for your northern part of the state, showing some real honest-to-goodness, devil's intestinal equipment (vulgarly known as "guts"), and some pure 100 per cent. Americanism we would today be living and laboring under the siren song of the "Quack Quartet"; the majority of the "nuts" seems to be down here. Our little standing made-up joke was, "What stands on eight legs and howls like Balaam's Ass?" **The Quack Quartet.**

The only reason in the wide world that we resurrect the quartet which we have so happily buried, is the fact that if any anybody should mention to the "enemy" with what "acme of asininity" we have tackled this venereal question (which is not a question, with proper prophylaxis), we are going to have an addition to the "quartet," and they will ring in the venereal measure and then we will have to fight the "Quack Quintet."

In closing, the writer is under the impression that this venereal question is only a matter of education, but in that education, is there any legitimate reason why people are not instructed to take care of themselves. We use prophylaxis in everything else, why not that? If we, as medical men, think so much of preventive medicine, and would make sound citizens for the next war, or for peace, let us cease being hypocrites, and recognize the fact that people will do it, and tell them how to play safe.

Cordially and sincerely yours,

FRANK A. WOODWARD, M. D.

2488½ W. Pico, Los Angeles, U. S. A.

County Societies

ALAMEDA COUNTY ITEMS

The regular monthly meeting of the Alameda County Society was held at the Health Center Monday evening, December 20th. This was the annual election of officers, and the following were elected to office: President, Dr. Alvin Powell; Vice-President, Dr. Elmer Brinkerhoff; Secretary-Treasurer, Dr. Pauline Nusbaumer.

Upon retiring from the office of president, an interesting address was made by Dr. Clarence Page.

Dr. Dudley Smith, president of the League for the Conservation of Public Health, in token of their high esteem for him personally, and as a mark of their appreciation of his noble efforts for the advancement of public health, was presented with a gold watch bearing an appropriate inscription. Although taken by surprise, Dr. Smith, in his usual happy way, rose to the occasion and again impressed upon his conferees the genuine pleasure he had taken in his past year's work and fired his listeners with new zeal for service that seeks the advancement of the public good.

An interesting scientific program was presented by the Program Committee, consisting of Drs. C. W. Page, Alvin Powell and Pauline Nusbaumer. A paper, "Experimental Studies on the Mechanism of Gall Bladder Infection," was read by Dr. Karl Meyer, professor of Graphical Medicine, University of California. This proved to be one of the most highly instructive and thoroughly scientific papers read before the Society in a long time, and was

received and discussed with the keenest appreciation.

On December 6th, the regular monthly meeting of the staff of Samuel Merritt Hospital was held at the hospital. A valuable paper, "The X-Ray Aspect of Bone Disease," was read by Dr. Lloyd Bryan, of San Francisco. Of an intensely interesting character, this paper was ably discussed by Drs. Siefert and George Rothganger.

Dr. Siefert also reported, in some detail, a somewhat unique case of foreign body in the eye, illustrated by excellent X-Ray plates.

The scientific meeting was followed by refreshments and a social hour of goodfellowship.

On December 10th, the regular monthly meeting of the Visiting and Resident Staffs of the Alameda County Hospital was held at the Health Center. The past month's activities at the hospital were discussed and the routine subjected to a critical analysis. Due to the consistent efforts of the staff in conjunction with Dr. Broderick, the hospital records and other essentials have been brought into conformity with the standards required by the American College of Surgeons.

CONTRA COSTA COUNTY

The annual meeting of the Contra Costa County Society was held in Richmond Wednesday evening, December 29, 1920. A large number of members and visitors were in attendance.

The annual report of the Secretary-Treasurer was read and accepted.

The incumbent officers, President G. M. O'Malley, Vice-President M. L. Fernandez, Secretary-Treasurer C. T. Wetmore, were re-elected for the ensuing year.

The speaker of the evening was Dr. Max Rothschild who imparted to the society some exceedingly interesting information which he had acquired in his recent studies abroad with Moch and Denycke in the treatment of tuberculosis with partial antigens. The subject of immunity was reviewed and an interesting account of how the partigens are manufactured, their clinical use in determining the degree of immunity of an individual and finally by lantern slides illustrating the results of treatment in several different kinds of cases. A general discussion followed.

Before adjourning a luncheon was served.

FRESNO COUNTY

The following officers were elected for the ensuing year: President, J. R. Walker; First Vice-President, J. D. Morgan; Second Vice-President, Carl Matthewson; Secretary, A. D. Ellsworth; Assistant Secretary, G. L. Long; Treasurer, Union National Bank. To the Board of Governors (including holdovers)—Drs. Willson, Trowbridge, McConnell, Cooley, Miller. Delegates to the State Society meeting (including one holdover)—Drs. Rosson, Craycroft, Ransome, Schottstaedt, Cross, J. R. Walker. Alternates—Drs. Anderson, Hare, Collins, Luckie, Willson and Madden. Dr. G. L. Long was appointed associate editor. Routine business was transacted.

LOS ANGELES COUNTY

Los Angeles County Medical Association Meeting

The regular scientific meeting of the Society took place December 2, 1920, at 8 p. m. in the Friday Morning Club House.

Dr. Rae Smith called the meeting to order.

Dr. Thomas C. Myers moved the adoption of resolutions anent the amendments to the by-laws, which would prevent members of the panel of the State Insurance Fund from being members of the Los Angeles County Medical Society. The resolutions were overwhelmingly defeated. Hon. John P. Carter, collector of internal revenue for this

district, then addressed the Society in regard to narcotic addict clinics.

The last annual monthly meeting of the L. A. County Medical Association at the Friday Morning Club Rooms, 8 P. M., December 16th.

Dr. Rae Smith, the president, presided. Dr. Mattison read the report of the Milk Commission, mentioning the Arden, Adohr, and the Cold Spring Dairies as the only ones certified.

The address of the retiring president, Dr. Rae Smith, gave a résumé of last year's work, organized medicine, the help of the secretary, the nurses' directory, and other topics of interest. Dr. Harlan Shoemaker, the secretary-treasurer, gave an exhaustive report upon work. The auditing, advertising, the Bulletin, fees, rebates, expenses of printing, rent, etc., the programs, the telephone exchange, the library and permanent quarters were other subjects of his report.

Dr. William Wenzlick read the report of the Ethical Committee, the committee on Necrology and of the County Editor as associate of the State Journal of Medicine.

Dr. William Duffield reported the work of the Campaign Committee.

Dr. Browning read a report on Health Insurance and thought the profession should be interested, although the majority are opposed to it as a state function and that in California an amendment to the State Constitution would be necessary to enact such a measure.

Dr. Norton, on Outpatient Departments, reported and stated among other things that the amount of work done was almost beyond belief, and that a debt of gratitude is due to the Council.

Dr. McNeile, of the Board of Tellers, announced the result of the election.

Dr. McArthur escorted Dr. Walter V. Brem, the newly-elected president, to the chair.

Dr. Brem remarked that he appreciated the honor and the gracious letters from his colleagues and that there was no competition for the office, that we want to be more friendly and are glad to see other members honored. He expressed himself as feeling humble in accepting this position because it brings with it great responsibilities. Early in the summer it was by accident that he began to make political speeches and would have hesitated had he known what would come. He had made forty speeches during the campaign and he felt there was an inspiration although at first a dread. A great conflict is still before the profession. The profession must be solidified for this purpose. Education always lags behind advancing science. Half of our institutions were diploma factories turning out men not well versed, and we have still many with us though some have improved themselves. Now the requirements are two years' more of college work before students are admitted. Medical education is now within hailing distance of medical knowledge. There is more education necessary than in any other profession. Ours is not a school of medicine. Preventive medicine is the watchword. Curative medicine has saved thousands but preventive medicine has saved hundreds of thousands. It is a great profession for the control of disease; it is not a school. Dr. Shoemaker has emphasized a permanent building. It will add dignity to the profession. The committee on public health should have its function enlarged. The Chamber of Commerce has no committee on Public Health. There should be a committee to study industrial accident insurance, and there are many other subjects, but remember that we are under obligation to continue public health work because we have knowledge others have not. Having taken this stand we must go into it heart and soul and place on a higher plane the health officers and the Board of Health in order to raise the health of the community.

Dr. McArthur moved a vote of thanks to the retiring president, Dr. Rae Smith, which was unanimously carried.

The president called for the report of Dr. Powers' committee on narcotic clinics which was presented by Dr. Barrow.

District Attorney Woolwine Versus Eddyites

District Attorney Thomas Lee Woolwine wrote a letter to Dr. Rae Smith, the president of the Los Angeles County Medical Association, in which he asked the aid of the society in the enforcement of the statutes which provide that in case of any death occurring without medical attendance such death shall be referred to the coroner for his investigation and for the purpose of holding an inquest to ascertain the cause of death. It is unlawful for a physician to sign a death certificate unless he is in fact the actual attending physician and not merely a signer for accommodation. He, therefore, requests all members promptly to report to the District Attorney every violation of the law.

City Health Commissioner L. M. Powers was also asked by the District Attorney to co-operate in this matter, and so was Coroner Williams.

December 8, 1920, in a letter by the Council of the Los Angeles County Medical Association, it was resolved that the Council recognized these serious conditions to exist, and expressed its desire to co-operate with the District Attorney Woolwine.

Personals

Dr. Albert Soiland and wife left for the East December 8 to attend meetings of medical societies in Chicago and Kansas City. Dr. Soiland was elected president of the Radiological Society of North America in Chicago, December 17, 1920.

Dr. Norman Bridge was elected president of the Camp Fire Club of Los Angeles and Hunters Fraternity Camp which held its first annual banquet and election of officers at the Los Angeles Athletic Club. Dr. Edward D. Jones was elected first vice-president and acted as master of ceremonies and told about the purpose of the society, i. e., to foster and protect wild life, national forests, game and fish, to co-operate with museums, universities and scientific bodies interested in outdoor life.

Dr. Lulu Hunt Peters, formerly Chairman of the L. A. Public Health Service, returned December 25 from Albania where she labored with the Red Cross. She is now ready to join the drive of the European Children Relief Committee, and will offer her services to Mr. Hoover. Dr. Peters received the Skandenberg decoration from the Albanian government, and the St. Sava decoration from the Serbian state.

Sanitarium Zone Law

The Health and Sanitarium Committee of the City Council recommended the adoption of the ordinance establishing a zone in which all hospitals, asylums, sanitariums, home retreats or other places for the care and treatment of insane persons and persons of unsound mind or suffering from mental or nervous disease may be maintained. The Zone is to take in the territory between Figueroa street and Central avenue and Alameda street, Pico street and the Los Angeles river; also the area including the County Hospital and the Elysian Park district. This ordinance was adopted the following day. The idea is to keep these institutions out of the residence district.

Hospitals for Cripples

Ground was broken December 16 for the Orthopedic Hospital-School in Brockman Court extending from Hope to Flower streets, from Twenty-third to near West Adams street. The site was donated by John Brockman. Mrs. Anita Baldwin has contributed \$50,000. Dr. C. L. Lowman started with four patients, there are now 655.

\$10,000 Present for Barlow Sanitarium

The Optimist Club raised \$10,000 which was presented to the Barlow Sanitarium for tubercu-

losis December 30, during an evening of "high jinks." This money is intended for a library building to be known as the "Optimists' Library Building."

Los Angeles County Hospital

December 1, 1920

Announcing the Opening of the Olive View Sanitarium for Tuberculosis

This new institution, which is being operated as a ward of this hospital, is now receiving as patients those adults having definite tuberculosis who are ambulant and who are in the early stages of the disease or who are in a condition that is considered favorable for early arrestment. It is expected that children will be admitted as soon as suitable accommodation can be provided. From the social standpoint its patients are those who are unable to pay for private sanitarium treatment and who are citizens of the United States and who have resided in Los Angeles County for one year immediately preceding application for admission. Advanced cases among indigents are cared for at this hospital as heretofore.

It is requested that every prospective patient for Olive View Sanitarium be given a letter addressed to the Superintendent, Los Angeles County Hospital, giving a concise account of the case to be presented in person at the Examining Room of the Hospital at 1100 Mission Road, at 9 a. m., on Mondays or Thursdays. At that time the necessary preliminary medical and social investigation will be started, and when completed, arrangements will be made for admission to Olive View if the applicant is found eligible.

By way of information it may be noted that the sanitarium is located four miles north of San Fernando among the foothills north of Sylmar at an altitude of 1500 feet. The buildings and equipment are new and first class in every particular and there are accommodations for one hundred patients who will be under the supervision of nurses and physicians especially trained in tuberculosis work. Dr. A. O. Sanders is the superintendent of the sanitarium.

While visitors to the institution are always welcome, it has been considered advisable in the interest of the patients themselves to ask those who wish to visit the patients to come only on Sundays and Wednesdays from three to five.

Mexican Drug Stores

J. P. Bustamante, a Mexican merchant, president of the Guadalupe Drug Company, incorporated recently, will establish a chain of drug stores in every city of Southern California. One store is located at 140 N. Main street; others will be established in San Bernardino, San Diego, El Centro, Pomona, etc., possibly also San Francisco. These stores will cater almost exclusively to the 100,000 Mexicans of Southern California.

SACRAMENTO COUNTY

The annual business meeting of the Sacramento Society for Medical Improvement was held at the Sacramento Hotel, December 22. Dr. George Briggs presided in the absence of Dr. Beattie.

The old constitution, under which the society had operated for many years, was changed in some minor respects to conform particularly to the new method of management of the Sacramento County Hospital, and the training of nurses in this section.

A committee of five to control these matters, with power to appoint a staff at the hospital and attend to the medical management, was elected by the society and consists of Drs. Briggs, Cox, Parkinson, Simmons, and Snyder, who will serve from one to five years. The new Board of Directors of the Medical Society consists of the

following: Drs. Bramhall, Drysdale, Pearson, Rulison, and Turner. Delegates elected to the State Society are Drs. Cox, Foster, and James, with Drs. Cameron, Henderson and Jones as alternates.

The Society in the last year has gained ten new members by application and two by transfer, with one death; that of Dr. Kellogg. Total membership in the society now numbers eighty-nine. Dr. Wallace R. Briggs was admitted to membership at this meeting.

A committee was appointed to draft resolutions on the death of Dr. Andrew W. Hoisholt. The executive committee for the County Hospital was instructed to operate the hospital under the requirements advocated by the American College of Surgeons for an accredited hospital.

SAN DIEGO COUNTY

At its annual election in December the San Diego Medical Society elected the following officers for 1921: President, J. Perry Lewis, M. D.; Vice-President, M. C. Harding, M. D.; Secretary, George Worthington, M. D.; Treasurer, Martha Welpton, M. D.

The new council consists of Dr. Harding, chairman; Drs. Lewis, Worthington, Pickard, Hosmer, Wessels, Crabtree, Kinney and Churchill.

The Membership Committee—Dr. E. H. Crabtree, chairman; Dr. J. C. E. Neilson, and H. T. Woodward.

Program Committee—Dr. L. C. Kinney, chairman; Drs. C. M. Fox, J. F. Churchill.

Bulletin Committee—Dr. Robt. Pollock, Director-in-Chief, and to name his own staff.

Hospital Committee—Dr. T. F. Weir and T. C. Little.

Child Welfare—Dr. Marjorie Potter, chairman; Drs. Martha Welpton, I. D. Webster, A. E. Banks and C. W. Brown.

Medico-Legal Committee—Dr. W. W. Crawford, chairman; Drs. E. M. Fly and V. G. Clark.

At the annual meeting of the San Diego Medical Library Association, the following were elected for 1921: President, Dr. Robt. Pollock; Vice-President, Dr. H. P. Newman; Secretary, Dr. C. L. Stealey; Treasurer, Dr. H. N. Jackson. Directors—Drs. P. M. Carrington, Robert Pollock, O. G. Wicherski, R. J. Pickard, H. P. Newman, T. C. Little, H. A. Thompson, J. Weinberger, C. M. Fox, M. C. Harding, J. F. Churchill, Martha Welpton.

At the annual dinner of the Medical Society recently held at the San Diego Hotel, the guests of honor were Dr. and Mrs. Apple of El Centro, and Dr. Dudley Fulton of Los Angeles. Dr. Apple as its president represented Imperial Valley Medical Society carrying greetings to the San Diego Society and with a few felicitous remarks expressed himself as favoring frequent interchange between the adjacent counties. Dr. Fulton gave a delightful informal and thoroughly practical talk upon the functional derangements of the kidney, which brought forth quite a free discussion from those present.

In accordance with the hospital standardization the ethical physicians of San Diego recently met in the auditorium at St. Joseph's Hospital on the invitation of the Sisters, and organized themselves into a staff by the election of the following officers: President, Dr. B. J. O'Neill; Vice-President, M. C. Harding; Secretary, Dr. T. F. Weir, and an executive committee consisting of Drs. R. J. Pockard, Thos. O. Burger, C. E. Rees, H. A. Thompson.

The president, Dr. O'Neill, and the four members of the executive committee above mentioned constitute an executive body of five who will formulate rules and by-laws governing the medical staff of the hospital.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY

During the month of December, 1920, the following meetings were held:

Tuesday, December 7—Committee on Child Welfare
Informal papers and discussions. Organization of Committee.
of Committees.

Tuesday, December 14—Annual Meeting

1. Address of President.
2. Reports of Secretary, Librarian and Committees.
3. Election of Officers, Board of Directors, Delegates and Alternates.
4. Roentgen examination of the chest. W. E. Chamberlain.
5. The chemotherapeutic approach to the tuberculous process. E. L. Walker.
6. The partial antigens of Much-Deycke, their diagnostic and therapeutic value in tuberculosis. Max Rothschild.
7. Some aspects of the immunity problem in tuberculosis. K. F. Meyer.

Tuesday, December 21—Committee on Industrial Medicine

1. Relation of the Industrial Accident Commission to the medical profession. A. J. Pillsbury, Industrial Accident Commission.
2. Treatment of head injuries. C. L. Tranter.
3. The difficulties of X-Ray diagnosis of head injuries. H. E. Ruggles.

SAN JOAQUIN COUNTY

The annual meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce quarters Friday evening, December 10th, President C. F. English presiding. Those present were: Drs. C. F. English, J. S. Cochrane, W. P. Lynch, L. Dozier, N. Barbour, F. S. Marnell, Grace McCoskey, N. E. Williamson, C. D. Holliger, A. H. McLeish, R. T. McGurk, J. P. Martin, D. R. Powell, Dr. Hull of Stockton, Dr. Beck of Gridley and Dr. N. T. Enloe of Chico as guests.

The minutes of the previous meeting were read and approved. The following members were elected to serve as Board of Directors for 1921: Drs. J. D. Dameron, L. Dozier, C. F. English, C. D. Holliger, L. R. Johnson, R. T. McGurk, B. J. Powell, D. R. Powell, Hudson Smythe, and the officers chosen were: President, Dr. L. R. Johnson; First Vice-President, Dr. L. Dozier; Second Vice-President, Dr. C. D. Holliger; Secretary and Treasurer, Dr. D. R. Powell.

The speaker of the evening was Dr. N. T. Enloe of Chico who told of his method of immobilizing fractures in plaster paris some days prior to operating through a window in the cast. By this method he is enabled to use less foreign material in fixation of the fragment ends and his results have been highly satisfactory. After a general discussion in which Dr. Enloe answered numerous questions, the meeting adjourned.

SANTA CLARA COUNTY

At the regular annual meeting held for the purpose of electing officers, the following were chosen for the ensuing year: President, Raymond Wayland, San Jose; First Vice-President, Bert Loehr, San Jose; Second Vice-President, George Hall, Sunnyvale; Third Vice-President, Louis Boonshaft, Los Gatos; Secretary, J. L. Pritchard (re-elected), San Jose; Treasurer, H. C. Brown, San Jose. Councillors—T. L. Blanchard, C. W. Delaney, Albert Jayett, all of San Jose. Delegates—A. E. Osborne, Charles Richards, P. A. Jordan. Alternates—Raymond Wayland, T. L. Blanchard, and C. W. Delaney.

TWENTY-NINTH ANNUAL MEETING OF THE NORTHERN DISTRICT MEDICAL SOCIETY

The twenty-ninth annual meeting of the Northern District Medical Society was called to order November 16, 1920, at 11 a. m., at Hotel Sacramento, by Dr. Barnard, president.

Dr. J. W. James reviewed late work on the uterus showing the anatomy to be spiral muscles originating in the round ligaments and that the cervix was anatomically different from the uterus, calling the cervix the "Tonsil of the Pelvis." Dr. James criticized cautery, the usual applications, and surgery except complete removal of the mucous membranes. He recommended drainage by hot salt solution and the use of mercurochrome and radium. Discussion was general.

Dr. W. J. Hanna gave a history of vaccination and of the present crisis of smallpox. He advocated free vaccination and the forced vaccination from the Secretary to a Board of Councillors; of quarantine. The paper brought much discussion; the older army men giving their experiences, but none could agree with Dr. Hanna's radical proposal of abolishment of quarantine.

Mr. Hartley F. Peart, general counsel to the State Medical Society, explained the aims and hopes of the State Medical Defense fund. The speaker gave a short history of the Medical Defense emphasizing the change of the control from the Secretary to a Board of Councillors; also stating that one private company had collected \$35,000 in premiums in California in 1919. Mr. Peart assured all of a whole-hearted co-operation. Dr. Enloe spoke very highly of support given him by Mr. Peart in law suits, and Dr. Dameron stated that during the last few months he had changed from an active opponent to a supporter as he also had been so courteously treated and supported.

Dr. George J. Hall's paper reviewed the history of perineorrhaphy and discussed fully the later methods. On account of the shortening time discussion was omitted.

Dr. Leo Eloesser's paper on operative procedures on the lungs was illustrated by plates and by specimens from cases from his own clinic. As expected Dr. Eloesser's paper was not only thorough and excellent but was inspiring by the results in apparently hopeless conditions. His surgical fearlessness was as usual very modestly subordinated. The paper among other things called attention to lung abscesses of the upper lobes following tonsillectomy, and also to the advisability of doing two operations in central abscesses in case the pleura is free in order to save a hemothorax. Dr. Gundrum in discussion emphasized some of the excellent points of the paper.

Dr. G. Wilson gave a full exposition on bone syphilis and its differential diagnosis and showed a series of plates of a case in its various stages of same and Dr. Gundrum reported that he had seen the case in question and has diagnosed a tubercular hip.

Dr. N. T. Enloe reported his very original method of first applying a cast in all fractures and later doing an operation through a window in the cast. Photographs thrown on the screen illustrated the procedure. Dr. Dameron in discussion gave the thanks of the members for the showing of an original method.

A short business meeting followed, including the election of the following officers:

President, Dr. L. Dozier; First Vice-President, Dr. N. T. Enloe; Second Vice-President, Dr. J. O. Chiarella; Third Vice-President, Dr. J. D. Dameron; Secretary, Dr. J. Snyder; Treasurer, Dr. O. Stansbury. Board of Directors—Dr. J. Parkinson, Dr. Schoff, Dr. J. Dameron, Dr. G. J. Hall and Dr. F. Moulton.

New members elected: Dr. F. S. Marnell,

Stockton State Hospital; Dr. W. H. Pope, Sacramento; Dr. Yates, Sacramento; Dr. N. Williamson, Stockton State Hospital.

Clinical Department

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. 2, March 14, 1916. Female. Spanish. Age 14 years. No. 10989. C. P.

Complaint—Hematuria.

Family History—Father died ten years previously of tuberculosis. Mother was working, her general condition was not good. She was thin and undernourished. One brother was well; four other brothers had died during infancy of causes which could not be definitely determined.

Past History—Patient had been full term, normal delivery infant and had been well until about two years of age when she had a fall, following which she had had frequent epistaxis. From that time she had been subject to frequent attacks of gastro-intestinal disturbances. At 11 years of age hematuria suddenly developed. During the past three years she had had attacks which lasted for periods of a few days or a week. She entered the hospital during an acute attack of hematuria which had lasted two weeks. Her catamenia had not begun.

Physical Examination—Showed a tall, thin, very anemic girl of 14 years. Skin was rather dry and hard and suggested ichthyosis (probably due to marked water loss from hemorrhages). She had numerous carious teeth. Tonsils were very cryptic and there was marked evidence in her lungs of glandular enlargement with definite signs at the right apex. There was also a moderate degree of adenopathy of all the small lymph nodes. The lower pole of the right kidney could be felt. The liver was slightly enlarged. Wassermann test was negative. Von Pirquet reaction gave a very definite reddened, slightly herpetic area 3x4 cm. In her urine tubercle bacilli were demonstrated and guinea pig inoculations were positive. There were no organisms grown on ordinary culture media. Phenolsulphonephthalein was found repeatedly as low as 10 per cent. in the first hour and 20 per cent. in the second hour and the appearance of the dye in the urine extended over a period of 72 to 96 hours. The urine constantly contained large quantities of pus together with blood. Cystoscopy revealed an inflamed granular mucosa indicative of old ulceration and the ureteral orifices could not be detected. The blood picture varied but little during the observation period of a month. It ranged between 45 and 50 per cent. hemoglobin. Red blood cells numbered from 3,500,000 to 4,000,000; white count from 11,000 to 15,500. The differential count showed marked increase in the neutrophils which ranged from 56 to 78 per cent.; the lymphocytes ranged from 14 to 30 per cent., the large mononuclears and transitionals from 6.5 to 13 per cent. and eosinophiles from .5 to 3 per cent. Her temperature range was from 37 to 39° C. and usually oscillated between 38° C. and 39° C.

Diagnosis—Tuberculosis of the glandular system with involvement of the right apex.

Tuberculosis of the kidney and bladder.

Chronic tonsillitis and dental caries.

Typical secondary anemia due to tuberculosis and chronic hemorrhage.

Treatment—In a case such as this of generalized tuberculosis with involvement of the kidney, the

problem always arises as to whether the kidney should be removed. This the mother refused to have done so that the only treatment remaining was that of clearing up her points of focal infection, removal of her tonsils and caring for her dental caries, all of which was done while she was in the hospital. The remaining treatment was that for generalized tuberculosis: complete rest in bed and a high calory diet, calories being mainly obtained by fats and carbohydrates as it would not have been advisable to put her on a high protein diet because of her kidney condition. The treatment recommended when she left the hospital was to move to the country and to have outdoor sanitarium treatment for her tuberculosis.

Prognosis—In such a case where there has been a long standing tuberculous infection with a kidney involvement and subacute involvement of the lungs, it is problematical whether she would recover.

Discussion—This case is interesting not only from the standpoint of tuberculosis but also because of her general nutritional condition. This depends a great deal on diet and hygiene, which might be counted on to raise her general resistance but there is also the problem of the marked secondary anemia. Whipple has shown that in anemia following repeated hemorrhages, which have continued for a long period, that the blood-forming organs only respond very slowly to dietetic treatment. The blood-forming organs constantly strike a lower level of blood production from which it is difficult to raise them. Unless the tuberculous process can be checked there is little hope of the dietary of hygienic treatment affecting her general nutrition as her hemorrhages will undoubtedly continue, which in itself acts in a vicious circle on her blood-forming tissues as a whole.

We feel that too little attention has been given to the part that the blood-forming organs play in such chronic infections as tuberculosis and syphilis.

Notices

STATE TAX

If you don't pay your State Tax of \$2 to the Board of Medical Examiners your license to practice medicine in the State is automatically revoked. If you are not licensed to practice medicine, you cannot be a member of the Medical Society in good standing, and we will not protect you if you are sued for damages.

THE AMERICAN CONGRESS ON INTERNAL MEDICINE

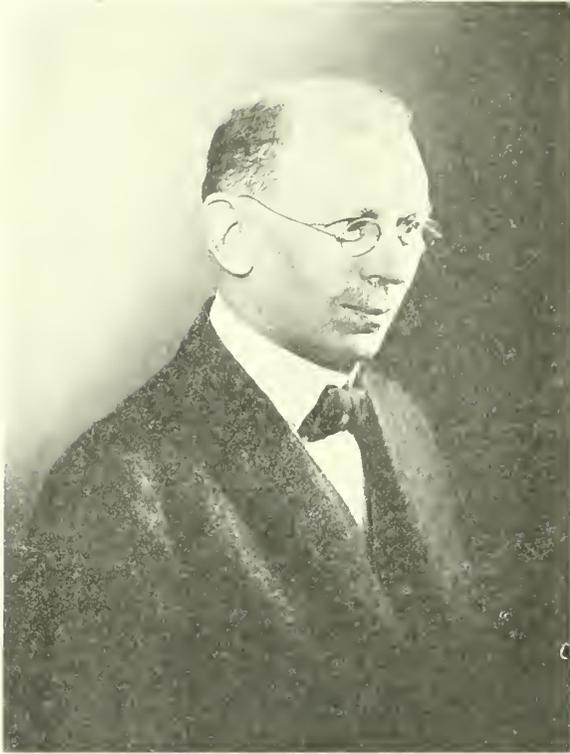
The Fifth Annual Session of The American Congress on Internal Medicine will be held at Baltimore, Md., week of February 21-26, 1921.

The activities of The Congress will be largely clinical. Ward-walks, Laboratory Demonstrations and Group or Amphitheater Clinics will be conducted daily by members of the medical Faculties of The Johns Hopkins and The Maryland Universities.

STATE MEETING

Make your reservations at once direct with Hotel Coronado for meeting of State Medical Society, May 10, 11, 12.

Obituary



ANDREW W. HOISHOLT, M. D.,
San Francisco and Napa

A great loss was sustained by the medical profession of California by the death on December 17, 1920, of Dr. A. W. Hoisholt. Dr. Hoisholt was born in Copenhagen 62 years ago, but came here with his family as a boy and has received his education and has done his work in California. He graduated from Cooper Medical College in 1882 and then went to Europe and took a degree in the University of Heidelberg in 1889. He returned to California to take a place on the staff of Stockton State hospital, which he filled for many years. He left Stockton in 1912 to become superintendent of Napa State Hospital, and this position he held at the time of his death.

Dr. Hoisholt takes rank as the foremost psychiatrist who has been developed on the Pacific Coast. While a member of the staff at Stockton he became known for his scientific and progressive outlook on his chosen field and later as superintendent at Napa he made many improvements in the administration and in the plant itself which will long survive him. He introduced a system of case histories at Napa far in advance of those found in most state hospitals and which compares favorably with those found in large clinic hospitals. Because of his insistence that the insane were patients and not culprits his administration was characterized by an extraordinary degree of gentleness and humanity.

He made valuable contributions to the scientific as well as to the administrative side of psychiatry, particularly in the matter of the collection of statistical data of great medical and social interest and more particularly by his translations of foreign writers. His translation of Dr. August Winner's "Psychiatric - Neurologic Examination Methods" was the most recent of these.

In addition to his work as a psychiatrist he has always been an important figure in medical education on the Pacific Coast. While at Stockton he taught physiology at Cooper Medical school and the scientific course he gave, far in advance of anything previously given here, is still remem-

bered by many California doctors. He made two further important contributions to medical education. One of these was his service as professor of psychiatry in Stanford Medical School since its foundation. The other was the establishment, in close co-operation with Dr. Wilbur, of the arrangement whereby internes may spend part of their rotating services in State hospitals. This has resulted in giving each year a group of medical men real experience in and knowledge of psychiatry, a subject concerning which in the past physicians have been lamentably ignorant. This idea will be perpetuated and is being copied in other parts of the country.

His close friends knew Dr. Hoisholt as a man of extraordinary culture and charm. He was a skillful and educated musician. A stringed quartet which he organized at Stockton achieved more than a local reputation and some former members of it are now nationally known. He was a critic and lover of art. His collections of orchids and of coins are among the best known on the coast. He had a thorough botanical knowledge of California plants. His familiarity with English and with Scandinavian literature made him always a delightful conversationalist. The hospitality displayed by him and by Mrs. Hoisholt will be long remembered by those who have enjoyed it.

The passing of such a man as Dr. Hoisholt leaves a gap not easily filled in professional and educational circles in this state, and among his many close friends there remains a sense of distinct personal loss.

H. G. M.

New Members

Dunlap, Albert K., Sacramento; Christman, Paul, Sacramento; Thomas, Bert S., Sacramento; Pope, Wm. H., Sacramento; Gould, A. R., San Francisco; Zaiser, Albert C., Santa Ana; Hagan, Ralph, Los Angeles; Bryan, Eugene H., Loomis; Trimble, Harold G., Weimar; Carter, J. M., Livermore; Kraft, R. W., Oakland; Nutting, Raymond J., Oakland; Brenaman, Joseph T., El Cerrito; Furlong, Robert M., San Francisco; Boris, Herman S., San Francisco; Ottinger, M. R., San Francisco; Barnett, Geo. De F., Palo Alto; Wherry, Curtis A., Oakland; De Witt, J. Wallace, Oakland; McClure, George, Oakland; Baxter, Frank S., Oakland; Stibbens, F. H., Oakland.

Deaths

BLAIR, E. S., of San Bernardino, Calif., was instantly killed while driving his machine, being struck by a train. Graduate from the University of Michigan 1903. Licensed in California 1903.

BOYD, FRANKLIN P.—Died in San Jose, Calif., December 7, 1920. Was a graduate of Rush Medical School and licensed in California 1904.

CHAMLEY, SAMUEL R.—A graduate of Keokuk Medical College 1884. Dropped dead in Los Angeles, October 28, 1920.

CONRAD, ANDREW O.—Died in Glendale, Calif., December 26, 1920. Was a graduate of the California Medical College, California, 1892. Licensed in 1893.

DODDS, JESSIE BROWN.—A graduate of Northwestern University Woman's Medical School 1887. Licensed in California 1912. Died in Escondido, Calif., November 15, 1920.

FREEMAN, R. E.—Died in San Jose, Calif. Was a graduate of the Hahnemann Medical, Philadelphia, Pa., 1886. Licensed in California 1889.

GORDON, J. S.—A graduate of Physicians and Surgeons, Keokuk, Iowa, 1889. Licensed in California 1901. Died in Los Angeles, January 6, 1921, from injuries received in auto accident.

McBEAN, GUTZWILER ANNA M.—A graduate of University of California 1907. Licensed 1907. Died in Los Angeles, November 13, 1920.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Secretary
Editor
Managing Editor

SAXTON POPE, M. D.
ALFRED C. REED, M. D.
CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

Alameda.....Dr. E. Spence Du Puy, Oakland
Butte.....Dr. Edward Baumeister, Chico
Contra Costa.....Dr. P. C. Campbell, Richmond
Fresno.....Dr. G. L. Long, Fresno
Glenn.....Dr. W. H. Walker, Willows
Humboldt.....Dr. L. P. Dorais, Eureka
Imperial.....
Kern.....Dr. C. A. Morris, Bakersfield
Lassen-Plumas.....
Los Angeles.....Dr. Wm. Wenzlick, Los Angeles
Marin.....Dr. W. F. Jones, San Rafael
Mendocino.....Dr. O. H. Beckman, Fort Bragg
Merced.....Dr. Brett Davis, Merced
Monterey.....Dr. T. C. Edwards, Salinas
Napa.....Dr. Robt. Crees, Napa
Orange.....Dr. H. A. Johnston, Anaheim
Placer.....
Riverside.....Dr. Paul E. Simonds, Riverside
Sacramento.....Dr. S. E. Simmons, Sacramento
San Benito.....

San Bernardino.....Dr. C. L. Cartiss, Redlands
San Diego.....Dr. Robt. Pollock, San Diego
San Francisco.....Dr. Le Roy Briggs, San Francisco
San Joaquin.....Dr. Dewey R. Powell, Stockton
San Luis Obispo.....Dr. Paul K. Jackson, San Luis Obispo
San Mateo.....Dr. A. L. Offield, Burlingame
Santa Barbara.....Dr. Robert W. Hartwell, Santa Barbara
Santa Clara.....Dr. Chas. Richards, San Jose
Santa Cruz.....Dr. J. B. Cutter, Watsonville
Shasta.....Dr. F. Stabel, Redding
Siskiyou.....
Solano.....Dr. A. V. Doran, Vallejo
Sonoma.....Dr. N. Juell, Santa Rosa
Stanislaus.....Dr. E. F. Reamer, Modesto
Tehama.....
Tulare.....Dr. J. T. Melvin, Porterville
Tuolumne.....
Ventura.....Dr. C. A. Jensen, Ventura
Yolo.....Dr. Frances L. Newton, Woodland
Yuba-Sutter.....

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

MARCH, 1921

No. 3

WHAT DO YOU GET OUT OF THE STATE MEDICAL SOCIETY?

This is directed straight at YOU, you who are a member of your county society, you who are practicing medicine as a means of making a livelihood, you who are interested in the ideal of medical service, you who have a family to support and a citizen's duty to fulfill. You pay your annual dues and you doubtless wonder what it goes for and what, after all, the county and state medical societies do to justify their existence. Many say they do nothing to justify their existence. For a moment, will you please take exact stock of whether the state society is really worth your dues and what you expect to gain by membership.

The question at the head of this column can be answered thus: You get out of the State Medical Society exactly what and in proportion to what you put into it. It affords you legal protection. It gives you an opportunity for contact with the best of your profession in this and all states. It preserves the standards of your professional practice. It is your agent in the dissemination of health propaganda and preventive medicine. Beyond these things, will you be very candid, and state exactly what else your county and state societies do for you? Will you *then* analyze your answer in the light of what you yourself have done for your county and state societies. You will find that they inevitably strike a balance. If your county society is not alive and worth while to every member, if the state society does not promote the activities you think it ought to promote, if either of them fall short of what YOU think they should do and be, consider well your own part in them and mend your ways. The fault lies exactly with you. The state society is a democratic institution and is governed solely by the votes of the majority.

You cannot expect satisfactory results if in the first place you never go to county or state meetings. If you do attend with fair regularity, you

cannot further expect your elected officers to prosecute their duties with vigor and efficiency if you never give them a thought from one annual meeting to the next. Keep them posted on what you believe and want. If they do not carry out your wishes, do not re-elect them.

Did you ever stop to consider what would happen to YOU, to your means of livelihood, to your ability to care for your domestic obligations and civic duties, to your ability to keep posted in your profession, if the county and state societies did not exist? If they have a function of value to you and you are not getting that value from them, you can rest assured that the fault is your own. With the approach of the annual meeting at San Diego on May 10, 11 and 12, you should be very much awake to the responsibility of your own delegates to you. You should see that they are informed and instructed as to your wishes. You should keep close tab on what they do. Watch the other officers. You have elected them. See that they justify their existence and bring forth meat worthy of re-election.

We do not want encomiums. We want progress. We do not want platitudes. We want a moving program. We do not want to duplicate last year's program. We want a goal years in the future.

Perhaps nothing will develop the organization we need so quickly and fruitfully as more personal contact and acquaintance with the state society officers. The councilors and presidents can render you invaluable service. Why not see that they visit you, in every component society, several times yearly? Editorials, and letters, and bulletins will not accomplish in years what direct personal contact will do at once. We have the quality and quantity in our membership. The chief fault shown by you, the individual member, is a more or less complete forgetfulness that *you are the society*. You will get back from the society what you give to it. Make it your servant as it seeks to be, in very fact. Watch it. Instruct it. Know that it is yours.

THE NEED FOR AUTOPSIES

It does not seem to be realized generally how much the progress of medical knowledge and the development of the skill of our practitioners depends upon the possibility of a thorough and yet reverent examination of the dead. In this connection it is most essential, that the general practitioner should properly instruct the laity, so as to enlighten public opinion. The people are not sufficiently aware of the great handicap under which the physician's work is done, because he is unable to inspect closely and to examine directly just those parts of the body in which disease usually does its active work, so that he has to be satisfied with second and often third rate information in regard to the real condition of the internal organs of a given patient. In fact every medical examination is a very clever piece of detective work with problems which at times would even baffle a Sherlock Holmes, and the conclusions are often drawn on circumstantial evidence alone, the unreliability of which is only too well known. The surgeon is more fortunate, because he can usually see and palpate the things which he attacks with his knife, but even he is badly hampered by the necessarily limited space that he works in and by the limited time at his disposal while he works. On watching any difficult surgical operation these limitations become painfully evident and one instinctively feels how much would be gained if only the surgeon were only able to see more and if the minutes elapsing were not of such precious importance.

The laity also never seems to realize that each case of disease is a law to itself and is in many essential ways different from each similar case. The average person has an idea that through some obscure, more or less magic process the "doctor" arrives at a *diagnosis* and that, when this wonderful feat has been accomplished, the rest is plain sailing. We ourselves are partly to blame for this impression. We do not impress our patients sufficiently with the fact that a diagnosis is only the first step in the right direction. If the laity knew how much inaccuracy of diagnosis depends on lack of post mortem examination they would insist on learning more. They would beg us to make the examination of the dead a much more common practice, in order to confirm or disprove the diagnosis to protect the surviving members of the family, and to afford help and protection to others who suffer similarly.

The laity should know that it is inconceivable that a physician should keep his judgment unimpaired without frequently having his opinions checked up at the autopsy-table. Still the number of autopsies performed on private patients is absurdly small, even on those who die in hospitals where all facilities for proper examination are at hand. The blame for this does not rest with the laity because often not even an attempt is made to obtain the necessary consent, or it is done perfunctorily without letting the relatives know what is at stake for themselves or for the next victim of the same disease.

If only people would realize that after death

the personality of an individual is completely unrelated to the cast-off body, it would be much easier to approach the problem, but there are few who will not listen to reason. Many who at first were antagonistic and after some persuasion yielded, have later been well content. Many have had deep regrets because the proper knowledge was not obtained.

It is curious that recently certain undertakers, from purely personal and mercenary motives have tried to work in the crudest manner upon the sensibilities of the people to prevent autopsies. These men do not seem to realize that a well-informed public will quickly resent and adequately dispose of any such vicious interference between them and their medical advisers.

Every public hospital should require autopsies in all cases where there is no serious objection on the part of the relatives. These hospitals are the places where the practitioners of the future are being taught and where most of the progress in medical knowledge is being made. No need of a community is greater than that for safe and sane physicians. How often must we all trust our very lives to their judgment and how often does the welfare of the whole community depend upon their skill and upon their vigilance! These are matters of common knowledge which only fools can deny. This being so everything must be done to provide these young physicians with real knowledge, not gathered from musty tomes in the library but from the eternally young and constantly changing tree of life. We are all happy in our knowledge that in this regard our present teaching is infinitely better than it was, even a generation ago. The students actually see patients, not diagrams of disease. On account of their better preliminary education they are well qualified to observe and interpret what they notice at the bedside. Under the guidance of their teachers they spend hours and days in trying to unravel the mysteries of disease. They are shown the best ways of combating the evil foe that is laying low a human life. In each case they and their teachers make a heroic effort to save their patients without any idea of personal gain except their mental and professional improvement, and when this much-contested battle ends unfavorably, as it sometimes must, they should have an opportunity of meeting their enemy, disease, face to face, and to see what stuff he is made of and how possibly he could be beaten the next time.

ASSEMBLY BILL 72

Assembly Bill 72 is the successor to the first member of "The Quack Quartet" which became familiar as number 5 on the November ballot. Although the forces behind it were routed by the people in 46 counties of California they have re-assembled their defeated troops and are once more desperately attacking the laws.

It is proper to inquire as to the sincerity of those who clamor for medical freedom and denounce and defy the Board of Examiners now established by law and at the same time seek to establish a similar board that shall have the right "to examine applicants and to issue and revoke licenses to

practice chiropractic—and make it *unlawful* for any person to practice chiropractic without a license—and make it the duty of the several district attorneys of this state to prosecute all persons charged with the violation of the provisions of this (Assembly Bill 72) act.”

Instead of medical freedom it is obvious to anyone that analyzes the aggressive tactics of this noisy political chiropractic group that they are striving to set up a supervisory board of their own to exercise the power of selection and elimination, to decide who shall and who shall not be admitted to the charmed chiropractic circle.

It is pertinent to inquire why those who now defy established laws believe others should be prosecuted for violating laws they seek to establish? The incongruous conduct of the chiropractors suggests unpleasant questions.

The Progressive Chiropractors' Association of Southern California has announced that it is making a house to house canvass in favor of Assembly Bill 72. Griffith Jones of Los Angeles, who is managing the campaign, asserts that all chiropractors convicted of violating the state medical practice act will refuse to pay the fine or to receive a suspended jail sentence and will go to jail as a protest.

Parades, advertising appeals, telegrams, testimonials, fasting are all parts of this protest and aimed to produce an immediate effect on the legislature. They are vainly trying to make the ordinary course of justice appear oppressive.

To any legislator who considers the motives and methods of the proponents of Assembly Bill 72, and who sincerely believes in law enforcement, this attempt of law-defying chiropractors to make a mockery of present laws, in order to become a law unto themselves, will not appeal. At this time, when it is claimed that we have more boards and commissions than the public needs, to create another board to perform functions that are fully and fairly performed by the present board, seems needless waste. The people decided this question on November 2, 1920, after a state-wide campaign in which all the evidence now offered was submitted, so let's have done with it, until it is re-submitted to and rejected by the people.

MUNICIPAL TUBERCULOSIS PROGRAM

The value to public health and economic welfare of the work of the allied tuberculosis associations no longer needs comment. The present situation in San Francisco merits extended notice both as an example and as a stimulant to other communities.

At the present time the Tuberculosis Association is maintaining clinics in five different sections of this city. There are fourteen clinic periods with two evening clinics. The evening clinics are for the accommodation of men and women who work and who cannot attend a morning clinic without loss of time. There are five physicians in attendance at these clinics, and the Association pays the salaries of six visiting nurses.

The Board of Health furnishes three additional nurses for this work.

The Tuberculosis Association opened its first clinic in 1908. During that year 346 patients visited the clinic. Two physicians and two nurses were in attendance. From that time until the present the work has steadily increased, more and more people each year learning the value of expert examination and advice.

During the past year 1920, 1723 patients visited the Association clinics. During this year 5,850 visits were made by patients to the clinics. The nurses made 16,515 visits to the homes.

The value of this work is perhaps best attested by the fact that the death rate from tuberculosis has decreased 25 per cent. during the last ten years.

In 1915 in response to a request from the Board of Health the Association outlined in detail the tuberculosis situation in San Francisco and proposed as a remedy the creation of a special tuberculosis bureau in the Board of Health with an annual appropriation of forty thousand dollars. It was proposed to establish 600 public hospital beds for advanced cases, 200 public sanatorium beds for incipient cases, a pavilion for tuberculous children and a preventorium for children exposed to tuberculosis. This plan was not approved. The city now has an annual appropriation of \$5,000 for tuberculosis work.

An initial appropriation of \$50,000 toward the cost of the first unit of a sanatorium was included in the budget of 1918-19. During the year no suitable site was found for the sanatorium. An additional appropriation of \$50,000 was included in the 1919-20 budget. A site was chosen in Los Gatos called Nippon Mura. As soon as the purchase of this property became known the citizens of Los Gatos began legal proceedings to prevent the people of San Francisco from developing a sanatorium at this place. The case is still pending in the courts.

The position of San Francisco is unique in the matter of allowing a private charity to carry on so important a phase of the work as that of maintaining tuberculosis clinics. In New York, Boston, Providence, Buffalo, Cleveland, Chicago, St. Louis and Los Angeles, tuberculosis clinics are by the municipality; in most cases they are under the department of health. In Buffalo five health centers are maintained, the tuberculosis clinic being part of the health center work.

For a number of years the San Francisco Tuberculosis Association has emphasized the necessity for having the city take over this phase of the work. The time has come when the city must take over the tuberculosis clinics which had been maintained for so long by the Tuberculosis Association. The Association must turn over the clinic work to the city in order that their own funds may be used to extend the educational and prevention work. \$20,000 would enable the Board of Health to carry on the clinic work at its present standard. Such an agreement with the city will become effective in July of the present year.

DOCTORS AS HEALTH ADVISERS

"The doctor is all right as a doctor, but as a health adviser, ah! I should hardly think of skinning him, but at least the thought of hitting him over the head is a beautiful one." With this silly sally Gilbert K. Chesterton, the English writer and lecturer, refers to doctors in the public lectures which he is delivering over the country. He attempts to amuse audiences with extravagant statements on the application of hygienic principles.

And yet the health of Mr. Chesterton and all the rest of the traveling public is guarded by doctors constantly aiming to reduce to a minimum the dangers from impure food, drinking water on trains and boats and the sources of various communicable diseases.

Infection from typhoid, dysentery and other water-borne diseases was formerly a very live danger. Those who fail to appreciate the great benefits that our health service is daily conferring on all the people may sometimes entertain Chesterton's beautiful thought of hitting the doctor over the head. The Bolshevik sentiment of Russia was given free rein along this line and went down the road to the end of the trail. Russia is now clamoring for doctors.

The first beautiful thought that enters a normal head that is hit is to call a doctor. A few months ago an accident occurred in the metropolis of this country. Hundreds of people were hit over the head and on other parts of the body. The call for doctors was instinctive and instantaneous—the response was immediate. Hundreds of lives were saved.

It is to the everlasting credit and honor of the medical profession that so many of its members devote so much of their time, study and effective effort to the prevention of disease. Chesterton seems to blame the medical profession of his country for the adoption of the system of compulsory health insurance established in England. He must be reminded that it was strongly opposed by a majority of the medical profession but imposed by the official leaders of England who also seem to believe that the doctors are all right as doctors. They were all right to bind up the wounds of the war, but when they objected to anti-vivisection and to health insurance, "it was chuck the rascals out."

Mr. Chesterton is on his way to California and can spare his breath to cool his porridge here as far as compulsory health insurance is concerned. The medical profession of this state refused to follow the English example of acquiescence, but placed the facts before the people and defeated health insurance by an impressive majority.

EDDIANSIGNOPRACTORS

The Eddyites started something that they will find difficult to stop when they formed an apparent political alliance with the chiropractors in order to oppose scientific medicine. It is reported that a number of C. S. practitioners are quitting to become D. C's.

Among the more noted "converts" we observe the name of Don. G. Husted, first reader in the

leading Eddyite Church of Rochester. He was chairman of their Board of Trustees, Building Committee, Finance Committee, etc., so he had access to all the esoteric wisdom that cures non-existent diseases. After trying the Eddyite theories for thirteen years he thinks there is more in chiropractic. Mr. Husted offers as a reason for his conversion that he submitted Mrs. Eddy's method of metaphysical healing to practical tests and became dissatisfied with its efficacy.

Chiropractic advertises to heal where others fail, and offers its imaginary statistics and typical testimonials in support of its fantastic theories. The C. S. group practically stopped advertising pending the outcome of the litigation between the Trustees and Directors. The present tendency of the practitioners to join the newer cult shows that it pays to advertise.

Editorial Comment

Our friends the dentists of northern California have done a deed that reflects a clear appreciation of eminent service rendered, and that signalizes the self-sacrificing public conscience of a member of their profession. Recently at a banquet in San Francisco, a fine new automobile was presented by his fellow dentists to Dr. Guy S. Millberry, dean of the Dental School of the University of California, to replace the old one which was sadly worn in following the call of duty wheresoever it led over the state. It was a graceful and merited recognition of pre-eminent service to the cause of professional advancement and the maintenance of professional standards.

The physician of all men is opposed to the undue use of drugs. We have too many drugs and too many preparations of drugs. As practice and counsel increase, fewer drugs are used. Drugs do not introduce any new function. They increase, decrease or pervert what is already present. Too often the physician is forced by demand of the patient to use drugs. Popular education should remedy this evil. A copious wastebasket for circulars of new drugs is a necessary piece of furniture.

Some 15,000 deaths occur yearly from diphtheria, deaths which in every case practically could be prevented if antitoxin were used early and properly. The same may be said of the 10,000 and more deaths annually from typhoid. Typhoid can be prevented by vaccination. Its occurrence is a sanitary crime invariably, and should be considered more of a moral disgrace than insanity. Again, the 400 deaths annually from smallpox are entirely unnecessary, and represent simply an incompletely vaccinated population.

Make your reservations for May 10, 11, and 12 in San Diego directly with the Coronado Hotel. The State Society office has troubles of its own.

Original Articles

SUCCESS: AS APPLIED TO UROLOGY.*

By E. SPENCE DE PUY, M. D., Oakland,

Visiting Urologist to Samuel Merritt Hospital; Visiting Urologist to Alameda County Hospital; Chief of Urological Staff Oakland Public Health Center.

If to get what one wants is to be successful, then every one desires success, and as success in anything is dependent upon an application of the same inflexible laws, an apprehension of these laws is therefore desirable. Every man who has won success has applied these laws, though not always consciously. The laws governing success, which partly concern thought and partly action, though rigidly inflexible are exceedingly simple.

Since, then, the kind of success that is uninterrupted and continuous is dependent upon such an elementary truth as merely knowing a thing and then doing it, and as we all of us most easily appropriate to our own use those facts which are definitely formulated, it is the writer's purpose to set forth the principles governing success in general and urology in particular.

Neither high humanitarian motives, skill of an unusual order, nor yet a mere desire to succeed financially will bring success. One may have any or all of these attributes and yet be a flat failure. *The first law of success is that one must know what he wants.* A test of whether one really wants to do a thing is whether he enjoys doing it. Primarily, then, does one want to be a urologist? It is necessary to determine this, even though one is already in the specialty, for he may have fallen into it by chance. One must know that he wants to be a urologist, that through urology he finds scope for self-expression.

As a second law it follows that *one must want what he wants.* One either wants a thing tremendously or he in truth does not want it at all. There is no satisfaction in going through life doing something one really does not want to do; mere money can not compensate one for that. If you, for instance, are not happy in your work you are doing yourself and your specialty an injustice by continuing to do the thing you do not want to do.

Having decided that one wants to be successful he must be determined he will succeed. There can be no wavering. It is necessary that one believe in himself, else how can he expect such belief of others.

One must learn the mastery of his creative power. If one is to build success he must learn to see things, must learn to compose his picture, arrange and rearrange it. Imagination is the talent for creating images. This picturing is what every one does, and the result is in proportion to whether the pictures be great or merely commonplace. One's results can be no greater than his picture; anything that man can picture he can, through properly directed efforts, cause to take form.

Any man can in his mind make any picture on any scale to which his fancy dares aspire, and his picture must take form if his actions are in accord

with the principle that as man seeks advancement for himself his progress shall carry others with him. The dreamers of yesterday have made possible the concrete miracles of to-day; and the same creative process applicable to others' affairs may equally well be adapted to urology.

Consider the young urologist. He has perhaps rented modest space consisting of no more than one general room and the half of a waiting room. This beginner must at first play all the parts—doctor, nurse, secretary and technician. The equipment we may assume as meager.

By what methods shall the novice expand his quarters, and how acquire a considerable practice? Will he be forced to enlarge his space through a press of work that gradually crowds him out of his one room, or will he fit up other rooms and then fill them with patients? If he knows the laws governing success he will adopt the latter course. He will vision himself at work in larger quarters; he will see himself presiding over elaborately-equipped rooms. Surrounded by competent assistants in his picture the man of purpose will see himself the genius directing his institution. A builder could not erect an edifice without his plans constantly before him, no more can another construct the thing he desires without his vision before him. One must live continuously with his animated plans.

And in quite another way can the trained imagination be made use of; granted adequate preliminary training, one keeps abreast of the times by reading and observation, and by constantly doing one's self.

Here again one's powers of creation may serve him well. Through imagination one learns to perfect his technique; through its use one learns to train his mind and eye and hand. Whatever one has ever read or seen or conceived, one can recollect and visualize. It is within one's power at any time to set up before his mind's eye a moving picture and to throw on the screen any operation he has ever seen, or read of, or himself devised. One can run the reel over and over again; one can slow down the action; one can stop any place and analyze—one can go back and repeat. One can do more than this: in his mind's eye he may, if he teach himself how, draw the screen up close, step into the picture, take part in it, dominate it. Every successful man has actually done these things, but not always has he done them consciously.

Success is possible to any man who has the will to succeed. Imagination, that busy factory wherein one conceives life's designs, is never idle. Where the creative faculty functions without direction, perhaps half the pictures are of doubt and failure, while another large portion are only blurred and indistinct. Like all other energy, the imagination needs direction.

As there is nothing supernatural about the other forces of the mind, neither is there anything mystic about the will.

The peculiar province of the will is to keep the mind at work in the way one wants it to work. If one has set his heart upon being a successful urologist, the work of the will is to keep his mind

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

upon that subject. Pictures of the things one sincerely desires come almost unbidden and are held without effort, while the things one wants only half-heartedly come with effort or even not at all.

These mental attributes to success are essential to its attainment; no one has ever otherwise achieved his desires, and it is inconceivable that any one ever will. But one may earnestly desire to succeed, and have all the determination in the world, and make beautiful pictures of his intentions, and yet never become anything but a flat failure; he may never be anything but a visionary, if his thinking is not attended by proper action.

Because the practice of medicine is one of the humane professions is no good reason, since most of its members are dependent upon it for their livelihood, why it should not be conducted in a business-like manner. One is not advancing the idea that the financial part of any branch of medicine is the prime matter for consideration, but it does not lie within the scope of this article to discuss the profession's relations to the humanities further than to fully and heartily concede they are paramount.

In order to do good work and give expression to his humane impulses, one requires many things which it takes money to buy—equipment, library, opportunity for study, and so forth. One does not desire these things for himself, but for his work. It is therefore only just and right that the people for whose benefit these things are acquired, and for whose service this enlarged knowledge is sought, should furnish the money for their acquisition.

The business side of medicine is as honorable as the business side of anything else; it is as exactly as honorable, and no more so, as the individual himself. The medical man has for sale knowledge, skill, and service. To succeed he must know how to sell his commodities, and he must be particularly careful to deliver to the purchaser honest wares worth the money the buyer pays for them. When a patient comes to a doctor's office—if a homely illustration may be pardoned—he is a shopper; the physician is in the same relation to him as any other salesman. The patient comes to purchase a diagnosis and to determine whether he shall also invest in such services as the medical man has to offer. It is therefore incumbent upon the seller, in common honesty and as sound business, to give the purchaser in exchange for his money an opinion that is not only worth what is paid for it but a little more. That, I take it, is one of the most important points to bear in mind all the way through—the giving of a little more than is paid for. Consider it well, the seller receives money, therefore a profit. He does not give back money for money, but if he gives in return for the money he receives what the buyer feels is of more value to him than the money he has paid, then he, the buyer, has also made a profit. If every patient is made to feel that at each visit he has received something more in restored health than what he has expended in cash he is a happy and contented purchaser.

As men in other occupations have regular hours of work, the physician too should determine what regular hours he purposes to devote to his work; and having determined these hours they should be observed.

An engagement is a contract to do a certain thing at certain time, and no contract is to be broken lightly. When one sets forth that he has certain office hours he has entered into a contract with the public, and when he violates this contract he has done an unrighteous thing which works an injury to himself, his associates or assistants, and his clientele.

As one is under obligations to have as regular hours of work as a laborer on a section-gang—only longer hours probably—and if one is to keep his self-respect, and is going to be a competent urologist, he will probably have to work even harder than the section-hand.

One must do a great many things, perform a great number of actions, either mental or physical, and it is essential that each and every one of these actions be effective actions. One must do every day all that he can do that day. No one needs to overwork, and each individual knows what he can do without hurting himself, but he must be honest with himself, and by doing so he will frequently discover that he has done less than he could rather than more than he ought.

What is done to-day must in each small thing be successfully done. Hardly any day is made up of big things but of a multitude of small things. If all the small things of the day are successfully done, then it is a successful day. If one's successful days greatly outnumber the days of failure, then life is successful.

One performs his actions effectively by keeping before him his plans, by calling to his aid the animated images he has previously created. To do really large and difficult things takes a stout heart and high courage, takes confidence and belief in one's self. Confidence can not be taught nor purchased. Confidence is a manufactured thing, the joint product of self-suggestion and imagination; consequently man must prepare himself beforehand for difficult tasks, and when the tasks come to hand he must not, panic-stricken, forget nor lay aside the machinery wherewith he manufactured his confidence. Action and thought must go together.

Effective action must be extended to everything having to do with success. Office management, the management of patients, and so forth. Take the matter of a waiting-room. Patients come to the waiting-room during office hours because one has contracted to see them at those hours. If there is one patient he can be treated in the single room with which one may have begun; they will not remain if they must in succession wait for one table in one treatment room. A full waiting-room may be a good advertisement, but it is nowhere nearly as good an advertisement as full treatment rooms, nor is it as satisfactory to either the many patients nor to the urologist who enjoys his work.

No man can stand still; the day he ceases going forward he begins to go back. In common

with all life, man is under the necessity of growth. There is no such thing as reaching a certain point and from thereon taking it easy. Through growth the urologist will not only increase his ability, but he will expand his plant. From the one-room office and the single table, the young urologist will develop many rooms, increased facilities for treating many patients at the same time. If his vision has included these things, he will have his own well-equipped laboratory, his own Roentgenological department and facilities for developing his plates in his own plant. There will also be one or more properly furnished rest-rooms. A well-furnished surgery where minor operations may be performed. In a word, the finished office will be so complete in every detail that it shall never be necessary to turn outside the office for appliances, for any assistance in the performance of diagnostic technique, or for anything less than a major surgical operation. The advantages of all this concentration being the conservation of time and the satisfaction of having diagnostic procedures under one's own supervision.

As one expands, acquires new equipment and space, he must never delude himself through a false sense of economy into acquiring anything falling below his conception of what is the best obtainable at any cost. And, if one's office is to be an expression of himself, no piece of apparatus will be added, and no technique, laboratory or otherwise, adopted but what he is master of it. This does not mean that one will actually do all the work himself; he will require many assistants.

Perhaps with a man's growth and, consequently, necessary dependence upon others to do many things that the limits of time make it impossible for to do personally, nothing is of more importance to his success than the people he selects to be his assistants.

Your institution is you; it is your expression of what you are, of what you believe, and of what you are capable of performing. In the same sense your assistants must also be but an expression of you. In the work you do, your life's work, your assistants are your brain expanded, your hands and your eyes multiplied. In so far as the conduct of your work is concerned, there can be no room for the expression of individuality on the part of your assistants, and their pride should be that through loyalty and belief in you they sink their identity in you. This applies to your institution and its purpose only, of course, as seems almost unnecessary to say.

As you of yourself do all that you can do each day, as you neglect till to-morrow none of the things that are to be done to-day, then neither can you permit that those who are extensions of yourself violate your convictions by inharmonious thought or action.

You must be a firm and wise administrator. You know what you want and you must require its performance.

But whereas those who assist you are in a sense you, in quite another sense they are individuals. As you desire to advance and get what you want, you must appreciate that those who make possible your larger advances have also the same desire for advance and growth as you have. It is

necessary then, and your true success depends upon it, that you provide means whereby those who work with and for you may see before them the open road to a larger share in the rewards of the work of what by now has become an institution.

This, then, comprises all that is necessary to the achievement of success; if some of it is of general application that is none the less a reason why it is not specifically applicable to the specialty of urology, and to attain any degree of conspicuous success no proposal advanced may be safely ignored.

204 Dalziel Bldg.

STIFFNESS IN THE EXTREMITIES FOLLOWED BY ACCIDENT AND INJURY.*

By A. L. FISHER, M.D., San Francisco.

The object of this paper is to attempt to classify some of the causes of stiffness following injuries to and operations on the extremities.

We are all familiar with the fact that after operation or injury stiffness is one of the most disagreeable and trying symptoms that arises. Stiffness may be due to lesions in practically any or all of the structures that go to make up the extremity. The first stiffness of which a patient complains after immobilization of the part, particularly in the lower extremity, is due to oedema—lack of vascular tone and muscular activity. When this is the only cause the condition is temporary and with resumption of muscular activity soon passes off.

In considering the other causes of stiffness, I think it may be well to take certain examples and use them as types. First, bony changes. Apart from the gross deformity following injury the principal cause of stiffness is chronic arthritis with the upbuilding of bone predominating. Take, for example, a fracture about the ankle. The fracture is immobilized and after, say, three months the patient is told he can go to work. The surgeon says three months is a long enough disability for a fracture near the ankle. The man attempts to work but finds he cannot. The ankle is painful, perhaps, and is stiff. He goes about six or eight months, or a year, when finally an X-ray shows the presence of chronic arthritis. Search is then made for the points of origin of focal infection. Usually it is easily discovered in the mouth about the teeth. These are then attended to, but the permanent damage has been done. It seems that injury near a joint predisposes that joint to chronic non-specific arthritis. There is an opportunity here for a lot of investigation—the relation of trauma to the production of chronic arthritis. I would here issue this warning: In the care of injuries in and about the joint, look after the sources of focal infection, especially the teeth, and this should be done immediately and not wait until arthritis develops.

In this same group of chronic arthritis the cartilages are not infrequently, perhaps invariably, affected. They take part in the process and at an earlier stage than the bony change become visible. I recall one man who had, fourteen months after

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

injury, (a fracture of the lower third of both bones of the leg), a stiff ankle. X-ray examination showed a thinning of the cartilage, the early stage of chronic arthritis. This man had apical abscesses.

Lesions of the synovial membranes cause stiffness under three conditions: First, acute synovitis with effusion; second, marked villous formation; third, extreme thickening of the membrane itself. These lesions will cause limitation of motion, but in the case of villous formation there will be free motion through its possible range and then sudden stoppage. Thickening of the joint capsule comes under consideration only rarely.

I think the most frequent cause of stiffness after operation and injury is due to change in the muscle. In taking up this subject it will be necessary to consider several types of injury. First let us consider that type of stiffness that we have all observed following fracture of the femur. It is a matter of common knowledge that after these fractures the knee is stiff. Why? Is there any lesion in the knee joint? There is not. Then why does the knee not bend? Let us consider for a moment what happens to the muscle when the bone is fractured. The muscle is lacerated, there is hemorrhage into it, and definite hemotoma may be formed. Following the injury there is a reaction, cellular infiltration and the gradual production of a scar. The scar of itself causes shortening of the muscle, but more important it unites the muscle to the femur, say in its middle third, so that the muscle acts from about the middle third of the thigh only and not through its whole length. In addition to this, the muscle also unites with the surrounding fibrous structures. I have had this question asked me by the head of the Physiotherapy Department of the University of California: "Why is it that the knee is so much stiffer in the broken femur cases that have been operated upon than in those that have not been operated upon?" I think the answer is plain. In the non-operative cases the scar is formed at the site of fracture only. In those cases operated upon the scar extends for a distance of eight, ten, or more, inches, and the muscle becomes adherent to the bone and surrounding fascias so much nearer the knee joint and so its active part is so much shorter.

Now consider another type of injury; let's say, for example, a fracture of the clavicle. In this injury the arm is put up in a Sayre or Velpeau dressing. The fracture itself gives no after trouble, but there will be stiffness in the arm, perhaps a little at the shoulder, abduction being difficult, but the main disability, especially in children, is the inability to extend at the elbow. This is due to shortening of the biceps muscle which shortens in response to a definite biological law which states that "whenever the origin and insertion of a muscle approach each other and are held in this position the muscle will shorten." With the arm held in the Velpeau position, the origin and insertion of the biceps approach each other. This law also comes into play where any joint is held still for a length of time, as either the flexors or extensors are held in a permanently

shortened state. As will appear later, in most instances, this stiffness is not difficult to overcome:

The third type of muscular lesion is that in which the muscle fibers degenerate and there is substitution of these fibers by fibrous tissue, as in Volkman's Ischaemic contraction. In this condition certain of the muscle fibers die and are replaced by fibrous tissue. Fibrous tissue ordinarily contracts. In this condition it does so; consequently, we have a constant pull on the flexor surface of the forearm, resulting in the characteristic contraction. This condition is not only produced in the classical way, namely, by the removal of tight splints, but may be brought about by falls on the arm. I have seen at least one such instance where a man developed an ischaemic contraction following two falls from a bicycle, in each instance striking the flexor surface of the forearm. An ordinary muscular wry neck is also the same type of lesion.

Adhesions of tendons to scar tissue is a troublesome source of stiffness. The tendons themselves may be but slightly injured, just enough to give a growing surface, but they become embodied in a mass of scar and the muscular pull from above is, of course, interfered with.

Tendon sheath inflammations ordinarily give rise to transitory stiffness unless the inflammation be suppurative when, if left alone or unless skillfully treated, it will destroy the tendon—or unless it be tuberculous. Facial thickening comes into consideration only in special cases, as in Dupuytren's contraction or as a source of pain and consequent stiffness, as in fibrositis.

Nerve injury as a cause of stiffness is interesting. Ordinarily we think of injury or disease of peripheral nerves as causing, not stiffness, but flaccidity. If nerves to both flexor and extensor muscles are injured this would be true, but we must take into consideration that ordinarily only one set of nerves is injured or perhaps only one nerve. The muscles with the uninjured nerves go into tonic activity with the result that contraction may and does occur. The nerve may be severed, it may be caught in a scar or callous, or may merely have been crushed. In any case its axis cylinder has been destroyed and the muscle it supplies will not function again until the axis cylinder grows down. The stiffness due to upper neurone lesion, as exemplified by Little's disease, or himeplegia, is due to overaction of the stronger group of muscles; both groups, flexors and extensors, being in tonic activity, direction of motion will, of course, be that of the stronger pull.

You will note that I have not mentioned adhesions in joints. Adhesions in joints do occur but are exceedingly rare. I have opened for various causes a great many joints and I have seen adhesions in but one joint. That was an old gonorrhoeal knee. The so-called adhesions in joints are, I believe, nothing but slight fibrous thickenings about the joint.

Treatment: In most of the conditions herein enumerated something can be done, in many a good deal, in a few very little. It was really a consideration of what can be done by physiotherapy that interested me at first. Physiotherapy is un-

questionably a fad at present. It is true it can do some things, but it cannot do all. Our physiotherapeutic agents are massage, active and passive motions, either manual or with machine, constant traction, moist and dry heat, electricity, light, and passive hyperaemia. In a few of the conditions above mentioned we have indications for operation.

In bone injuries early passive motion and massage unquestionably help. They produce muscle tone and prevent annoying oedema. In the treatment of arthritis the therapy must be directed against the cause. The other means, heat, massage, passive congestion, etc., may make the patient feel better for an hour or two, but they make no permanent change in the joints themselves.

In the first type of muscle change, that is, scar following fracture, especially in fracture of the femur, perhaps a little can be done by using the force on the leg to bend the knee, but after the first bend is made the patient will do most of the loosening by the use of his own muscles. In the second type, the shortened normal muscle, a great deal can be done by passive motion. The muscle yields readily to stretching. In most instances it takes but a few motions if the opponents are in good condition. I wish to emphasize here the fact that fixation of a normal joint does not cause ankylosis. There is nothing in a normal joint that can cause union between the two bones, no matter how long they be held together. If the joint is the seat of a chronic arthritis, there may be bony interlocking or even bony union. In the third condition, muscle degeneration, constant traction is the only thing that does any good.

To loosen scar tissue in skin or fascia by massage, or any other form of physiotherapy, is, I believe, hopeless. The skin about the scar may be loosened, but not the scar itself. It is hopeless also to attempt to free adherent tendons in this manner. Suppurative tendon sheath infections should be opened by multiple lateral incisions and then the constriction bandage should be applied above the affected part for 20 to 22 hours a day. In the treatment of nerve injuries the essential thing, of course, is to re-establish and maintain a continuity of the nerve. This done and the extremity maintained in its physiologic position all is done that can be done until the nerve grows down. It does no good to massage or electrify a muscle without a nerve. If there is not an actual paralysis, but merely paresis, then massage and electricity may help.

In going over case records and in questioning enthusiastic physiotherapy aids, I have been struck by the fact that physiotherapy as at present applied and, shall I say, misapplied, does good in early fracture cases and practically in this group of cases only. We have all seen enthusiastic attempts to do this, that and the other by means of physiotherapy, but when we sit down and cold-bloodedly study the records, the limitations of this form of treatment become more and more apparent. It is for careful and unbiased observation of results that I would ask.

RECENT DEVELOPMENTS IN RADIUM THERAPY.*

By REX DUNCAN, M. D., Los Angeles.

The past five years have seen great advancement in radium therapy equal to, if not greater than that of any other branch of medicine. This has resulted not so much from our increased knowledge of the physical properties of radium, as from the better application of this knowledge and more particularly from a careful study and better understanding of the histological changes produced in both normal and abnormal tissues.

Improved technique, or I might say, an entirely new technique has developed from the use of radium emanation and has greatly broadened the scope of radium therapy.

While it is my purpose to call attention to the more recent developments in radium therapy, I wish to emphasize the fact that radium is not an agent to be used indiscriminately; each case must be thoroughly and individually studied and radium therapy employed only when alone or in combination with some other form of treatment, results are offered superior to those otherwise obtainable.

Inasmuch as all modern work with radium must necessarily imply the use of radium emanation, I wish briefly to refer more in detail to it.

Radium is an element which owes its therapeutic properties to certain rays emitted during the process of its disintegration. These rays are termed alpha, beta and gamma rays. The first products of its disintegration are helium, an inert gas, and radium emanation to which it owes its radio activity. It is to the changes produced by these rays in the tissues that radium owes its therapeutic value. By means of an apparatus perfected by Prof. Duane of Harvard University, it is possible to collect from a sufficient quantity of radium in solution, the emanation, which may be used for therapeutic purposes, and which has all the properties of the parent substance. Radium emanation, a gas, is capable of great concentration. This permits of having in a very small container several hundred times the activity that might be obtained from a similar bulk of the radium salts. This is of tremendous advantage, where radium is to be applied within cavities or where screened or unscreened tubes are to be buried with the tumor substance.

When a small amount of sodium chloride or a piece of lead foil is encased in a glass tube, properly connected with this apparatus, and the emanation is brought and retained in contact with it for three hours, the active deposits radium B and C, which emit beta and gamma rays, will be deposited thereon, rendering the substance temporarily radio-active. The salt may be dissolved in a proper quantity of water to produce a physiological salt solution, its radio activity measured and administered intravenously. Lead foil, when rendered radio-active, in this manner may be cut into the desired shape for the treatment of various superficial lesions.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

To successfully employ radium emanation, an adequate quantity of radium is essential, one gram being approximately the minimum amount that is practical. From each gram of radium in solution, there may be collected each twenty-four hours 166 millicuries, minus a small loss. While the emanation collected undergoes rapid disintegration, losing one-half every four days, and practically all in about twenty days, more is being constantly given off, so that the amount or number of millicuries of emanation available at the end of thirty days is equivalent to the number of milligrams of radium element in solution. It is our rule, unless a special applicator is required, to collect the emanation in small glass capillary tubes, approximately three-fourths centimeter in length and one millimeter in diameter. These tubes are accurately measured to determine their radio activity. By incasing these tubes in various metal capsules, applicators or screens, the character of the beta and gamma rays may be modified as desired.

Extensive studies have greatly increased our knowledge of the histological changes produced by both the beta and gamma rays of radium on normal and pathological tissues. This work, conducted by different investigators, has shown that intracellular changes produced by the radium emanation differ greatly from those produced by the Roentgen rays. All tissues are influenced by a sufficient quantity of radium radiation; however, both normal and pathological tissues vary in their susceptibility, and on certain tissues it seems to exert a definite specific effect. Generally speaking, imperfectly formed tissues and cells are less resistant than normal tissues.

Janeway and Ewing, by a series of investigations, determined that carcinomatous cells were destroyed by one-fourth the dose necessary to destroy a normal epithelial cell. It is this hypersusceptibility of pathological tissues and the selective action upon certain normal tissues that give radium its therapeutic value. If it were possible to approximate a proper dosage, all malignant tissues could be destroyed. While such a technique will probably never be developed, great advancement has, and is being made.

The beta rays of radium with proper dosage have a well-defined and circumscribed effect for an area of approximately one and one-half centimeters, whereas the gamma rays in sufficient quantity, by proper screening and technique, may be effective for a distance of several inches. The beta rays, which are much more abundant, are employed chiefly in superficial lesions of the skin or mucous membrane, where the involvement does not extend beyond one and one-half centimeters in depth, or where the tubes are to be buried within the tumor substance. This, however, includes a very large percentage of the neoplastic diseases that we see.

Where it is desirable to radiate deeper tissues, the beta rays may, with one millimeter of platinum or other proper screening, be absorbed, leaving available the more penetrating gamma rays.

The efficiency of radium therapy depends upon the proper radiation of pathological tissue, with little permanent injury to adjacent normal tissue. Much greater efficiency is obtained from a given amount of radium emanation, where the applicator is buried within the tumor substance. These tubes, buried at a distance of approximately two and one-half centimeters, with proper dosage, produce a homogeneous raying of all intervening tissue. This is a very effective method of treatment. The small size of the emanation tubes makes it possible to bury them, either screened or unscreened, and permits of a large dosage with no sloughing of the tumor and little irritation to normal tissues.

By means of a suitable instrument, the bare or unscreened glass tubes, containing the radium emanation may be imbedded in a tumor, where they are allowed to remain. These tubes gradually lose their activity, remaining active for approximately twenty days. In certain cases where it is desirable to maintain a continuous radiation for a considerable period of time, a number of these tubes with quantities varying from five to ten millicuries may be imbedded at a distance of about one and one-half centimeters. The dosage thus obtained may be computed by multiplying the original amount buried by 132, which gives the total number of millicurie hours dosage.

Frequently we bury the emanation tubes, screened with one-half millimeter of platinum. Here we usually employ larger quantities of emanation, sometimes amounting to several hundred millicuries, and leaving the tube in situ for a few hours, depending upon the dosage desired. There is great advantage in burying the emanation tubes directly into the tumor substance in many locations, particularly in subcutaneous tumors and glands, tumors of the mouth, tongue and pharyngeal space, also in the prostate, bladder and other regions. Through a laparotomy opening, tubes may be buried in tumors within the abdominal cavity. The rapid absorption of various malignant growths, resulting from this method of treatment, has been most striking.

The ease with which either screened or unscreened tubes of radium emanation may be buried within the tissues and the fact that no sloughing or other breaking down of tissue results from proper dosage, render this method applicable in a large number of cases and render entirely unnecessary the opening of tumors by extensive incision, as suggested by Beck and others for the purpose of effecting a radiation of the deeper parts.

In certain cases it is necessary to have a large radio activity, amounting to several hundred millicuries in a very small applicator. This is particularly true in certain locations, where a large dosage is required and where it is difficult to retain an applicator in an accurate position for a long period of time. An emanation tube containing several hundred millicuries, screened with one millimeter of platinum, need not be larger than three millimeters in diameter, by one centimeter in length. This may be placed and retained in the bladder for one hour with little discomfort, using an operating cystoscope and cystoscope

holder. A similar applicator is of great value for application within the larynx, pharyngeal spaces, antrum, nasal fossa and other cavities. Large quantities in small applicators are also of great value, and may be accurately applied within the esophagus, or the cardiac end of the stomach, employing the fluoroscope. Marked palliative results have been obtained in a number of esophageal cases treated. The pain and stricture were relieved, permitting the swallowing of food, with the consequent general improvement.

A short intense radiation, gained from giving a large amount accurately applied for a short period of time, is frequently more effective than the use of a small quantity for a longer period of time. Not infrequently, is it desirable in the course of the treatment of certain cases to combine the various methods described above. The knowledge gained from observing the results in a large number of cases over a considerable period of time, enables one to determine the method of treatment best adapted to each particular case.

The results obtained by improved technique in treating the oral and adjacent cavities have been most encouraging. A high percentage of clinical cures has been effected with little or no disfigurement nor functional disturbances. A certain class of far advanced cases, particularly those with extensive local metastasis, previously considered beyond any treatment, has received marked palliative effect and in some instances, apparently permanent relief.

For the treatment of superficial lesions, radium emanation is ideal, inasmuch as it is possible to make applicators of nearly any desired shape, size and strength, permitting of a uniform and accurate radiation of the lesion. Applicators to conform to the contour of the part are of particular value in treating lesions on the nose, eyelids and lip.

Perhaps in no condition has radium been more generally and deservedly accepted than in uterine bleeding, both benign and malignant. Histological studies of uteri, removed at various intervals after the application of radium, have given us a precise knowledge of the changes produced by different dosage and technique rendering possible the more scientific treatment, which has produced results previously not attained. It is a regrettable fact that the greater amount of radium used in gynecology, is still done on the old standardized method. Benign uterine bleeding may be due to disease of the endometrium, to the presence of tumors or to disturbed ovarian function. Having determined the existing pathology, the technique may be so modified as to effect a proper radiation of the tissue affected.

Benign pathological conditions involving the endometrium are rarely more than one centimeter in depth, therefore when a proper quantity of radium is employed, screened with one-half millimeter of platinum, the effect due to the hard beta rays, which with a dosage of not to exceed 500 millicurie hours, produces the desired changes in the endometrium with little or no injury to the ovaries. This is of particular value in the treatment of menorrhagia in young women, where

it is desirable to conserve normal menstruation.

When the pathology is within the uterine wall, as in uterine fibrosis, myomata and fibroids and deeper, or when the uterus is not larger than a three months' pregnancy, the technique and dosage may be so modified as to afford relief of symptoms and a reduction in the size of the uterus, conserving menstruation in a certain percentage of cases where it is desirable to do so.

In women near or past the menopause, and where the uterus is not larger than a four-months' pregnancy or in menorrhagia, due to disturbed ovarian functions, of non-inflammatory origin, radium is still the treatment of choice. When anemia, cardiac lesions or other constitutional disturbances, render the case a poor surgical risk, bleeding may be arrested and the symptoms relieved. In uterine fibroid, where the uterus is larger than a four-months' pregnancy or in menorrhagia or metrorrhagia associated with acute inflammatory conditions, surgical treatment is usually preferable. I am sure that none of us would urge hysterotomy, with its immediate dangers, longer period of invalidism and post-operative sequelae, in a case where radium therapy would yield more satisfactory results.

The results of radium therapy in uterine cancer would alone be enough to establish it as one of our most valuable therapeutic agents. The results obtained in inoperable and recurrent cases together with greater facilities and improved technique have led to the treatment of earlier cases, until today radium therapy properly applied, is considered by many of the most able gynecologists in this country the treatment of choice in all cases of cervical carcinoma.

In cervical carcinoma, beneficial results are in direct proportion to the earliness with which we see the case. My results are quite consistent with others, whose facilities and technique warrant comparison. In approximately three hundred cases treated during the past four years, clinical cures have been effected in 24% of the inoperable cases, 30% of the recurrent cases and 87% of operable cases, referring to those only in which more than eight months have elapsed since treatment. The foul odorous discharge is arrested, hemorrhage and pain relieved in practically all cases and life prolonged for months and years in a large percentage of cases treated.

The extreme penetration of the gamma rays of radium and their selective effect upon pathological tissues, render them exceedingly valuable for the treatment of deep-seated lesions. For this work, it is necessary, however, to employ large quantities of radium or radium emanation ranging from five hundred to as high as fifteen hundred or two thousand millicuries for a single applicator, and giving at a single dose as much as ten to twenty thousand millicurie hours. By this method we have obtained some very satisfactory results in the treatment of mediastinal growths and other deep-seated lesions, also in conjunction with the direct application in tumors involving the esophagus and the stomach. Somewhat different technique and lesser dosage have been advantageously employed

in the treatment of both primary and metastatic glandular lesions. Over large subcutaneous areas, as in certain types of recurrent carcinoma of the breast, the results are far superior to those obtained by the hard Roentgen rays, and many cases that have progressed rapidly under X-ray treatment, have yielded promptly to appropriate radium therapy.

Hodgkin's disease and leukemia, particularly of the lymphatic and myelogenous type, have been very favorably influenced by the application of large doses of radium emanation. In these conditions, we have frequently buried tubes within the glands and also administered, by means of intravenous injection in solution, the active deposit of radium salts. This undoubtedly hastens the recovery and adds greatly to the permanency of the result.

Time will not permit of a thorough discussion of the internal use of radium and its active deposit, obtained from the radium emanation, but I wish to call your attention to the fact that much work has been done along this line, sufficient to demonstrate its value in properly selected cases of hypertension and arthritis and to encourage more extensive studies.

Post-operative prophylactic use of radium is indicated in a limited number of properly selected cases. Such cases should be the usual early and definitely operable conditions, and the radium used only as an additional safeguard. Following radical operation for breast amputation, radium emanation may be applied through drainage tubes placed at the time of operation directly into the wound. If the tubes are properly placed, a thorough raying of the areas in which recurrence is most frequent may be accomplished. All radiation is given within two or three days, following the operation, when the tubes may be withdrawn and there results little or no interference with the primary healing of the wound. By this or similar technique, radium emanation may be employed in various other locations and conditions.

I would urge very strongly against incomplete surgery or surgery in operable cases, depending upon the post-operative use of radium to effect a cure. Such cases as a rule should much better be treated by radium alone or surgery used only as a means of assisting better approximation of the radium emanation to the involved areas.

In conclusion, I wish to say that I have not endeavored to discuss in detail the many phases of radium therapy, nor even to touch upon the broad scope of this work. It is my desire to simply call your attention to the tremendous advancement that is being made in this branch of medicine, where the work with proper facilities is being scientifically conducted.

I do not hesitate to say that I believe the next few years will see a marked reaction and severe condemnation of radium therapy, due to the fact that very generally, and in increasing numbers, this work is being carried on by men with inadequate equipment and insufficient training and experience. Fortunately, there are in this country a number of substantially endowed institutions,

several co-operating with the established cancer research departments of various universities, whose work will stand out and ultimately establish the true value of radium therapy.

1151 West Sixth St.

Discussion opened by Dr. Clarence Moore, Los Angeles.

SURGERY OF THE CHEST.*

By CHARLES D. LOCKWOOD, M. D., Pasadena.

The world war has given a great impetus to chest surgery. This youngest of the surgical specialties has grown by leaps and bounds, and already we have an American Association for Thoracic Surgery.

The experience of surgeons in the army hospitals, both in the front areas where battle casualties furnished the bulk of the cases and also in the back areas where infection played the principal role, served to focus attention upon problems fundamental in thoracic surgery.

The organization of army hospitals afforded unusual opportunity for the study of both medical and surgical diseases. Abundance of material, freedom from the distractions of private practice, the constant availability of competent consultants, unlimited laboratory facilities and routine post-mortem examinations created conditions almost ideal for the study of disease. These ideal conditions, however, maintained only in the base hospitals. Evacuation hospitals and mobile hospitals near the front were analogous to emergency hospitals in civil life, and with the exception of a few hospitals, such as Evacuation Hospital No. 1 in France, they did not afford opportunity for completed observation and definitive treatment.

This paper is based upon personal experience in the treatment of gunshot wounds of the chest in front line hospitals and upon observation of the work done by French army surgeons both at the front and in permanent hospitals farther back.

The greatest contribution to the diagnosis and treatment of surgical lesions of the chest were made through routine X-ray examinations and bacteriological studies. X-ray examinations of the chest, in addition to the localization of foreign bodies, revealed unsuspected lung abscesses, encapsulated collections of pus in the pleural cavity and pneumothorax. The French surgeons, notably Robin and Sutro, developed a fluoroscopic method of removing small fragments of shell from the lung which enabled them to remove practically all foreign bodies in the chest with accuracy and only slight trauma. The roentgenographic study of old empyema cavities, outlined with bismuth paste, is a valuable guide to surgical treatment. The contributions of bacteriology to chest surgery is no less significant, and bacteriologic control, combined with frequent radiographic examinations, lends an accuracy to chest surgery comparable to that afforded the genito-urinary surgeon by the cystoscope and the functional tests of the kidney. Bacteriologic control in the treatment of empyema as worked out in the army hospitals has greatly helped to standardize the treatment of this disease.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

Early cultures will determine the question of when to operate. The pneumococcus infections require early drainage; streptococcus infection should not be drained until a general immunity has been established.

Bacterial cultures and counts are no less valuable guides as to when we should discontinue drainage and permit an empyema cavity to close. The Carrel-Dakin treatment of empyema cavities controlled by frequent bacteriologic examinations is ideal.

Military experience has taught us that surgery of the lungs can be brought under the same general principles as govern other organs of the body. We learned that the chest may be widely opened and explored just as the peritoneal cavity; that it was unnecessary to resort to special appliances for the maintenance of negative pressure; that one need not fear artificial pneumothorax and that it is possible to grasp the different lobes of the lung with suitable forceps and bring them into the wound for examination and the performance of necessary surgical procedures. It must not be inferred, however, from these statements that lung surgery is easy or that it should be undertaken by any but skilled surgeons. Much damage was done, I am sure, during the war by too great boldness in opening the pleural cavity. In the French army the technic of chest surgery was developed to a high degree and the mortality of chest wounds was reduced from 45 per cent. under the expectant treatment to 10 per cent. under operative treatment. The dictum which prevailed in peace times, that "bullets in the tissues were harmless and should be left alone," dominated the minds of army surgeons in the early part of the war, and wounds of the chest and lungs were last to be brought under the same principles as governed the treatment of all war wounds. Infection and suppuration occurred in almost all wounds produced by high explosives and it was soon learned that early removal of dead and infected tissues, together with the infecting foreign body, would prevent the deeper penetration of infection and quickly restore the tissues to normal. To accomplish the result it was necessary to operate within 12 to 14 hours.

These methods were found applicable to wounds of the lung. In the French army, more than in any other, surgery of the lung and thoracic cavity was developed. It became the rule to remove every foreign body from the lung. Operation was undertaken in the front line hospitals under the following conditions:

1. When there was extensive hemorrhage threatening life.
2. When there were sucking wounds threatening asphyxia.
3. When there were large foreign bodies in the lung likely to cause infection.

The smaller foreign bodies producing only mild disturbance were left for removal at the base hospitals. The technique varied with the nature and extent of the wound. In all cases requiring immediate operation, the thorax was widely opened by means of resecting a rib and then using a rib spreader. In case of severe hemorrhage, the dif-

ferent lobes of the lung were seized with forceps of the sponge holding variety and drawn into view, where the bleeding vessel could be ligated or a lobe resected and sutured. There was a high mortality in these cases, 40 to 50 per cent., but under the non-interference method almost all of them died.

Lung wounds containing fragments of bone, pieces of shell and clothing were treated by removal of the foreign body through the widely-opened chest. Sucking wounds threatening asphyxia were treated by excising the infected edges of the wound and tightly closing the skin over the chest wall. It was most essential that all chest wounds be closed tightly, preventing the ingress of air. It was necessary to aspirate many of these cases repeatedly for hemothorax. In a large percentage of cases after three or four aspirations the pleural cavity would clear up and no drainage was required. In a small percentage of cases empyema would develop, requiring drainage. Major Pierre Duval of the French army reports 33 consecutive operations on the chest without a death. Not only were their lives saved, but the final results were much better.

My own experience in traumatic surgery of the chest consisted of 46 gunshot wounds; 33 of these were penetrating wounds. Only one of these died as a result of lung infection. This was a desperate case with a large fragment of shell lying on the pericardium. This was removed through a wound necessitating the resection of one rib and wide separation of the adjacent ribs by means of the Tuffier retractor. The patient died of sepsis due to gas gangrene and the streptococcus hemolyticus.

The points of special interest in chest surgery brought out by our experience in the war are: (a) That non-penetrating wounds of the chest often cause serious intro-thoracic injury—e. g., hemothorax, infarction of lung, etc. (b) The lung has great resistance to infection within its substance. Lung infection was comparatively rare. (c) In severe chest injuries, lung collapse is almost invariable. (d) Pneumo-thorax, associated with a sucking wound of the chest, is a most dangerous condition and the relief afforded by closure of the wound is instantaneous and startling. (e) Gas oxygen and local anesthesia is the best method of lessening shock in chest operations.

I shall report two cases illustrating by lantern slides the value of radiography in chest surgery:

Case 1. A. B. Age 23. Pneumonia three years ago, followed by empyema, which was drained after rib resection. Sinus did not close and he continued to run an irregular temperature.

In February, 1919, Dr. F. A. Jonas of Omaha did an Estlander, resecting five ribs. There was some improvement following this operation but the discharge continued with occasional rises in temperature. January 12, 1920, this young man came under my care, having come to California in the hope that the climate would cure him. He still was running an irregular temperature and had a discharging sinus.

The empyema cavity was filled with bismuth paste and stereoscopic X-Ray plates taken. The cavity held one ounce of paste at this time (slide 1). After the first injection, the discharge ceased but the patient did not feel so well.

In two weeks, the cavity was again filled with bismuth paste, two ounces were required to fill it. Dr. Emil Beck saw the X-Rays at this time and thought the case a suitable one for the bismuth treatment. Several more injections were made at intervals of from ten days to two weeks with considerable improvement and lessening of discharge, up to March 5th. The patient then began to complain of pain in the region of the diaphragm when the cavity was injected, his temperature began to go up and his general condition was not so good. It required four ounces to fill the cavity.

Another X-Ray picture (slide 2) showed the cavity greatly increased in size. Operation was decided upon. On March 30th the left pleural cavity was widely opened by resecting the 10th rib and portions of the previously resected ribs. A large amount of bismuth paste and pus were evacuated, several pockets obliterated by breaking up adhesions and two large pedicled flaps of skin carried to the bottom of the cavity and tacked to the thickened visceral pleura. The entire cavity was then packed with iodoform gauze. The cavity has been packed daily until the present time.

The patient has made rapid and continuous improvement and is now doing light work.

Exhibition of patient.

Case 2. Frye. Age 38. Family history negative for tuberculosis.

January 28, 1920. Developed right lobar pneumonia, crisis on eighth day. Temperature remained normal for two weeks, when he developed a pleurisy with effusion.

March 9, 1920. Entered the Pasadena Hospital, very sick. Temperature 100.2. X-Ray picture (slide 1) showed the right pleural cavity filled with fluid, aspiration showed a sero-purulent fluid. Drainage was established by the introduction of a No. 16 catheter through a trocar. Temperature dropped to 99 degrees and remained about normal for one week.

March 23. Temperature rose to 104 degrees. X-Ray picture (slide 2) showed an interlobar collection of pus, at the level of the sixth rib. This was drained by resection of the seventh rib in the anterior axillary line. X-Ray (slide 3) showed tube in abscess cavity and a new abscess forming higher up to inner side of apex of the lung and near the mediastinum. Temperature dropped to 101 degrees and remained around 101 until March 31st., when another radiograph was taken, showing a well developed abscess near the mediastinum (slide 4).

April 4th. Eighth rib was resected and a portion of the seventh previously resected. Chest cavity was widely opened so that the hand could be passed up over the apex of the lung to the mediastinal abscess. Two ounces of foetid pus was evacuated and a large drainage tube introduced. After this operation patient immediately began to improve, temperature gradually returned to normal and has remained normal since. He is now almost well.

SOME FURTHER EXPERIENCES IN THE TECHNIC, NON-OPERATIVE, PRE- OPERATIVE AND POST-OPERATIVE TREATMENT OF SUPRAPUBIC PROSTATECTOMY CASES.*

By H. A. ROSENKRANZ, A. B., M. D., Los Angeles, Cal.

Hiccough: Urologists have from time to time noticed the development of a severe post-operative hiccough, so severe, that I believe, I am warranted in employing the term—pernicious—and in considering the condition as a distinct clinical entity, one that deserves special consideration as to its

causes and treatment. I shall apply the term—pernicious hiccough—to those cases that are almost continuous and which interfere to such a degree with the patient's nutrition and sleep as to rapidly wear him out and to cause his death from exhaustion unless checked. The hiccough may or may not be accompanied by belching and vomiting. Williams, in his work on obstetrics, discusses pernicious vomiting of pregnancy under three groups: toxemic, reflex, neurotic. Observation has convinced me that all three of these causes may play a role in pernicious hiccough. I believe, however, that the most probable primary cause is pyelonephritis which causes a reflex or a toxemia, usually without uremia. I have seen patients die of uremia that did not have hiccough, and I have observed a most pernicious hiccough following prostatectomy that was not accompanied by uremia or by the retention of uremic products in the blood. In the case of an acute pyelonephritis it is reasonable to deduct that there is a more intense irritation of the kidney than is the case in a chronic or gradually developing uremia. May it not be, therefore, that this exceedingly acute irritation of the kidney is a reflex cause of hiccough, and a more frequent cause than is the irritation caused by uremic products on some other part of the anatomy. Also I believe it to be more probable that bacterial toxins in the form of a toxemia may be an important cause, of more importance than uremia. We are familiar with the varied and striking reflex symptoms produced in that acute condition known as Ditl's Crisis; also with the fact that floating kidney is a cause of asthma; so that it does not appear far fetched to attribute some of these hiccoughs to acute irritation of the kidney, and perhaps, to irritation upon the patient's anatomy of bacterial toxins rather than to the irritation produced by uremia products, since in no case of pernicious hiccough have I demonstrated uremic retention products in the blood. I have observed that a serious hemorrhage is apt to be followed by pernicious hiccough, as is also the removal of an exceedingly large prostate.

Treatment: Although the pernicious form is usually ushered in by several days of mild hiccough, if this mild form does not promptly yield to ordinary remedies, I believe that we should resort at once to the most effective measures, checking the hiccough before the pernicious stage is reached, so that the patient's strength may be kept from ebbing away from starvation, and from the exhaustion produced by constant spasmodic contraction of his chest and abdominal muscles and from loss of sleep. The patient is better able to stand heroic treatment at the relatively mild beginning of a stubborn hiccough than he is just before his exitus. All medicine and food by mouth should be prohibited and the stomach should be washed out with a $\frac{1}{2}$ per cent. soda bicarbonate solution two or three times daily. Hot compresses are of considerable value even in the pernicious form. 2000 or 3000 cc. of a $\frac{1}{2}$ of 1 per cent. soda bicarbonate plus 5 per cent. glucose solution should be administered during each 24 hours, preferably per rectum by the drip method or it

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

may be given by hyperdermoclysis split up into four doses, or may be administered intravenously. The glucose aside from being a diuretic and an antacid remedy will nourish the patient, and nourishment is as important a factor as any in supporting and keeping him alive.

Drug Treatment: I have seen 5 grs. of chloretone arrest a severe hiccough and allow the patient to drop off to sleep; I regard it as a valuable drug in this condition. In another case, however, chloretone in 10 gr. doses plus chloral in 15 gr. doses had not the slightest effect. Atropine in doses of 1/150 of a gr. every 3 or 4 hours I have found valueless. Dr. Wilbur Parker, however, informed me some months ago that by giving atropine in 1/100 of a gr. dosage every 2 hours the hiccough is stopped usually after about four injections. He continues the dosage every 2 hours until the desired result is obtained, and he has never seen a failure. This high dosage of atropine appears rather logical. Atropine is a safer drug from the standpoint of renal function than is morphine, since it causes little or no change in the amount of urine excreted, according to Cushing. Dr. Anders Peterson informs me that at the Mayo Clinic he saw hiccough following prostatectomy from time to time, that it was usually a bad sign and that the two principal treatments were morphine and prayer. On account of its inhibitory effect on kidney secretion I have heretofore refrained from giving morphine to prostatics after operation. A pernicious hiccough, however, is an acute emergency and is at times of considerably more importance than a lessening of kidney function. I do believe that surgeons have been unduly fearful of morphine in prostatectomy cases. I have given it several times lately for pain without any untoward effect. Morphine when pushed causes a rapid intermittent pulse. When this occurs it should be discontinued and strychnine and digitalis administered.

CASE 1

This specimen is that of a 72-year-old patient, who entered the White Memorial Hospital some months ago suffering with acute retention. Two-stage operation. Four days after second operation, hiccough accompanied by cloudy urine containing colon bacilli and staphylococci set up. It progressed to the pernicious stage when a 5 gr. dose of chloretone stopped it for the night and patient was troubled very little with it subsequently. There was a fourteen-day interval between operations. His kidneys function was satisfactory, and he showed no signs of uremia.

CASE 2

A retired grocer, age 78, ambulatory and in apparently good health, referred by Dr. Buehler of Whittier. Two-stage operation. The condition of his urine and his kidney function were better than in Case 1. Patient got along splendidly without the slightest gas distention or complication of any kind for four days when a slight hiccough set up which progressed to the pernicious stage in eight days. His urine became turbid about the same time that his hiccough set up, but aside from the pus and bacteria he put out between 1800 and 2000 cc. of good urine daily. His blood pressure was normal. His daily maximum temperature remained about 100.3. The Murphy drip and hyperdermoclysis were resorted to repeatedly, using the soda and glucose solution. After about eight days, however, the hiccough was almost continuous, patient was

getting no sleep and it seemed a plain case of stopping the hiccough or of death. 1/4 gr. doses of morphine and 1/2 gr. doses of codeine were administered hypodermatically. These controlled the hiccough. During the entire course of his hiccough his mind was keen and quick, his tongue moist and normal. His pulse remained excellent until the sixth or seventh day when it developed spells of irregularity. Uremic retention products were not present in his blood.

In both of these cases and also in other cases that have come under my observation I have noticed that pyuria accompanies the onset of hiccough. Whether the infection is an ascending or descending one I do not know. I rather believe that the pyuria is caused by a pyelonephritis, the resulting pyelonephritis, however, being not severe enough to cause a uremia. Both of the aforementioned patients made uneventful recoveries after the hiccough was stopped.

Catharsis: Pre-operative treatment is inaugurated by several large doses of castor oil taken several days apart. Castor oil is the least irritating of the oil purgatives and one of the most efficient. I once operated upon a patient who responded pretty well to pre-operative catharsis, but who did not do well after operation. Energetic purgative measures proved that in spite of his good daily bowel movements his intestines had remained clogged. Since then I do not take chances but insist on what may seem to be a rather drastic initial purgative at the commencement of pre-operative treatment. Cathartics are given in the morning before breakfast so that the bowels may be moved before the patient goes to sleep for the night. By giving the medicine at this time we will not assist the tendency that some patients have of turning their days into nights, and their nights into days. A cup of flaxseed tea made as follows is administered every morning an hour before breakfast, if the patient will tolerate it, and most of them do: A tablespoonful of flaxseed is boiled for three minutes in sufficient water to make a teacupful of tea when strained. This tea is a far better lubricant than liquid petroleum, is more soothing to the bowels and assists in the correction of gastric hyperacidity. In addition it is soothing to the genito-urinary tract. The patient is given from one-half to a teaspoonful of fluid extract of cascara sagrada one-half hour before meals. If the patient needs an appetizer and there is any contra-indication to elixir of iron, quinine and strychnine, I add compound tincture of gentian to the cascara. On the morning of the day before operation patient receives a dose of castor oil supplemented by an enema at night. On following morning the bowels are again flushed.

Diarrhea: I have had three cases of very persistent diarrhea occurring during the pre-operative or post-operative treatment. Bismuth subnitrate had no effect. These diarrheas could only be checked by large doses of laudanum. Kelly and Burnam describe a toxemic diarrhea and I would place these under that class.

Anesthesia: I still prefer spinal anesthesia because (1) it lessens the danger of hemorrhage as I shall point out later; (2) because it lessens the danger of uremia; (3) because it gives the most

complete relaxation; (4) because it does not irritate the kidneys, thereby making them a locus minoris resistenciae for infection; (5) because it prevents ether pneumonia. Several weeks ago I lost my first patient from an ether pneumonia. He died on the third day following operation.

Rise in Temperature: I have found four common causes for fever after prostatectomy. First and foremost, constipation which should be relieved by castor oil; (2) an infectious focus in the pre-vesical space; (3) pyelonephritis; (4) flaring up of some old focus of infection such as fistula in ano.

Potency: I have had but one case that complained of impotency following operation. In the other cases that I have checked, the sexual function remained unimpaired or was somewhat improved.

Bladder Neck: On two occasions I have opened the bladder following prostatectomy for conditions not related to the prostate; on one occasion six months afterwards, and on another two months afterwards. In the former case the internal sphincter was perfectly closed and as smooth and round as that of a baby, although it was somewhat loose and admitted the finger more readily than if it had been surrounded by the solid prostatic tissue. In the second case there was hardly any irregularity of the bladder neck, and in neither case was there that pouch that some investigators have shown by X-ray may occasionally follow suprapubic prostatectomy. The clean-cut findings in these two cases indicate to me that if the prostatic tumor is completely removed together with the oftentimes dilated prostatic urethra above the veru montanum, it is unlikely that a pouch will remain. If, however, this dilated portion of the urethra is left in situ or if the tumor is not removed in its entirety, or if a retention catheter is not left in place for a sufficiently long time to serve as a mold for the new urethra, it is easy to conceive that a small pouch might develop between the two sphincters.

Adhesions at the Bladder Neck: I have never had to pass a sound or dilating instrument following suprapubic enucleation of benign tumor of the prostate. One of my friends has had the bladder neck grow together, shutting off the bladder entirely from the urethra, in two cases. This surgeon, however, allowed his cases to heal up without a catheter in the urethra, depending upon the suprapubic tube. Some surgeons who have experimented with bizarre and incomplete operations in which they have allowed to remain in situ strictured portions of the prostatic urethra have been annoyed by post-operative constriction and have had to re-operate upon their cases. In connection herewith may I not contradict the oft-repeated assertion that stricture of the prostatic urethra does not occur? I have encountered fully twenty-five well-marked cases of it.

Ejaculation: Although I have not made a complete canvas I have a record of fourteen patients who ejaculate normally—that is, the ejaculation does not back-fire into the bladder.

Focal Infections: I consider it to be of prime importance that the patient be relieved of focal infections before operation. The lack of resist-

ance produced by operation has a tendency to cause flare-ups of these foci so that they may endanger the life of the patient or seriously complicate his convalescence. Fistula in ano, abscesses, bad teeth, etc., should be corrected before prostatectomy.

Nursing: In order to facilitate water drinking, I suspend a bottle of water with a glass straw protruding from it from the head of the patient's bed so that the bottle leans against his pillow and the straw can be grasped by the patient's lips by the patient merely turning his head.

Suprapubic Wound: I am satisfied that the frequent application of silver nitrate or tincture of iodine retards healing of the wound. The only suprapubic fistula that I have had occur following prostatectomy developed several months ago and persisted for two months. The nurse had touched him up daily with tincture of iodine. On excising the fistula I found imbedded within the recti muscle and its sheath five or six chunks of bone. I believe, however, that these osseous particles which averaged about one-half inch in length existed prior to the operation. In spite of the large stiff walled cavity that was left behind following the radical excision the wound closed in eight days.

One-stage Operation: I prefer the one-stage to the two-stage operation in most cases, because (1) healing has been more rapid; (2) the suprapubic tube can be sewed in more watertightly than in the two-stage, in which case the bladder and muscle have grown together in one layer; (3) there is less danger of tearing into the peritoneum which has grown into the scar of the first operation. In doing the first-stage operation the suprapubic tube should be brought out of the bladder as high up as possible in order that it may keep the peritoneum back from the pubis. Otherwise it is difficult to avoid tearing into it at the second operation. I prefer the two-stage operation principally in two conditions: (1) bladder calculus, (2) acute retention. I believe that much of the recent popularity of the two-stage operation is due to the fact that its advocates previously operated without adequate catheter drainage.

In my previous paper I advocated a suprapubic catheter introduced by trocar. Since, however, this procedure has interfered with filling the bladder at the major operation I have discontinued it. I find the urethral catheter a handier method and on the whole more agreeable to the patient. It should be changed every other day.

Pre-vesical Drainage: For several years I did not drain the pre-vesical space. It seemed an unnecessary procedure. Recently, however, I have had to attribute a serious infection to this lack of drainage, so that I place two sections of perforated No. 16 rubber catheters in the space after the method of Thomson Walker.

Incontinence: I have had no case of incontinence with the exception of the one that I reported at Coronado four years ago. This patient had had an incomplete perineal prostatectomy. I removed an unusually large prostate together with a very large stone suprapubically three years later. Considerable sloughing followed. Several weeks ago this patient returned to me suffering from a perineal abscess at the site of his perineal opera-

tion. He no longer wore a urinal and was engaged in active work, so that I may now claim to have no case of incontinence following suprapubic prostatectomy.

Cancer: The last word has not been written regarding the advisability of operating suprapubically on cancers of the prostate. After a number of unsatisfactory experiences I desisted from operating upon them. In a number of cases, however, I have come upon them unawares.

Case 1: About fourteen months ago I removed the prostate of a 72-year-old man. It shelled out with some difficulty, being very tightly adherent to the rectum from which it had to be cut off with a scissors. The laboratory diagnosis was scirrhous carcinoma with beginning adenocarcinoma. For about two months this patient was troubled with contracture of the bladder neck and I had to dilate him about once every fourteen days. At present he is quite an active individual and has comparatively little discomfort. Several weeks ago he made an automobile trip of 800 miles.

Case 2: This specimen is that of a 75-year-old gentleman, whom I operated upon two years and three months ago. I wrestled with this fellow's prostate for one-half hour. It was exceedingly hard and, although I managed to loosen up several pieces of it, I succeeded in removing only one piece one-half inch in diameter and one and one-half inches in length. I expected to see the patient go down-hill rather rapidly. On the contrary, he soon healed, and the pieces of prostate that had been loosened up gave him no inconvenience. I met him on the street occasionally during the following eighteen months and he always assured me that he was in good shape. A month ago I received a letter from his family physician telling me that the patient was not bothered by urinary symptoms and was in good health. The pathological diagnosis by Dr. Evans of Loma Linda was that of a rather malignant carcinoma. These two cases are, however, the exceptions. Both were having a good deal of difficulty and pain in passing their urine before operation, and have been markedly benefited since.

The experiences in the two cases narrated above show that much good may be accomplished by doing a partial prostatectomy or as complete a prostatectomy as may be readily performed upon cases that have slowly progressing malignant conditions. The diagnosis of these slow cases may be difficult. In my experience they are in the minority. I do believe, however, that we are justified in doing partial suprapubic prostatectomies upon all malignant cases that have annoying bladder symptoms and that are in fair general health. My experience in operating upon a series of about thirty malignant prostates prior to 1917 was not satisfactory. My procedure was too radical. It is idle to attempt the removal of infiltrating growths. Moreover, the shock not infrequently kills the patient and grave accidents may occur. No surgeon has up to the present time convinced me by his results that a radical operation upon malignant prostates is anything but meddlesome and dangerous to the patient, and in some of the so-

called most successful cases of radical operation for cancer of the prostate I have observed that permanent urinary incontinence has occurred. I would emphasize that in a fair percentage of cancer cases we may do the patient a great deal of good by a partial suprapubic prostatectomy, and without taking a chance on doing him any harm.

Hemorrhage, although a rare occurrence, I have observed more frequently in the two-stage operation than in the one-stage. There has been considerable literature lately regarding the prevention of hemorrhage. I did not have a hemorrhage until I discontinued spinal anesthesia several years ago, but since then I have had four or five. I discontinued spinal anesthesia because I could not obtain a standard effective chemical product. Ether is more liable to cause hemorrhage because (1) it raises the blood pressure. Spinal anesthesia lowers it; (2) contracture of the bladder musculature begins as soon as the patient comes out of the ether anesthetic, but after spinal, the bladder muscles remain quiescent for quite some time after the operation. Whenever I have removed an unusually large prostate, or whenever there is quite a fair amount of hemorrhage at the time of operation, which is not checked by two hot packs with pressure, I pack the entire bladder very tightly AT ONCE with a large dry roll pack and insert no drainage tube. It is better to have the patient's blood in his blood vessels than on a lot of sponges. I do not pack the prostatic pouch and have had no secondary hemorrhage on removing the pack or thereafter. Beginning about five hours after operation I remove a portion of the pack every four hours, usually withdrawing the tail end after about 36 to 48 hours have elapsed. A suprapubic tube is then inserted for a few days, after which a catheter is placed in the urethra, thus permitting the suprapubic wound to heal. This catheter is removed after the suprapubic wound has been water-tight for four days.

Since Kummel first advocated suturing the bladder neck to prevent post-operative hemorrhage I have been curious regarding the practicability of the technic. I am satisfied from my own experience that the procedure is either dangerous, impractical or unnecessary. A real live hemorrhage will so obscure the field of vision as to make accurate suturing most difficult at times, and the patient may lose so much blood during the search for the bleeders as to cause him to die from shock, or to develop infection due to his lowered resistance. The incision that I make in the bladder is just large enough to permit withdrawal of the tumor.

CONCLUSION

I would like to emphasize the following named points: (1) The recognition of post-operative hic-cough as a potentially serious condition, and the importance of checking it promptly with the most effective measures before the pernicious stage has been reached. (2) Catharsis: The high efficiency of castor oil; the advantage of administering cathartics before breakfast and the value of flaxseed tea. (3) The advantages of spinal anesthesia. (4) The necessity of removing extra urinary foci of infection before prostatectomy. (5) The free-

dom following suprapubic prostatectomy of such complications as adhesions or distortions of the bladder neck, impotency and urinary incontinence. (6) The advantages of the one-stage operation in selected cases. (7) Cancer: The large amount of continued relief afforded by partial suprapubic prostatectomy. (8) Hemorrhage: The disadvantages of suturing the bladder neck and the advantage of prompt and thorough packing of the entire bladder.

POST-MATURITY OF THE FOETUS.*

By NORMAN H. WILLIAMS, M. D., Los Angeles.

The terms, foetal prematurity and postmaturity, being purely relative ones, are rendered difficult of definition by the fact that by the term "maturity" we have no definite standard. There are, however, certain signs that determine this condition we speak of as "maturity," and, if these are not developed we speak of the condition as "prematurity." On the other hand, there is, I believe, a growing belief in the profession, though hardly recognized by the laity, of a development of the foetus beyond which the term maturity cannot correctly apply and the relative term "postmaturity" is the proper one. In other words, "maturity" is a condition of development of the foetus, extending over a limited period of time, during which, for the best interests of the foetus as well as those of the mother, the former should begin its extra-uterine existence. Postmaturity is the subsequent over-development of the mature foetus and is characterized by exaggerated signs of maturity, as, for instance, excess in length and weight, increased amount of ossification, narrowing of sutures, excessive circumference of the head and general lack of moldability.

The apparent dangers of this condition are doubly serious, affecting as they do both mother and child. On the part of the child there is frequent mortality, either primary or secondary, chiefly the result of asphyxia, prolonged and excessive cerebral compression and injuries from instrumental delivery. With less severe injury there is permanent or temporary morbidity from fractures of the long bones, paralysis of the cranial or spinal nerves, fractures of the skull, cerebral hemorrhage, cerebral compression, cephal-haematoma, epilepsy and mental deficiency.

The maternal results depend upon the amount of disproportion between the child and maternal pelvis. The mother may die either immediately from ruptured uterus, post-partum hemorrhage or exhaustion, or later from sepsis. The lesser injuries often leading to lifelong invalidism are numerous: "Over-distention of the abdomen often leaves weakness of the abdominal walls with vice-roposis; the urogenital septum is always torn, and prolapse of the urethra and anterior vaginal wall occurs, the patulous vulva opening the way for infectious catarrhs of the bladder and of the cervix, and chronic metritis; laceration or over-stretching of the pelvic floor is an almost invariable occurrence in greater or less degree, inviting prolapse of the uterus—these are some of the in-

evitable consequences of labor." Added to these are pressure necroses, fistulae, uterine atony with excessive bleeding, rupture of the pelvic bones and joints, any, or a combination of which may arise from the dystocia caused by an over-developed child.

This condition is the result of certain factors influencing, firstly, the length of gestation and, secondly, the size of the foetus. As yet we have no means of knowing the exact length of human gestation. Our knowledge of ovulation, menstruation, the date of fruitful coitus, the period of time elapsing between a fruitful coition and the time of fertilization of the ovum is as yet meager and unreliable. Taking our most reliable datum from which to estimate the onset of pregnancy, namely, the date of fruitful coition, as a basis for reckoning the duration of pregnancy, we find that a normal pregnancy may vary from 220 to 330 days. Doubtless foetuses, as children after birth, vary in their rate of development, some requiring a longer and others a shorter period of time for sufficient development to withstand extra-uterine life. DeLee writes that he has delivered children carried through an eight-months' pregnancy that were as fully matured as full term infants, and, also, in one case, figuring as accurately as possible, he delivered a child weighing $3\frac{1}{2}$ pounds which was fully three weeks over term. There are other factors that seem to influence the length of gestation, as, for instance, parity; primiparity being conducive to shorter gestation; the age of the mother, gestation in the young being shorter than in those older; sex of the child, males are said to be carried longer than females; lack of exercise during the latter months of pregnancy may increase the duration of gestation, and vice versa; possibly heredity plays a role.

As has been noted, the size of the mature child may vary within rather wide limits, both as regards weight and length, weight being an especially variable factor, length a much less one.

The foetus may be stunted or under-developed as a result of disease of the mother or by disease of the placenta; it may be larger by virtue of excessive size of the parents, as a result of good mental and physical hygiene on the part of the mother during gestation, multiparity and prolonged gestation. The size may also be influenced by the action of the ductless glands of either the mother or foetus.

DIAGNOSIS

From a practical standpoint this question of postmaturity of the foetus resolves itself into the diagnosis of maturity, and the prevention of this foetal over-development, thereby avoiding the aforementioned dangers to both mother and child. The diagnosis of the condition, when it has actually arisen, is often not difficult to make by the history of a prolonged gestation, a large protuberant belly, the disproportion between a larger unyieldable head with narrow sutures, comparatively small fontanelles and a comparatively normal pelvis. On the other hand, to make a diagnosis of maturity, avoiding in the one instance a possibility of a premature condition and on the other of over-development, is a matter of much greater skill and

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

practice and requires the utilization of every available means for its determination.

During the past two or three decades physicians have more and more come to realize the utmost importance of pelvimetry, so that at the present time every well-trained accoucheur makes practical use of it in all cases. On the other hand the relative importance of mensuration of the foetus in utero has not had proper recognition; to be sure it has not yet attained as high degree of accuracy as pelvimetry; still, as it is becoming more and more used, the accuracy is becoming more exact. For information regarding the size of the foetus it cannot be disregarded. There is little use in knowing the exact size of the pelvic canal if there remains little knowledge of the size of the foetus that must traverse this canal. A small mature child may pass through a fair degree of pelvic contraction with much less dystocia than a large child causes in passing through a perfectly normal pelvis. In short, knowledge of the relative size of the pelvis and foetus in a given case is of decidedly greater importance from the standpoint of both mother and child than a knowledge of the exact pelvic measurements alone.

Various methods have been devised whereby the size of the foetus may be determined, all of which are corroborative, none of which is absolute.

On the basis of there being a fairly constant relation between maturity and the length, rather than between maturity and the weight of the foetus, efforts have been made to establish a means for determining the exact length of the foetus at various periods during gestation, particularly during the latter weeks. Perhaps the most dependable is that of Ahlfelt. His method is based on the fact that the foetus at full term is 50 cm. in length, developing after the fifth month at the rate of .9 cm. each week. He showed that the true length of a child is twice the distance from the vertex to the buttocks in the position normally assumed in utero. In other words, by measuring with a pelvimeter from the upper border of the symphysis to the uppermost point of the buttocks as palpated and measured through the abdominal wall, then subtracting 2 cm. to allow for the thickness of the abdominal and uterine walls, and multiplying this result by two, he obtained the calculated length of the foetus in utero. The results of this method, though not always accurate, are sufficiently so to be practicable in a large percentage of cases. Reed, in a series of a hundred cases found it varied less than .5 cm. in 61 per cent.; in 90 per cent. the measured and actual difference did not exceed 1.5 cm.

This method has more recently been modified by Thoms as follows: With patient in the lithotomy position, an examining finger is placed against the presenting part (either rectally or vaginally) in line with the long axis of the foetus. Measurement is made with the pelvimeter from the uppermost part of the foetal buttocks through the abdominal wall to any easily available point on the examining hand outside the vulva. The examining hand is now withdrawn and the distance from tip of finger to the point where the pelvimeter rested is measured. This reading is sub-

tracted from the former reading, thus obtaining the distance from the vertex to buttocks after deducting from $1\frac{1}{2}$ to 2 cm. for thickness of the walls. This result is multiplied by 2 as in Ahlfelt's method.

McDonald's method for determining maturity is based upon his claim that the fundus at term should be 35 cm. (as measured by a tape) above the symphysis. The degree of maturity may be determined by dividing the height of the fundus by 3.5 cm., thus giving the months of foetal development. For various reasons this method, though corroborative, is not as reliable as that of Ahlfelt. The size of the uterus is influenced by various factors other than the actual size of the child, as, for instance, the size of the mother, the amount of liquor amnii, or obesity of abdominal wall.

Perret's method is the estimation of the size of the foetal head and is based upon the fairly definite relationship existing between the occipito-frontal and biparietal diameters. Measurement is made of the occipito-frontal diameter as it lies across the pelvis. The biparietal diameter is obtained by subtracting 2.5 cm. from the occipito-frontal diameter. A 2.5 cm. deduction was made for the thickness of the uterine and abdominal walls, but Stone claims this deduction made unnecessary inaccuracy. Stone modified the method by deducting, instead of 2.5 cm. from the occipito-frontal diameter, an amount determined by a sliding scale which varies as the occipito-frontal diameter varies, varying from 1.5 to 2.5 cm.

Reed in 85 cases reports that he found by this method he could determine 36 per cent. *accurately* as determined by post-partum measurement, and 93.5 per cent. less than .5 cm. I think this is higher than is obtained by most other observers. The difficulty in getting an accurate occipito-frontal measurement, the varying thickness of the uterine and abdominal walls, the changes in the foetal head as a result of labor, the unreliability of post-partum measurements as standards for comparisons, all tend to make the method at best only corroborative.

The X-ray has not been made practical as a means of diagnosing prenatal maturity. Hess and others have studied the development of the foetus as shown by X-ray, the work having been done on the foetus after birth; for obvious reasons, however, an intra-uterine study has been most unsatisfactory.

The prevention of this condition of postmaturity and its evil consequences has come to lie in two methods of procedure; namely, regulation of the nutrition of the foetus and induction of labor at a time most propitious for the welfare of the mother and child.

The former method, that of controlling the nutrition of the foetus, is decidedly unsatisfactory. In an excellent study of the subject Ehrenfest of St. Louis has rather conclusively shown by clinical observations, by biological survey, and by experimentation, that the size, owing to the parasitical nature of the foetus, can be influenced little or none by dietetic measures during pregnancy if by size we think in terms of centimeters, instead

of pounds, in general skeletal development and weight and length combined. Size, in this sense, is probably regulated by the glands of internal secretion, race heredity, age of the mother, plurality, duration of pregnancy, sex of the child, and early puberty of the mother. Weight alone is dependent, for the most part, upon the amount of fat; this can doubtless be regulated to some degree by diet, hence the basis for argument used by Prochownik and his advocates.

The second method is by induction of labor. During the past few years we have noticed an increasingly strong attitude on the part of many medical men towards "Obstetrics by Appointment," with no attempt at selection of cases. As such, I believe the term "Obstetrics by Appointment" has been unnecessarily abused. However, in carefully and well selected cases I must believe that the procedure is not only justifiable but a duty of the physician in charge in his effort to reduce morbidity and mortality.

By a careful study of each case and a prenatal estimation of the size of the foetus by the various methods described, remembering that no one is perfect, but all corroborative, sufficient skill can be attained to enable one to determine rather accurately the development of the individual foetus in question.

In a series of 21 inductions for this purpose out of about 200 cases I have had no child larger than 50 cm. weighing 8 pounds 3 ounces, and no child smaller than 47 cm. weighing 6 pounds 3 ounces. This last was that of primipara having a funnel pelvis that was sufficiently small to cause dystocia in case of a large child.

The method of induction has been by use of the Voorhees hydrostatic bag, using No. 4 in all cases. Castor oil is usually given an hour or two before the induction. If labor is tardy in coming on, pituitrin in two minim doses is given and repeated every half hour as long as is necessary to definitely institute labor; there is seldom, however, any delay in the onset of labor after the introduction of the bag.

The bag is usually inserted without the use of an anesthetic; if, however, the patient be a nervous and irritable one, nitrous oxide is used, though only to the point of analgesia.

I do not advise the use of a hydrostatic bag without a keen realization of the complications occasionally associated with it. In my induced cases I have had one case of retained placenta and one of prolapsed cord. Whether these were in any way the result of the induction of premature labor, I am not prepared to say. Prolapse of the cord is a condition that occurs rather infrequently without the use of the bag and very seldom with it. DeLee in his experience has had two cases, thus showing the infrequency of it.

In this paper there has been no attempt at originality; it is only a plea for the reduction of the excessively high morbidity and mortality, both infant and maternal, in so far as postmaturity may be a factor in their cause. Let foetal mensuration be practiced as diligently as is pelvic mensuration and the time for labor be as accurately determined as possible by the maturity of the foetus, not by

a guess on the part of the mother as to the duration of her pregnancy.

References.

- DeLee: "Principles and Practice of Obstetrics." Ehrenfest: Amer. Jour. of Obstetrics, Vol. LXXX. Oct. 1919, p. 441.
 Foulkrod: Amer. Journal of Obstetrics, Vol. LXXIX. April 1919, No. 4, pp. 550-558.
 Frank: Arch. J. Gynaek, Vol. XLVIII.
 Hull: Amer. Journal of Obstetrics, 1919, Vol. LXXIX. No. 3, pp. 356-360.
 Maxwell: Amer. Journal of Obstetrics, Nov. 1919, Vol. LXXX, No. 5, pp. 497-506.
 McQuarrie, J. G.: Journal A. M. A., Vol. LXXIII, 1919, pp. 1574-1576.
 Murlin: Amer. Journal of Obstetrics, 1917, Vol. LXXV, p. 913.
 Prochownik: Zentralbl. für Gynaek., 1889, Vol. XXXIII, p. 577.
 Prochownik: Therapeut. Monats-Hefte, 1901, Vol. XV, p. 387.
 Reed: Surg. Gyn. and Obstetrics, Aug. 1918, Vol. XXVII, pp. 163-168.
 Reed: Surg. Gyn. and Obstetrics, Mar. 1916, Vol. XXII, pp. 294-297.
 Sendykowski: Inaugural Dissertation Universität, Würzburg, 1879.
 Smith: Lancet, 1916, Vol. II.
 Wright: Amer. Journal of Obstetrics, 1909, pp. 280-284.

LOW HAEMOGLOBIN IN OUR SURGICAL CASES.*

By WILLIAM H. GILBERT, M.D., Los Angeles, Cal.

Few of us go into a surgical operation without a careful examination of heart, lungs and kidneys.

Comparatively few make a careful blood examination in order to get a line upon the true reconstructive forces of the body. Physical appearances are often deceptive, and it is not unusual for a healthy appearing individual to present a blood picture far from the normal standard. I am satisfied, after trying out a routine blood study of all surgical cases, that it is a wise course to pursue. Of the routine blood examinations, we shall consider in this discussion only the relationship of haemoglobin to the operability of surgical cases.

The question often arises, "How low must the blood be in haemoglobin to prevent surgery?" Is there a hard and fast rule to follow? Those of you who have been compelled to operate with a percentage of haemoglobin lower than 40, will say that it is mighty close to the danger zone. Lower than this is "no man's land" and, while cases frequently cross the danger line and return in good shape, some fail to come back. No arbitrary rule, however, can be established.

Cullen reports recovery after a major operation in a case as low as 20%; and another successful case as low as 17%. These are exceptions and should not lead one into indiscriminate surgery. Far better to raise the haemoglobin by controlling the hemorrhage; by transfusion; by forced feeding; and by such other medication as will bring the haemoglobin up to, or approximate, the safety line.

The causes of low haemoglobin, and its treatment, are so closely allied that it is wisdom to consider cause and treatment together. Every case of low haemoglobin needing surgery is in a class by itself, and must be so considered. We will not consider them in the order of frequency but rather along certain clinical lines.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

Retained placental tissue or any of the products of conception play an important part in many of these cases. Frequently we see them with a percentage as low as 20%. The percentage of haemoglobin should be determined because of the disturbance in the balance of power, as pertains to infection. They do very well if not infected. Once the immunity balance is lost, infection plays a very strong lead and the patient succumbs rapidly.

It is wisely advised that hemorrhage is the only indication for interference in cases of incomplete abortion. Much has been said and written about whether or not to curette. Harm can be done by the use of the sharp curette, or rough treatment and trauma. The majority of these cases come to us with a soft, patulous cervix and an open os. It is not difficult, nor should it require great manual dexterity carefully to dilate the canal, and with blunt forceps gently remove any foreign body within the uterine cavity.

The other type of low haemoglobin in this classification, is found in the woman whose uterus has not emptied itself. The cervix is long, cone-shaped, and the canal partly dilated. Hemorrhage is often terrific. The uterine cavity fills with blood, the haemoglobin falls rapidly, and all of the indications point to a speedy emptying of the uterus by operative interference. The handling of this type is a very different and serious problem. If one tampon, and pursue a policy of watchful waiting, he may see the fires of infection gather volume. On the other hand, forcible dilatation and delivery have their danger of trauma. Like the rest of you I have tried all of the methods in use. Of recent years I am coming more and more to the belief that in Pituitrin we have a valuable remedy. It is surprising how a gentle dilatation of the cervical canal followed by an ampule of Pituitrin, will effectively empty the uterus. Truly has it been said that Pituitrin is the medical curette.

Tubal rupture is a common cause of low haemoglobin. While it is true that the proper time for operation is before rupture, we see cases frequently after rupture has occurred and some of them have bled to a point bordering on fatal exsanguination. I remember operating a case successfully, when the haemoglobin had dropped to 25% in eight hours. It had been diagnosed appendicitis with rupture, and only a demonstration of a rapidly falling haemoglobin convinced the attending physician that it was a ruptured tube.

Transfusion is of the greatest importance in raising the haemoglobin and should be resorted to whenever possible.

In looking over my records, I find eight cases of successful operation for tubal rupture with low haemoglobin ranging from 25 to 40%. I also note one fatal case of extra-uterine pregnancy with haemoglobin down to 32%. Two months after this patient's regular menstruation she had a slight bloody vaginal discharge. This continued off and on for about two weeks and stopped. One Saturday night while in her bath, she was

taken with a violent pain in her left side and became dizzy and faint. She was assisted to bed and in a short time the pain subsided and she fell asleep. She awakened in the night feeling sick at her stomach and very cold. She became worse rapidly, and at noon I had the opportunity of observing her, just fourteen hours after the first sensation of pain.

It is needless to go further into the clinical picture. She was removed to the hospital and prepared for operation by transfusion, etc. She rallied in fairly good shape, but vomiting persisted and post-operative peritonitis developed from which she died on the fifth day. The low haemoglobin in this case was not the direct cause of death. Had she obtained early diagnosis and early operation the chances for fatal post-operative peritonitis would have been reduced to a minimum and, in all probability, her life would have been saved.

Practically all bleeding myomata have low haemoglobin. I find that I have had thirty-two cases with records of haemoglobin ranging from 10 to 60%. I recall one case that came into my office with a percentage as low as 25. I recall another case down to 10% which died because it was impossible to stop the bleeding or bring the haemoglobin to a point where she had an operable chance for her life.

As is well known, the location and not the size of the growth has every thing to do with the amount of hemorrhage. Myomata, of large size, as long as they do not encroach upon the cavity of the uterus, may be located within the uterine walls without hemorrhage. It is the sub-mucous type, large or small, bulging and ulcerating into the cavity of the uterus, that causes bleeding. These cases, if haemoglobin is not too low, are very favorable for operation. Hysterectomy, either vaginal or abdominal, is well borne.

Three of my cases of low haemoglobin were due to adenomyomata of the uterus. Here we have a diffuse myomatous thickening of the uterine wall. The cavity of the uterus presents an irregular surface, the uterine mucosa passing into the crevices of the growth and the walls are sometimes filled with clearly outlined myomatous nodules. These cases bleed profusely at menstruation, with much pain. As a rule there is no inter-menstrual bloody discharge, although the period of menstrual bleeding is prolonged. The haemoglobin, as a rule, never reaches the very low point in these cases and they are good subjects for operation.

I have had a few cases of low haemoglobin in hyperplasia of the endometrium. These patients are generally between the ages of thirty-five and forty-five. They flow painfully and profusely during menstruation but have no inter-menstrual discharge. This condition gradually gets worse until a curettage is resorted to. Immediately, improvement takes place, which lasts from three months to a year, when they again start upon the same old order of symptoms.

A study of the endometrium shows it very much thickened, its surface often smooth, or it

may be studded with polypoid growths. Some of the uterine glands are enlarged, others smaller. The stroma is more cellular and the veins are very much dilated, forming sinuses, which may be filled with organized thrombi.

This condition is not necessarily limited to the middle-aged woman. It is occasionally seen in young girls. And, with these symptoms, hyperplasia of the endometrium should not be forgotten, especially if the percentage of haemoglobin be low.

Haemoglobin lower than 40% in cases of cancer, whether in the cervix or fundus, is a very bad prognostic sign.

One cannot too strongly emphasize the necessity of closely studying the cause of every bloody discharge in women around the menopause. This is especially true if this discharge be accompanied by a falling haemoglobin barometer that cannot be raised by proper treatment.

Those of you who have had the sorrowful experience of cancer returning after a radical operation realize the importance of early diagnosis. Those of us who are fighting cancer located in the uterus are much more fortunate than the internist. We can, for the purpose of pathological study, curette a suspicious case or remove a small section of suspicious tissue. It is little short of neglect, and is often suicide for our professional egotism, if we fail to do so. The report of a competent pathologist need not be taken with a grain of salt.

When cancer has advanced to a stage where the vagina is filed with a stinking, sloughing and bleeding mass, the haemoglobin down to 20 or 30%, the diagnosis has been postponed to a point where the operability and complete cure—to all practical purposes—has passed beyond the realm of surgery. Deplorable and hopeless as this condition is, it continues to exist in spite of all that has been said and written. Nor can we say, truthfully, that the error is entirely the fault of the unfortunate sufferer.

Quite recently a case walked into my office which for six months had been under treatment for "ulcer of the womb." The entire lower segment of the uterus had been destroyed and general metastasis had taken place. What a gloomy future to contemplate! Those of you who have had this experience realize how hard it is to tell the family, if not the patient, that she is rapidly approaching the exit and that it is only a question of time until the curtain will be lowered.

Early diagnosis of such cases is materially aided by a study of the haemoglobin. A steady fall in the barometer, which treatment does not relieve, a bloody discharge and a suspicious lesion in the cervix, call for immediate removal of a small section of tissue or the curettement of the uterus. The specimen, or scrapings, should then be examined by a competent pathologist. These cases, if operated upon before general or constitutional cancer sets in, invariably do well. In fact, 80% of all cases of cancer can be cured if taken in time.

Transfusion or the use of the X-ray is of

little assistance in preparing these cases for operation. The sooner a radical operation is made—providing, of course, that the case is suitable for operation—the better the prognosis for immediate recovery and no recurrence of the cancer.

We might allude, at this time, to abdominal carcinosis. When this condition exists there is always unusual lack of resistance to infection. It seems that when cancer becomes more or less general in the abdominal cavity and is no longer limited or confined to a certain organ, that the disturbance in the balance of power in immunity is very marked. The patient succumbs rapidly to infection and one should, where an exploring operation is made, do so with the greatest respect for a sepsis, trauma and the diffusion of cancer. Cancer, of course, in any of the organs always lowers the percentage of haemoglobin.

It is surprising how many cases of pelvic inflammation have low haemoglobin. It is no unusual thing to mistake a one-sided pelvic inflammation for a tubal pregnancy. I presume that most of us have opened the abdomen expecting to find a tubal pregnancy and have found pus tubes, large cystic ovary, hydro-salpinx or a general pelvic inflammation with adhesions. Generally the history of an infection, a blood-count, and elevation of temperature in the acute cases, will clear up the diagnosis. I find one case in my records with a haemoglobin as low as 25%. Long continued absorption from a septic pelvis had produced exsanguination as effectively as if there had been a bloody discharge. These cases do not behave so well, especially if the balance of power in immunity has been destroyed. Many of them have other pathological lesions in the kidneys, heart and liver, and, even if recovery is made from operation, the remote effects are jeopardized. Whenever possible, if the haemoglobin be lower than 40% they should be placed upon a highly nutritious diet and the vitality brought to a point where the operative chances for recovery are vastly improved.

In considering this subject many factors other than the ones I have mentioned reduce the percentage of haemoglobin. I might allude to hemorrhoids. Surprising how often they are the disturbing factor, and no case of low haemoglobin of mysterious origin should be treated without carefully inspecting the anus, rectum and colon.

I have had two cases of ulcer of the stomach, without hemorrhage, with haemoglobin lower than 40%.

It is wise to look to the haemoglobin in our pregnancy cases. One case I recall to mind was reduced to about 50%. Menorrhagia with low haemoglobin dependent upon a deficiency in thyroid and ovarian secretions is quite common. It is frequently relieved by the administration of the extracts from those organs. Amenorrhoea and retroposition of the uterus are frequently accompanied by low haemoglobin. Pulmonary tuberculosis, or tuberculosis of any of the organs, is often accompanied by the same condition. Ovarian cyst, chronic ulcer of the cervix, chronic interstitial nephritis, mitral insufficiency, abscess of the

ovaries and in the pelvis, prolapsed rectum; in fact, many other factors are causes in the existence of low haemoglobin.

What conclusions can one draw as to the operability and preliminary treatment to be employed in these cases?

First: All cases lower than 40% should be carefully considered before operation, with the object of determining how best to raise the percentage.

Second: While these cases usually do well, the occasional death can be prevented by appropriate treatment before operation.

Third: Hemorrhage should be stopped if possible. Best means of doing so is by the use of the X-ray, curettage and packing.

Fourth: Every surgeon should familiarize himself with transfusion and have a suitable number of donors on hand upon whom tests have been made and the proper grouping determined.

Fifth: When cancer exists it is practically impossible to raise the haemoglobin to any great extent, or, if it be raised, to keep it up any length of time. If the hemorrhage is practically limited to menstrual bleeding, the operation should be postponed until a few days before the period in order to raise the haemoglobin as high as possible.

Sixth: These cases should not be given vigorous cathartics immediately before the operation or immediately after.

Seventh: Large quantities of water should be drunk during twenty-four hours previous to operation, and 20% glucose given per rectum two days preceding the operation.

Eighth: If it be impossible to raise the haemoglobin, one can, with a clear conscience and a fair hope of success, operate when the haemoglobin is as low as 20%. Transfusion is the sheet anchor in these cases.

TEETH, TONSILS AND SINUSES.

By ROBT. B. SWEET, M. D., Long Beach.

The object of this paper is to classify diseases of the teeth, tonsils and sinuses under one heading, i. e., focal infections of the head. They have a common bacteriology, symptomatology, and cause common systemic disorders. Every examination of the head for focal infections should include all three as being but parts of a single disease.

If we can hold this concept in our minds, our examination will be more thorough, reference to either part implying a consideration of all three. It would be well if we had one term that included all three.

The teeth, tonsils and sinuses are the ports of entry, the Ellis Island, of most of the alien enemies of the body. Also the detention camps and distributing depots.

The pathogenic organisms common to the teeth, tonsils and sinuses are:

Staphylococcus, streptococcus, strepto-haemolyticus, veridans, pneumococcus, anthrax, Vincent's organisms, tubercular bacillus, influenza, diphtheria and diphtheroids, catarrhalis, cocco bacillus fetidus, mucosus, capsulatis.

Infections of the teeth, tonsils and sinuses can produce the following diseases:

Encephalitis, iritis, keratitis, ophthalmitis, conjunctivitis, dacryocystitis, rhinitis, pharyngitis, laryngitis, stomatitis, gingivitis, adenitis, Vincent's angina, otitis media, mastoiditis, sinus thrombosis, phlebitis, bronchitis, pneumonitis, pleuritis, gastritis, gastric ulcer, duodenitis, colitis, appendicitis, nephritis, arthritis, myocitis, osteomyelitis, septicemia, anemia, tuberculosis, psoriasis, erythema multiforma, lupus erythematosus, lichen planus, herpeszoster, asthma, ozena, hayfever, osteomyelitis, meningitis, choroiditis, choroiretinitis, pyelitis and cystitis.

And likewise the following symptoms:

Cephalgia, neuralgia, pains, fever, melancholia, insanity, tinnitus, lumbago, sciatica, vertigo, disturbances of blood pressure, headache (frontal, occipital, basal, temporal), pains in the head, pains in the neck, pains in the chest, pains in the back, pains in the legs, vertigo, tinnitus aurum, mental depression, decreased cerebation, loss of weight, loss of strength, loss of appetite, loss of ambition and nervous exhaustion.

How foolish then to examine the teeth and disregard the tonsils; how foolish to treat tonsils and disregard the teeth. How can a man be justified in treating any conditions of the eye, even refractions, without ascertaining the state of the teeth, tonsils and sinuses?

Teeth diseased beyond redemption should come out. Tonsils that are diseased, and all tonsils are diseased, should come out.

Dentists give us weighty papers on apical abscesses, pyorrhea, etc., and never mention the condition of the tonsils or sinuses in a given case. On the other hand, how frequently we lay all our money on the tonsils as our best bet, in total disregard of the teeth, and then wonder why all the results we have promised do not materialize.

All this suggests the necessity of team work, but it means more than the usual team work. It calls for a large comprehensive view of the whole subject of focal infections of the head conceived in one man's mind and the patient given the benefit of the judgment of one who regards infections of the teeth, tonsils and sinuses in their entirety as a single disease.

CLIMACTERIC HYPERTENSION.*

By ROLAND CUMMINGS, M. D., Los Angeles.

The Etiology of increased blood pressure is so elusive that every possible lead has been carefully considered and duly followed, it is sad to say, however, with very indifferent results. Of late years owing to the frequency in which a rise of pressure has been noted at the period of the menopause, a common factor in the causation of both the Climacteric and hypertension have been and are still being carefully studied.

The entrance into puberty and the onset of the menses are ushered in by the ripening of the ovum and the formation of the corpus luteum. The metabolic changes which take place in the organism of the developing woman are believed

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

to be due to the effect of certain chemical substances of this organ on the body cells in general and upon the endocrine glands in particular, thereby assuming a role of an internal secretory gland.

Culbertson¹ states:

"It is fairly well established, and generally accepted by this time, that the ovary is possessed of an internal secretion, the chemistry of which has not been worked out. This secretion, evidently in the nature of a hormone, is thrown off with the follicle and its production is continued for a variable number of days after rupture of the follicle by the cells which go to make up the active portion of the corpus luteum.

"Aside from its influence aimed directly at the genital apparatus, the ovarian hormone is an important factor in the general organic economy. Here it can no longer be studied alone but must be considered in connection with the other glands of internal secretion, and here the problem becomes even more complicated and obscure. This is due not only to our imperfect knowledge of the physiology of the other ductless glands, but to the fact that the ovary functionates in a manner somewhat different from any of the others. We have every reason to believe that the thyroid, the pituitary, and the adrenal glands, for instance, are employed in producing and giving off their secretions more or less constantly and, at that, throughout the entire period of life. With the ovary on the other hand, the secretion is thrown out intermittently, rhythmically and regularly, to be sure, but only for a few days at a time, the intervening periods being spent, apparently, in the development of a new follicle with a fresh charge of active principle. Moreover, the ovary does not begin to produce this secretion until the fourteenth year of life, and then secretes indifferently well for a few years, during which time there is considerable interglandular discord. After approximately thirty years of relative stability, due to harmonious collaboration on the part of the various bodies comprising the ductless gland chain, the ovarian function ceases more or less gradually, but definitely.

"In the male sex gland, like the ovary, does not develop into efficiency until adolescence. But after that it apparently provides its internal secretion steadily and constantly, ceasing only with old age. Indeed here, in a very general way, may be found the explanation for the psychic and physical differences between the adult male and female, the former characterized by stability, the latter by instability."

The following quotation is taken from Graves' Gynecology:

"The ovary is recognized as a true organ of internal secretion. The corpus luteum in its full development presents the characteristic picture of an internal secretory gland. It develops at the age of puberty, and coincident with this is the appearance of cyclical changes of menstruation, which changes disappear after the cessation of the corpus luteum formation at the climacteric. The atretic follicles are believed to be the further

source of internal secretion of the ovary, the absence of the corpus luteum being sufficient evidence that there is some other portion of the ovary used for the primary source of the secretion. There is much to show that the action of the ovarian secretion is neither direct nor selective, but that it exerts only a balancing influence on other correlated and more powerful glands, the activity of which the ovarian secretion discharges or suppresses as the case may be. With the hypofunction of this gland we have not only to consider the effects of diminished secretory power, but also the changes wrought in the other members of the group, the balance of whose function has thus been disturbed."

Thus it seems to be a well recognized fact that the ovaries belong to the group of Endocrine glands and their secretion has a profound effect upon the body economy. Outside of this effect upon the genitals and sympathetic system their secretion and especially that of the Corpora Lutea seem to have a definite influence upon the thyroid pituitary and adrenal glands. That the extract of these bodies contain a hypotensive substance has been demonstrated by the experiments of Gonalons and others.

Gonalons² reports:

"Immediately following the injection of doses of 20 cubic centimeters of a maceration or decoction of gravid corpus luteum at 1:4 or 1:5, there is a marked very rapid hypotension of 50, 60, 70, or even 80 millimeters of mercury. The pressure falls rather rapidly, cardiac pulsations are generally considerably weakened and there are sometimes in the first moments deep convulsive respirations. After 1, 2, or 3 minutes the pulsations strengthen and the pressure rises. This is relatively rapid at first. After 5, 7, or 10 minutes, sometimes more, the pressure returns to normal; at other times it persists a little diminished."

It is generally conceded that the cause of the menopause is a gradual diminishing of ovarian function progressing to a complete cessation of the formation of the Corpora Lutea. This being true it would be natural to contemplate a disturbance of the comparatively delicate internal secretory balance, and it would not be far fetched to expect an over action of the pituitary and adrenals following the removal of the ovarian check. Thus Dannreuther³ explaining the effect of corpus luteum therapy says: "This is due to the fact that the deficiency of the ovarian hormone gives rise to a hyperactivity of the pituitary and adrenal glands which of course increases arterial tension."

Osborne⁴ evidently believes the disturbances at the menopause are due to a lack of corpus luteum for in discussing the effect of this substance on menopause symptoms he says:

"This condition has already been largely discussed under the heading of ovarian treatment, but certainly when the menopause is precipitate, with hot flashes, sweatings, nervous irritabilities, etc., corpus luteum treatment seems many times to be of great benefit. This is especially true when there is high blood pressure and in the

severe headaches occurring in this condition. Even when these headaches are not associated with high blood tension, but occur periodically showing that they are more or less toxic, corpus luteum many times is very efficient in preventing them. It will not stop a headache that has begun, unless it is a continuous headache of several days, but if corpus luteum is administered for several days before the cyclic period when menstruation would have occurred, it may prevent these periodic pains. Excessive nervousness and irritability may also be prevented by corpus luteum treatment.

"The very high systolic pressure which so often occurs in women at or soon after the menopause, without arteriosclerosis, and without apparent kidney cause, is often very markedly benefited by corpus luteum."

To sum up the theoretical portion of this paper we find these facts and premises:

1. The ovary is a gland having an internal secretion.
2. The chemical substance formed in the Corpus Luteum is a hypotensive substance.
3. This hypotensive substance acts directly upon the vascular system causing vaso-dilation and lowered vessel tone or acts indirectly through the other endocrine glands especially the pituitary and adrenals upsetting their equilibrium.
4. The reason why some patients have hypertension during the Climacteric and others do not is because in some this equilibrium is delicate while in others it is stable.
5. If the Corpus Luteum does act thus its influence upon the Pituitary and adrenals and its effect is one of a check or inhibition. When taken away these glands are given an opportunity to hyperfunctionate.

In order to see how our experience compared with the foregoing theory we reviewed all the cases, whose systolic pressures were 160 mm. of mercury or above by the auscultatory method, examined during 2000 consecutive admissions to the office of Dr. Dudley Fulton and myself. The total number was 158; 85 or 53% of which were women.

Of the 85 women 38 or 45% manifested symptoms characteristic of the menopause. It was impossible to ascertain the exact number of the remaining 55% whose hypertension began at the time of the climacteric but inasmuch as the majority of these were past 50 and had permanent changes in the heart, kidneys and blood vessels indicative of increased pressure of long duration, our impression was that the majority of them had started during this period.

In this series of 2000 subjects we found 137 women manifesting signs and symptoms indicating the menopause, 99 or 72% of which had a systolic blood pressure below 160 mm. of mercury. Thus it may be seen that almost 3 out of 4 patients during the climacteric had an endocrine balance so stable that the equilibrium was not sufficiently upset to cause hypertension.

The majority of women enter the climacteric between the ages of 40 and 50 years. Therefore, to ascertain if that was a favorable age for a rise

in blood pressure, we compared the percentage of men and women who had a hypertension at this age finding that but 14% of the men belonged to this period while 27% of the women fell into this group. While this is by no means absolute it is suggestive that the climacteric is a factor in producing hypertension.

The other apparent causative factors associated in the etiology of hypertensive states as apical abscesses, chronic tonsillitis, chronic constipation, goitre, etc., were present in practically the same degree in those patients suffering from climacteric symptoms as in those who were not. Nephritis was the exception, this being rarely present in the menopause patients but common in the other group. We would account for this by the fact that many of the non-menopause group had had hypertension for a sufficient number of years to cause a kidney inflammation or degeneration.

We had the opportunity to observe the majority of the menopause group under treatment. In addition to the usual things which were done for them, such as the removal of diseased tonsils, extraction of teeth showing definite apical abscesses, the relieving of chronic constipation, correcting dietetic errors and prescribing rest for exhaustion, the use of the extract of the corpus luteum alone or combined with the thyroid gland was studied. In a number it seemed these extracts would cause in a short time a definite decrease in pressure with a decided improvement of symptoms. The following is a typical case:

CASE REPORTS.

Mrs. B. Age 39: Family and personal history unimportant. Patient came complaining of general nervousness, spells of confusion, and hot flushes.

The physical examination was negative except for an accentuated aortic tone, palpable radials and a blood pressure of 175 systolic and 90 diastolic. The urine showed a few pus cells and a trace of albumen with a normal specific gravity.

The only treatment given this patient was 3 grains of thyroid and 9 grains of Corpus Luteum daily. The blood pressure quickly dropped to 135 systolic and 80 diastolic with relief of symptoms. This continued for several months when the patient quit the treatment. She returned a few months later with a partial return of symptoms and a blood pressure of 180 and 105.

In this case it would seem that the cause of the increased blood pressure was really an endocrine disturbance and the supplying of the deficient secretions did cause the drop in pressure.

The following case would tend to make one rather conservative however:

Mrs. G. Age 53: Family and personal histories unimportant. Patient came complaining of general nervousness, insomnia, fatigue and hot flushes.

The physical examination was negative with the exception of a few crowned teeth; cardiac dullness slightly increased to left, accentuated aortic second tone, a rather soft systolic murmur at the apex with a blood pressure of 180-100. The radials were palpable and there was slight pretibial edema. The urine was negative. The patient was given 20-30 grains of sodium bromide a day with 3 grains of thyroid extract daily following which there was a rapid drop in blood pressure to 135-80. After a few weeks, treatment was stopped.

About nine months later the patient returned with the former symptoms to which had been added a fullness in the head, numbness of the

extremities and a slight constipation. The blood pressure was 235-110. The urine was negative. At this time the patient was placed on a low proteid diet, given a saline and 30 grains of sodium bromide daily. In a month the blood pressure had fallen to 160-90 with a complete relief of symptoms. In this case the bromides apparently were the principal cause in the reduction of pressure during the last treatment and hence it is suggestive that they and not the thyroid gave the benefit in the former. This case seemed typical of hypertension during the climacteric but was controlled without gland extracts.

In reviewing the whole amount of data it would seem very plausible theoretically that hypertension could be produced by a disturbance of ovarian secretion, but from a practical standpoint one is forced to be much less positive.

The great frequency of the onset of hypertension during the climacteric age (40-50 years), the absence of Nephritis in these patients, combined with the apparent benefit in many by the exhibition of thyroid and Corpus Luteum extracts certainly tend strongly to confirm the theory.

However the fact that many women have hot flushes, irregular menses, with the marked general nervousness and vasomotor disturbances yet have a normal pressure, the fact that but a little over one out of four of all women in our series who were in the menopause period had a blood pressure over 160, and the fact that in some at least pressures were more readily reduced by an anti-spasmodic as bromides than by Corpus Luteum and thyroid would tend to make one very careful in drawing conclusions.

My ultimate conclusions would be that there are a few cases in which an endocrine disturbance is the great and possibly the entire cause of hypertension in women but by no means the number one would be led to believe from the series reported by Culbertson. There are a very large number, however, in which this disturbance while a factor is only a minor factor; other things as foci of infection, chronic constipation, fatigue states, hyperthyroidism, nephritis, etc., being the great factors in the etiology.

In the first group thyroid and Corpus Luteum would give the desired results while in the second group they alone would do little. If we think because a patient has a hypertension during the climacteric all we need do is to give them Corpus Luteum, we will be sadly disappointed for only by the most minute investigation of all the etiologic factors can one arrive at the proper treatment the patient so justly deserves.

References.

1. Culbertson, Surgery, Gynecology and Obstetrics, Dec., 1916.
2. Gonalons, Surgery, Gynecology and Obstetrics, Feb., 1918.
3. Dannreuther, New York Medical Journal, Oct. 20, 1917.
4. Osborne, New York Medical Journal, Sept. 14, 1918.

NOTICE

STATE MEETING

Make your reservations at once direct with Hotel Coronado for meeting of State Medical Society, May 10, 11, 12.

PROVISIONAL PROGRAM

of the
50th Annual Session
of the
Medical Society
State of California
Coronado
May 10, 11, 12, 1921

COMMITTEE ON SCIENTIFIC PROGRAM

- SAXTON POPE (as secretary of the society), Chairman
WALTER V. BREM, Los Angeles, Secretary, 1921
LEMUEL P. ADAMS, Oakland, Secretary, 1922
FRANCIS M. POTTENGER, Monrovia, Secretary, 1923
FRED F. GUNDRUM, Sacramento, Secretary, 1924

* GENERAL SECTION

MEDICAL SECTION

- SAMUEL H. HURWITZ, San Francisco, Chairman
ROWLAND S. CUMMINGS, Los Angeles, Secretary

SURGICAL SECTION

- WILLIAM A. CLARK, Oakland, Chairman
CLARENCE G. TOLAND, Los Angeles, Secretary

INDUSTRIAL MEDICINE

- CHAS. A. DUKES, Oakland, Chairman
JOHN L. POMEROY, Los Angeles, Secretary

EYE, EAR, NOSE AND THROAT SECTION

- FRANK E. DETLING, Los Angeles, Chairman
HARVARD McNAUGHT, San Francisco, Secretary

GENITO-URINARY SECTION

- GEO. G. REINLE, Oakland, Chairman
GEO. W. HARTMAN, San Francisco, Secretary

GYNECOLOGY AND OBSTETRICS SECTION

- FREDERIC M. LOOMIS, Oakland, Chairman
THOMAS F. WIER, San Diego, Secretary

NEUROLOGICAL SECTION

- CHAS. L. ALLEN, Los Angeles, Chairman
RICHARD W. HARVEY, San Francisco, Secretary

* PEDIATRIC SECTION

- WILLIAM PALMER LUCAS, San Francisco, Chairman
HUGH K. BERKELEY, Los Angeles, Secretary

COMMITTEE ON ARRANGEMENTS

- LYELL C. KINNEY, San Diego, Chairman
PAUL M. CARRINGTON, San Diego
PAUL WEGEFORTH, San Diego

State Medical Society

RULES GOVERNING READING OF PAPERS AND DISCUSSIONS AT STATE SOCIETY MEETING

The following rules, which have been adopted from time to time by the Committee on Scientific Program and which apply to the coming meeting of the State Society, are here reprinted for the benefit of those who will read papers and those participating in the discussions.

Rules for Authors

1. Time allotted for each paper is fifteen minutes. The only exception to this rule will be the latitude allowed visitors from other states who come as guests of the Society.

2. No motion from the floor to extend the time of the author will be considered by the chairman of any section.

3. Each author will be allowed five minutes for closing the discussion of his paper.

4. Each author must prepare an extra copy of his paper and present the same to the officer presiding over his section before he will be eligible to read his paper.

5. Absolutely no paper may be "read by title." By consulting the program appearing in this and in the May issue, as well as the special program issued at the state meeting, each author can learn definitely when his paper is due to be read.

6. Failure on the part of an author to appear and read his paper automatically precludes the acceptance of future papers by such author for a period of two years.

Rules for Those Taking Part in Discussions

1. Openers are limited to five minutes.

2. Subsequent speakers are limited to three minutes.

3. The privilege of a second three minutes will not be granted to any one.

4. Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

* Note—It will be noted that two new sections have been created by the council:

General Section

This section will be a meeting where topics of interest to the profession at large can be discussed. This part of the program will be held at a time when the various sections are not convened, so that every one may be given an opportunity to be present. There will be two sessions, and they will be held on the first day of the meeting. The morning session will commence at 9 o'clock and continue at 11 o'clock, when the President's address, which has always been a part of the Tuesday morning's program, will be given. Everything else heretofore appearing on the program of the first morning will be dispensed with.

The second session will be held in the afternoon from 2 to 5 o'clock.

Pediatric Section

Tuesday Morning

9 o'clock

GENERAL SECTION

1. CONDITIONS OF INDUSTRIAL ACCIDENT PRACTICE IN THE STATE OF CALIFORNIA.

THOMAS CHALMERS MYERS,

Los Angeles.

California law used as a model for other states. Frequently misrepresented as being satisfactory to the medical profession. Law misinterpreted and misconstrued. Initiatory agreement between the insurance companies

and State Medical Society. Failure to safeguard rights of patients and doctors resulting in dissatisfaction. Methods of underwriters in selecting hospitals and surgeons. Industrial accident practice as a specialty. Propriety of insurance doctors holding executive offices in the state and county societies. Employment of non-members. Tendency to depreciate common courtesy and medical ethics. Necessity of measures to protect the rights of the medical profession in the State of California.

3. APPLICATION OF THE PROTECTED QUARANTINE PACK IN ABDOMINAL SURGERY.

ROBERT C. COFFEY,

Portland, Ore.

1. By "protected quarantine pack" we mean the placing of a number of properly constructed wicks of gauze around an area which is to be quarantined from contact with other abdominal organs. The gauze wicks are protected from contact with the organs by sheets of rubber tissue.

2. The "protected quarantine pack" is used for the combined purpose of drainage and the separation of non-infected organs from an area of continuing sepsis.

3. The "protected quarantine pack" is used to prevent intestines from adhering or readhering to raw or infected surfaces.

4. ORGANIZED MEDICINE FOR THE MASSES, A FEATURE OF PRESENT DAY MEDICAL PRACTICE.

E. W. CLEARY,

San Francisco.

1. Medical practice is undergoing significant changes.

2. There is a tendency for the group to replace the individual doctor.

3. Group organization offers advantages to medical men.

4. Organized medicine offers better service to the layman.

5. The large employer finds advantages in medical organization.

6. Organization leads to a closer bond between research and practice, and broader teaching facilities.

7. Disadvantages in organization lie in disturbance of the established order, relative subordination of the individual and the raising of certain financial and ethical issues.

8. Specific instances of organization now operating show particular advantages, limitations and peculiar features.

9. An analysis of the ideal organization plan demonstrates the magnitude of its scope and contacts.

10. The problem of organization is the great present opportunity and responsibility of the medical profession.

5. PRESIDENT'S ADDRESS—11 o'clock A. M.

Tuesday Afternoon

2 to 5 P. M.

GENERAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. DIAGNOSTIC SIGNS OF DUCTLESS GLAND DISORDERS.

DR. TIERNEY,

St. Louis.

Discussion opened by

2. SURGICAL RESULTS FROM THE ECONOMIC STANDPOINT.

GAYLE G. MOSELEY,
San Francisco.

Discussion opened by

Dealing with surgical results from the standpoint of time lost, and the importance of securing as good a functional result as possible with reference to the particular kind of work that the patient is supposed to do.

The importance of returning an injured man to industry at the earliest possible moment has not been sufficiently emphasized and that the early return of the injured person to industry is just as important in those cases seen in every day practice, as in the cases that are industrial. There is a great variation in the length of time required by different surgeons to get a result in injuries of approximately the same kind and severity.

3. RELATION OF MEDICINE TO PUBLIC HEALTH AND PUBLIC MEDICINE.

PHILIP KING BROWN,
San Francisco.

Discussion opened by

"The health and physique of the people is the principal asset of the nation."—(Newman, chief medical officer of the British Ministry of Health, 1919.)

Preventive medicine is the basis of public health and public welfare and can only be developed by improving constantly the standard of medical practice.

Is the public better served by an extension of social medicine along the lines of health insurance or by state and municipal support of health centers where community group study of cases and all accessory means of examination may be had for small wage earners?

What the public most needs is not cheaper medicine but better medicine.

What the doctors need is more accessible and more easily utilized opportunities for improving their means of diagnosis and familiarity with modern medical methods.

Wednesday Morning

9 A. M. to 12 M.

MEDICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. Chairman's Address—SOME ASPECTS OF PERNICIOUS ANEMIA AND ITS TREATMENT.

SAMUEL H. HURWITZ,
San Francisco.

2. BLOOD STUDIES IN ANEMIAS.

WM. PALMER LUCAS,
San Francisco.

The result of some of the work now being carried on, studying the blood first, from the old standpoint of morphology; second, from the standpoint of bio-chemistry, and third, from the physico-chemical standpoint of volume and rate of flow; fourth, from the standpoint of coagulation.

Discussion opened by Nelson W. Janney, Los Angeles.

3. EPIDEMIC ENCEPHALITIS.

HERBERT C. MOFFITT,
San Francisco

Classification of personal cases from a clinical pathological viewpoint with special reference to our present knowledge of cerebral localization.

The occurrence of unusual, chronic re-

current and fruste forms. Lantern slides of pathological changes. Conclusions as to etiology, prognosis and treatment.

Discussion opened by Milton B. Lennon, San Francisco.

4. THE INCIDENCE AND CLINICAL SIGNIFICANCE OF FLAGELLATE INFECTION IN CERTAIN CHRONIC DISEASES.

JOHN V. BARROW,
Los Angeles.

I. History and recent literature.

1. Discovery antedates that of the amoeba.

2. Opinion of present-day protozoan workers tends to place them in the same class.

3. Most text books are inaccurate, inadequate, and practically valueless in their consideration.

4. Résumé of authors and literature.

II. Present clinical consideration.

1. Comparatively small number of cases accurately reported and studied.

2. Toxaemia and not dysentery, the most characteristic symptom.

3. Difficulty and pitfalls in experimental work.

4. Clinical report of author's cases by groups:

(a) Reflex and recurrent gastrointestinal group.

(b) Disturbed metabolism group (anaemia, arthritis).

(c) Neuro-toxic group (urticarial, epileptiform, melancholic symptoms).

5. Organisms found and their incidence in routine office work.

6. Treatment and prognosis.

Discussion opened by W. E. Musgrave, San Francisco.

5. THE GREAT SECOND TYPE OF CHRONIC ARTHRITIS—FURTHER OBSERVATIONS.

LEONARD W. ELY,
San Francisco.

Recapitulation of previous work on the subject. Additional cases. Cause: This type of arthritis probably has but one exciting cause—infection in the alveolar processes of the jaws. Trauma is only effective as damaging an already distorted (deformed) joint. Pathology: The fundamental change appears to be an area of aseptic necrosis in the end of the bone near the cartilage. Treatment.

Discussion opened by

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

Given under the auspices of League for the Conservation of Public Health. (Papers will be announced later.)

Wednesday Afternoon

2:30 to 5:30 P. M.

MEDICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. FURTHER STUDIES ON THE NATURE OF FEVER.

WILLIAM D. SANSUM,
Santa Barbara.

Discussion opened by Franklin R. Nuzum, Santa Barbara.

Short review of the work presented in the enclosed reprint.

The production of fever in poikilothermic dogs by the intravenous administration of typhoid vaccine.

Typhoid vaccine was chosen because it simulates more closely than any other foreign protein the toxins of the usual fever-producing diseases.

2. METABOLISM STUDIES IN PULMONARY TUBERCULOSIS.

R. A. KOCHER,
San Diego.

Present status of feeding tuberculous patients. Aims, practice, results. Criticism of the method of indiscriminate high caloric feeding.

The present study is based on experiments with patients suffering from pulmonary tuberculosis, and in it is aimed:

1. To determine the minimum caloric requirements of T. B. patients, using basal metabolism estimations.
2. To determine the effect of various diets on respiratory rate.
3. To determine the effect of weight on respiratory rate.
4. To estimate the functional efficiency of the body by creatinine determinations.
5. Determination of the optimum diet.

The diet of patients with active T. B. should contain sufficient calories to cover the minimum local requirements, plus sufficient to cover the increased production when fever is present.

During this stage the amount of protein allowed should barely cover the minimum requirement, as it was shown that high protein feeding by the so-called specific dynamic action, increases metabolic rate, and hence the frequency and depth of respiration.

When the process has become arrested, the aim of the diet should be increased to enable the patient to gradually recover any lost weight up to his proper weight and no more. This should be checked by creatinine estimation on the urine to determine that the gain in weight is in active muscle mass and not a spurious gain in adipose tissue. A gain in superfluous fat merely adds to the metabolic rate—also respiratory rate without adding to the functional efficiency of the organism.

Discussion opened by Nelson W. Janney, Los Angeles.

3. THE TREATMENT OF TUBERCULOSIS WITH PARTIGENS (AFTER MUCHDEYCKE).

MAX ROTHSCHILD,
San Francisco

1. What are Partigens?
2. In what respects do they differ, regarding their effect, from the tuberculins which are on the market and in use today?
3. Scientific foundation for the justification of this method of treatment.
 - (a) Immunity in tuberculosis in general.
 - (b) Cellular and humoral immunity.
 - (c) Biological tests (in regard to the effect of partigens).
4. Demonstration of diapositives, showing cases treated with partigens.

Discussion opened by G. H. Evans, San Francisco.

4. PERSONAL EXPERIENCE WITH THE USE OF ARTIFICIAL PNEUMO-THORAX IN THE TREATMENT OF PULMONARY DISEASE.

ROBERT A. PEERS,
Colfax.

Reason for presenting this subject. Indications for treatment. Type of instrument used. Easy technic. Contra-indications and complications. Dosage. Case reports.

Discussion opened by Philip King Brown, San Francisco.

5. BIOLOGICAL FACTS ABOUT BENZYL-BENZOATE THERAPY.

L. A. EMGE,
San Francisco.

1. Brief review about the physiological and chemical facts reported up to date.
2. The action of benzyl-benzoate on the leukocyte and anti-infectious powers of the body based on personal experimental work in animals and on clinical observations.
3. Relation of benzyl-benzoate to allied chemical substance and the comparison between the effect on the blood picture in general.
4. Further biological experimental studies in regard to the fate of benzyl-benzoate in the body as judged from urine and blood chemistry.
5. Serological studies in regard to antibody formation as influenced by benzyl-benzoate.

Discussion opened by S. H. Hurwitz, San Francisco.

Thursday Morning

9 A. M. to 12 M.

MEDICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. NORMAL VARIATIONS IN BASAL METABOLISM.

ALBERT H. ROWE,
Oakland.

1. Effect of Menstruation. Necessity of taking this into account in metabolic studies.
2. Effect of mental activity.
3. Normal metabolic curve of men.

Discussion opened by Lovell Langstroth, San Francisco.

2. DIAGNOSIS OF HYPOTHYROIDISM.

NELSON W. JANNEY,
Los Angeles.

Cretinism and myxoedema are among the most easily recognized of medical conditions but are met with quite infrequently in their typical expressions. Latent cases of hypothyroidism in children and adults may be extremely difficult to detect. This paper, therefore, includes a critical survey of the laboratory and clinical methods used in making such a diagnosis. A number of cases of masked hypothyroidism of the type of Hertoghe can only be certainly recognized with modern laboratory aids to diagnosis including the basal metabolism.

Discussion opened by

3. THE VALUE OF BASAL METABOLISM ESTIMATIONS IN CASES WITH LOWERED METABOLISM.

ROBERT B. HILL,
Los Angeles.

The study is based on an analysis of the findings in about sixty cases. Observations of the basal metabolism were made both before and after the administration of thyroid extract.

Discussion opened by R. S. Cummings, Los Angeles.

4. HYPOPITUITARISM AND ITS TREATMENT.

HANS LISSER,
San Francisco.

Description of various types of hypopituitarism, preadolescent and postadolescent of anterior and posterior lobes, such as Lorain-Levi type, Neurath-Cushing type and Froelich type; reference to Engelbach's classification; treatment with gland extracts. Illustrated by case histories and lantern slide pictures.

Discussion opened by Herbert C. Moffitt, San Francisco.

5. DERMATOSES IN EXOPHTHALMIC GOITRE.

F. F. GUNDRUM,
Sacramento.

Skin conditions occurring with goitre may be:

1. Concurrent.
2. Indirectly associated as the effect of some disturbance created by goitre.
3. Immediately dependent upon the goitrous condition.

Report of two skin rash cases, unusual, cured by partial thyroidectomy.

Discussion opened by D. E. Schoff, Sacramento.

Thursday Afternoon

2 o'clock

MEDICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. PRETAXIC GASTRIC CRISIS.

E. C. FISHBAUGH,
Los Angeles.

1. Short review of literature.
2. Report of cases.
3. Summary of clinical and laboratory findings.
4. Conclusion.

Discussion opened by Walter W. Boardman, San Francisco.

2. DETERMINATION OF THE AMOUNT OF SECRETING TISSUE IN THE KIDNEY BY OBSERVATION OF ITS FUNCTION.

T. ADDIS,
San Francisco.

1. Present methods are qualitative, not quantitative.
2. Importance of strain if total functional capacity is to be measured or any deductions as to quantity of tissue drawn.
3. Method: Determinations of urea content of blood and urine after administration of urea.
4. Experimental and clinical evidence.

Illustrated with lantern slides.

Discussion opened by Walter C. Alvarez, San Francisco.

3. ETIOLOGY OF NEPHRITIS.

GEORGE E. EBRIGHT,
San Francisco.

Influence of previous infections. Diseases of the upper respiratory tracts. Comparison of the causes of acute and chronic nephritis. Aspect of nephritis as a general condition rather than primarily a disease of the kidneys. Picture of acute nephritis without urinary findings. Metabolic considerations.

Discussion opened by Dudley Fulton, Los Angeles.

4. CLINICAL USEFULNESS OF THE ORTHO-CARDIOGRAPH—A SIMPLE TECHNIC DEMONSTRATED.

HARRY SPIRO,
San Francisco.

1. In order to help make our laboratory findings agree with our clinical findings a simple method of producing ortho-cardiograms is offered.

2. The difficulty of visualizing a radiograph of your patient's chest while you are determining the cardiac outline is obviated by marking an ortho-cardiogram directly on your patient's skin, and then taking a permanent record from that. This record to be used as a pattern for future examinations and so enclosed with the history sheets.

3. It is maintained that once you correct your percussion outline by a suitable ortho-cardiogram you will in the future unconsciously eliminate all adventitious sounds and thus nearly always percuss the proper outline of your patient's heart.

4. An addition to our other standards of measurements is suggested in a "Family Type," as one heart may be normal as compared to standards for weight, etc., but distinctly out of contour or size compared to other members of one's family.

5. The apparent advantage of the ortho-cardiogram over other methods of X-ray examinations are briefly discussed.

6. Ortho-cardiograms, X-ray prints, etc., are shown.

Discussion opened by Alfred C. Reed, San Francisco.

5. FLUOROSCOPIC STUDIES OF THE HUMAN HEART, WITH SPECIAL REFERENCE TO IRREGULARITIES AND THEIR MECHANISM.

W. J. KERR and H. E. RUGGLES,
San Francisco.

Normal contractions; various types of irregularities, extra systoles, heart block and alternation of the pulse; illustrated with moving pictures.

Discussion opened by Dudley Fulton, Los Angeles.

Wednesday Morning

9 A. M. to 12 M.

SURGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. CHRONIC DILATATION OF THE DUODENUM.

HARLAN SHOEMAKER,
San Francisco.

History of case; type of operation and X-ray diagnosis.

Discussion opened by John F. Cowan, San Francisco.

2. TREATMENT OF GOITRE.

CARL L. HOAG,
San Francisco.

- a. Present tendencies in treatment.
- b. Necessity of clearly recognizing various types for rational treatment.

- c. Classification into types from clinical and therapeutic standpoints.

- d. The value of basal metabolic determinations in diagnosis and treatment.

- e. Differential diagnosis of the various types and the treatment indicated in each.

- f. Summary.

- g. Lantern slides showing various types and important points in operative technic.

Illustrated with lantern slides.

Discussion opened by Clarence G. Toland, Los Angeles.

3. CHRONIC LESIONS OF THE LOWER LIP.

EDWIN I. BARTLETT,
San Francisco.

A consideration of the mortality and the reasons concerned therein; classification; differential diagnosis; treatment and conclusion.

Discussion opened by Howard Morrow, San Francisco.

4. **A PRELIMINARY REPORT ON EXPERIMENTAL WORK IN OXYGEN TENSION DURING ANAESTHESIA.**

MARY E. BOTSFORD,
San Francisco.

Findings of Medical Research Laboratory Air Service, Mineola, N. Y., that reduced oxygen produces definite circulatory responses.

Bearings on anaesthesia problems.

Influence of hemoglobin index on oxygen requirements.

Cyanosis not absolute guide—over compensatory mechanism supplying for oxygen lack without cyanosis.

Oxygen need modified by shock.

Possibility of definite regulation of oxygen percentage in nitrous oxide oxygen anaesthesia.

Conclusions from experimental work in Hooper Research Laboratory, University of California.

Discussion opened by Saxton T. Pope, San Francisco.

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

Given under the auspices of League for the Conservation of Public Health.
(Papers will be announced later.)

Wednesday Afternoon

2:30 to 5:30 P. M.

SURGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **SOME NOTES ON PLASTIC OPERATIONS.**

LEO ELOESSER,
San Francisco.

The pedicled flap after the method of Esser. The semi-detached flap. The bridge flap. Tests for determining the viability of the flap. The gradual separation of flaps. The epithelial inlay, and a new operation for ektropion founded on it. A plastic for the cure of contractures of the fingers. Transplantation of Stenon's duct for the relief of drooling.

Stereopticon.

Discussion to be opened by E. F. Tholen, Los Angeles.

2. **PROBLEMS IN PLASTIC SURGERY.**

GEO. W. PIERCE,
San Francisco.

1. Reconstruction of members.
2. Remedy of defects.
3. War injuries and their correction.
4. Cosmetic requirements to be met.
5. Special steps in technic.

Discussion to be opened by Wallace I. Terry, San Francisco.

3. **PULMONARY TUBERCULOSIS WITH REPORT OF A CASE.**

HERBERT A. JOHNSTON,
Anaheim, Calif.

Short history of operation and its relation to artificial pneumothorax. Type of case in which it is indicated. Hope offered by extrapleural rib resection to a class of

tuberculous patients otherwise doomed. Report of case which is apparently recovering as a result of operation by the method of Wilms.

Illustrated with lantern slides.

Discussion to be opened by George B. Kalb, Monrovia, Calif.

4. **CONGENITAL PYLORIC STENOSIS.**

ALANSON WEEKS,
San Francisco.

Is this condition being overlooked among the babies of California?

The diagnosis as a rule is simple.

Treatment: When to use thickened foods.

When to operate.

Discussion to be opened by R. Langley Porter, San Francisco.

Thursday Morning

9 A. M. to 12 M.

SURGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **CHRONIC TROCHANTERIC BURSTITIS.**

JOSEPH K. SWINDT,
Pomona, Calif.

Trochanteric bursitis, a relatively rare and commonly overlooked hip lesion.

Anatomy of bursae; description of those about the hip joint.

Morbidity of bursae in general; relative incidence in the more important ones.

Etiology of trochanteric bursitis, especially as to the relation of traumatism and metastatic infection.

Pathologic anatomy, especially in regard to burrowing proclivity of inflamed or traumatized bursae; fusion with neighboring bursae; method of and tendency toward regeneration of the hygroma.

Symptoms of trochanteric bursitis; differential diagnosis from bursitides in associated bursae, coxitis and osteomyelitis.

Treatment, causes of failure; total ablation of the hygroma alone effective.

Case report, including description of incision, designed to preserve the integrity of muscles and tendons while affording access to all bursae about the trochanter major.

Discussion to be opened by John C. Wilson, Los Angeles, Calif.

2. **SOME OBSERVATIONS IN CASES OF FRACTURED SKULLS. SEEN IN SAN FRANCISCO EMERGENCY HOSPITALS.**

EDMUND BUTLER,
San Francisco.

1. Number of Cases.
2. Relation to Industry.
3. Relation to Alcohol.
4. Suggestions as to Examination; Interpretation of Findings and Treatment.

Discussion to be opened by Thomas G. Inman, San Francisco.

3. **TRAUMA IN THE ETIOLOGY OF SARCOMA.**

EMMET RIXFORD,
San Francisco.

No definite evidence that trauma is a cause of sarcoma. Percentage of suggested cases small. Report of case of sarcoma of femur following spiral fracture wired in open operation.

Discussion to be opened by Chas. LeRoy Lowman, Los Angeles.

4. **FRACTURES OF THE PELVIS.**

HAROLD BRUNN,
San Francisco.

1. Types and mechanics of pelvic fractures.
2. Symptomatology and diagnosis (exclu-

sive of fracture producing visceral lesions).

3. Discussion of statistics compiled from cases in the files of the California Industrial Commission and other sources.
 4. Disabilities resulting from fracture of the pelvis. Their frequency, duration, symptoms usually associated.
 5. Causes which produce disabilities, such as improper treatment, overlooked diagnosis, etc.
 6. End results from the treatment of disabilities.
 7. Discussion of the prevalent method of treating pelvis fractures.
 8. Advantage of the sling method with or without traction. Simplicity, adaptability, comfort. Ease of nursing. Future disability minimized.
 9. Case reports.
 10. Conclusions.
- Demonstration of lantern slides and X-ray plates.

5. **FRACTURE OF THE PATELLA WITH EXPERIMENTAL STUDY.**

JOHN F. COWAN,
San Francisco.

Essential points discussed.

- a. Structure of the patella.
- b. Study of repair following fracture.
- c. Causes of refracture.

Illustrated with lantern slides.

Discussion to be opened by Harlan Shoemaker, Los Angeles.

Thursday Afternoon

2 o'clock

SURGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **PERIPHERAL NERVE SURGERY.**

CHARLES L. TRANTER,
San Francisco.

The war experience has shown that direct end-to-end sutures are usually possible, and that two-stage operations are referable to the use of grafts. The late results of the war cases.

Illustrated with lantern slides.

Discussion to be opened by C. W. Rand, Los Angeles.

2. **TIC DOULOUREUX.**

HOWARD C. NAFFZIGER,
San Francisco.

The selection of cases suitable for

- a. Neurectomies.
- b. Injections.
- c. The Gasserian operation.

Methods of operative treatment.

Preservation of the motor root.

Results of section of the sensory root.

Report of cases.

Discussion to be opened by C. W. Rand, Los Angeles.

3. **AMEBIC GALL BLADDER INFECTION, WITHOUT LIVER ABSCESS, WITH REPORT OF CASES.**

HERBERT GUNN,
San Francisco.

1. Relationship to incurable intestinal amebiasis.
2. Determination of cases suitable for operation.
3. Value of duodenal tube findings.
4. Gall bladder findings at operation.
5. Report of cases.

Discussion to be opened by Alfred C. Reed, San Francisco.

4. **AMEBIC ABSCESS OF LIVER WITH PULMONARY SEQUELAE.**

REXWALD BROWN,
Santa Barbara.

Case report; history; physical and X-ray findings; operative findings—rupture through diaphragm bilateral amoebic abscess of lung; autopsy report; demonstration of amoebae in abscess walls.

Projection apparatus for microphotograph. Discussion to be opened by Rea Smith, Los Angeles.

Wednesday Morning

9 A. M. to 12 M.

INDUSTRIAL MEDICINE SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **Address by Chairman—RECENT DEVELOPMENT IN INDUSTRIAL MEDICINE.**

CHAS. A. DUKES,
Oakland, California.

2. **RETURN TO WORK AFTER INJURY.**

MORTON R. GIBBONS,
San Francisco.

Injured are not morally entitled to idleness.

On the other hand, every man has a right to work with whatever function remains to him and to receive pay for his efforts.

Work combined with treatment during recovery is necessary.

Facilities are required for making such work remunerative to the injured.

The parallel in war risk insurance and its lesson.

Need of propoganda to the end of establishing a public sentiment in this direction.

Discussion opened by Daniel Crosby, Oakland, Calif., and C. W. Decker, Los Angeles, Calif.

3. **CLINICAL EXPERIENCE AS TO THE SEVERAL KINDS OF PHYSIOTHERAPY EMPLOYED IN RECONSTRUCTION WORK.**

JAMES T. WATKINS,
San Francisco.

Antiquity of physiotherapy. Its widespread geographical distribution. Value as a therapeutic aid long recognized in Europe: Swedish gymnastics, Zanders, Kruckenberg, Hertz. Disrepute in this country because employed by faddists, charlatans and persons of defective medical education. The influence of the war. Lessons from the enemy. Clinical evidence of therapeutic value in selected war wounds abundant and satisfying. Scientific investigations as to what actually happens yet to be undertaken. Dangers physiotherapy has to encounter. Necessity for intimate co-operation between surgeon and physiotherapeutic aid. Discussion of the several kinds of physiotherapy employed in Industrial Rehabilitation.

Discussion opened by L. I. Newman, San Francisco.

4. **THE RESTORATION OF FUNCTION IN ACQUIRED HAND DEFORMITIES.**

A. GOTTLIEB,
San Francisco.

Paper by A. Gottlieb and L. I. Newman. Frequency of hand deformities in industry and the attendant economic loss.

Early preventive physiotherapy after injury to guard against permanent diminution of normal function.

Physical remedies in fully developed cases to restore function to the maximum before discharge of the injured individual as permanently disabled.

Opinion of the physiotherapist regarding the necessity of his treatment before final rating.

Statistical data demonstrating the relative amounts of function in a series of cases, and the economic value to the insurance carrier. Lantern slides of several cases treated by physiotherapy.

Discussion opened by Mark L. Emerson, Oakland, Calif.

5. **INSURANCE RATES A GUIDE TO HYGIENIC CONDITIONS SURROUNDING DIFFERENT OCCUPATIONS.**

MILBANK JOHNSON,
Los Angeles.

Briefly, the subject matter of this paper will be insurance rates based upon actual experience as a guide to hygienic working conditions surrounding the different occupations and suggestions as to how these conditions may be benefited so as to reduce the natural hazard connected with the several occupations thereby prolonging the lives of our workers and reducing the vast amount of time unnecessarily lost by the workers through unhygienic occupational conditions.

Discussion opened by Henry Walter Gibbons, San Francisco.

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

GIVEN UNDER THE AUSPICES OF LEAGUE FOR THE CONSERVATION OF PUBLIC HEALTH.

(Papers will be announced later)

Wednesday Afternoon

2:30 to 5 P. M.

INDUSTRIAL MEDICINE SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **THE DEVELOPMENT OF A MODERN MEDICAL SERVICE FOR THE INDUSTRIAL INJURED AND SICK AT THE HAHNEMANN HOSPITAL OF THE UNIVERSITY OF CALIFORNIA.**

EDGAR L. GILCREEST,

Hahnemann Hospital, San Francisco.

The scientific care of the industrial injured is a problem worthy of the serious attention of a Hospital with an attending staff of specialists.

A trip to the large industrial centers of the east convinced me of the already great progress that has been made in the care of the industrial sick and injured.

The Hahnemann Hospital of the University of California is making the care of the industrial sick and injured problem.

Physio-therapeutic Department—Emphasis is laid upon the operation of trained attendants rather than upon the use of elaborate machine.

Occupational Therapeutic Department—Covers the function of bedside occupation and light occupation for the average con-

valescent; provides wholesome reading matter for the patient.

Curative Workshop—Where the convalescent is taught how to construct and make many articles which he thought himself incapable of doing.

Social Service Department—The general welfare of the sick man is looked after. Rooms are secured for him nearby when he is well enough to live outside.

Difficult conference cases receive prompt attention by the staff of specialists.

An "esprit de corps" is developed in the Hospital which satisfies the patient and which they appreciate as is manifested by their frequent visits after their discharge.

Discussion opened by R. Seldon Anthony, El Segundo, Calif.

2. **OCCUPATIONAL DISEASES OF THE SKIN AND HANDS IN CALIFORNIA INDUSTRY.**

R. P. LEGGE,
Berkeley, Calif.

"Packer's Itch," straw used and packing.

Mode and cause of the dermatitis.

Identification of the Mite.

Prevention, method and treatment.

Peculiar infections of the hand found in the Dry Fig Industry.

Deep cellular involvement of the fingers.

Probable cause and treatment.

Discussion opened by Harry Alderson, San Francisco.

3. **THE SERVICE OF NEURO-PSYCHIATRY TO INDUSTRIAL MEDICINE.**

HAROLD W. WRIGHT,
San Francisco.

Analysis of causes of labor turnover. Economic and personal consequences. Mental causes of inefficiency, remediable and otherwise. Psycho-neurosis due to causes within and without the plant which might be remedied by adjustment of the individual. Services to be rendered by the neuro-psychiatrist. The detection of the unfit for any or some particular employment. The early detection of mental defect, psychoses and neurosyphilis. Psychotherapy of the disgruntled and agitators. Proper placement of those of special abilities or special handicaps. The bringing about of better understanding between foremen and subordinates in peculiar cases. Early attention and treatment of traumatic neurosis before it becomes fixed and incurable. Comparison of results of treatment of war neurosis and the handling of neurosis of industrial life. The general neglect of the mental factors and the psychosociological factors in industrial medicine unwarranted and to be deplored.

Discussion opened by Clifford W. Mack, Livermore Calif.

4. **FRACTURES OF THE FEMUR.**

C. E. EARLY,
Los Angeles.

Special attention to the treatment of fractures of the femur, as referable to industrial injuries, making a plea for a more standardized form of treatment.

Marked economic loss incurred by a fracture of the femur.

Treatment of fractures of the femur by traction, and suspension in the Thomas Splint. Fractures adequately treated by the Thomas Splint and those in which it is necessary to use plaster of Paris or some other form of splint in which more adequate abduction can be maintained.

Classification of fractures of the femur and fractures occurring in and about the trochan-

ters, those occurring in the shaft proper, and those occurring in the condylar region.

Short résumé of the recent literature upon new methods of treatment.

Discussion opened by George Rothganger and W. L. Bell, Oakland, Calif.

5. **SOCIAL WELFARE PROGRAM, INCLUDING HOUSING FOR FIELD EMPLOYEES.**
CHARLES BENNETT,
Los Angeles.

Discussion opened by Alvin Powell, Oakland, Calif.

An interesting exhibit of Physiotherapy apparatus is also being prepared with the approval of the office of the Surgeon General of the United States Army.

This exhibit is under the supervision of Major Roy E. Fox, M. C., U. S. A., of the Letterman Hospital, San Francisco.

Wednesday Morning

9 o'clock

EYE, EAR, NOSE AND THROAT SECTION

Discussion will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **REMOVAL OF FOREIGN BODIES FROM THE ESOPHAGUS AND BRONCHI.**

HARRINGTON B. GRAHAM,
San Francisco.

Discussion of problems occurring in various cases undertaken since last report before the Society.

Discussion opened by

2. **DIAGNOSIS AND TREATMENT OF CONDITIONS IN FOOD AND AIR PASSAGES, BY ENDOSCOPY AND SUSPENSION LARYNGOSCOPY.**

E. C. SEWALL,
San Francisco.

Report of a case of spontaneous perforation of the arch of the aorta by a chicken bone in the esophagus, with demonstration of specimen.

Carcinoma of the esophagus, some unusual cases, application of radium, results.

Removal in suspension of multiple Papillomata from the larynx. Use of radium in two cases.

Papillomata of cord and cicatricial webs removed in suspension.

Discussion opened by

3. **THE DIFFERENTIATION OF EARLY MENINGITIS AND MASTOIDITIS.**

WILLIAM J. MELLINGER,
Santa Barbara.

I. Introduction.

1. The association of meningitis as a complication of mastoiditis is frequent.
2. The presence of meningitis and mastoiditis at the same time and independent of each other is infrequent.

II. Etiology of the two conditions when occurring at the same time and independent of each other.

III. Symptomatology.

A. Symptoms of meningitis not dependent on mastoiditis.

1. Deafness.
 - (a) Bilateral.
 - (b) Tuning-fork nerve.
2. Headache.
3. Lethargy.
4. Nausea and Vomiting.

B. Symptoms of mastoiditis.

1. Deafness.
 - (a) Unilateral.
 - (b) Tuning-fork.

2. Headache—localized.

C. Symptoms Common to Both.

1. Temperature.
2. Pain, etc.

IV. Differential Diagnosis.

A. Meningitis.

1. Symptomatology.
2. X-Ray.
3. Laboratory.

(a) Blood—White and Differential, and Culture.

(b) Spinal Fluid.

B. Mastoiditis.

1. Symptomatology.
2. X-Ray.
3. Laboratory.

(a) Blood—White and Differential, and Culture.

(b) Discharge.

- (1) Bone debris.
- (2) Bacteria.

V. Illustrative Clinical Example.

A patient having meningitis and mastoiditis with absolutely different etiological factors, as proven by extensive laboratory, X-Ray and autopsy study.

Discussion opened by

4. **PLASTIC SURGERY IN AND ABOUT THE EYELIDS.**

RAYMOND J. NUTTING,
Oakland.

1. Pedunculated flaps. Advantage over grafts in certain conditions.

2. Different types of grafts, method of preparation and cutting of same.

3. Open and closed dressings and after treatment.

4. Slides of cases before and after treatment, presented by Walter R. Parker, M. D., Prof. of Ophthalmology, University of Michigan.

Discussion opened by

5. **MOTAIS OPERATION FOR PTOSIS.**

RODERIC O'CONNOR,
San Francisco.

Description of Operation.

Report of seven cases.

Discussion opened by

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

GIVEN UNDER THE AUSPICES OF LEAGUE FOR THE CONSERVATION OF PUBLIC HEALTH.

(Papers will be announced later)

Wednesday Afternoon

2:30 o'clock

EYE, EAR, NOSE AND THROAT SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **THE FUNCTIONS OF THE OTOLITHS OF THE VERTEBRATE EAR.**

S. S. MAXWELL,
Berkeley, Calif.

In the solution of a physiological problem the choice of a suitable animal for experiment is a matter of prime importance. Much of the work of the labyrinth has been done on animals in which the separation of the action of ampullae and otoliths is not possible. For this reason the entire subject is confused by the more or less general accept-

ance of a priori assumptions concerning differences of function of canals and otoliths.

The ears of fishes, especially Selachians, present the most favorable objects for study. A good beginning was made on this by Loeb, but the subject has been clouded rather than elucidated by most of the later workers.

A technique has been developed by the writer which has made possible the removal of either set of structures from the labyrinth with retention of function by the others. The experiments show that the old assumption of a division of functions between ampullae and otoliths so that the former are dynamic and the latter static organs is not supported by the facts. The experiments show in addition that the otolith of the utriculus is capable of performing all the static and all the dynamic functions except that of response to rotation in a horizontal plane. The significance of the planes in which the otoliths lie and the differentiation of function reported by Kubo under Kreidl's auspices was the results of poor technique and unscientific methods.

A protest is made against the current form of speech which refers all equilibrium functions of the labyrinth to the "semicircular canals." The canals have probably no equilibrium functions; the ampullae share these functions with the otoliths.

Discussion opened by

2. **CASE REPORTS OF LABYRINTHITIS.**

ISAAC H. JONES,
Los Angeles.

Abstract of Paper: Mild middle ear involvement; violent internal ear symptoms; large postauricular abscess. Caloric test entirely negative, yet turning test demonstrated that there was no destruction of internal ear.

Discussion opened by

3. **KERATOSIS OF THE CONJUNCTIVA.**

HUGO A. KIEFER,
Los Angeles.

Discussion opened by

4. Title and Abstract to come later

C. B. WOOD,
Los Angeles.

Discussion opened by

Thursday Morning

9:00 o'clock

EYE, EAR, NOSE AND THROAT SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **DIFFERENT OPERATIVE PROCEDURES IN STRABISMUS—COMPARATIVE RESULTS.**

W. S. FRANKLIN,
F. C. CORDES,
W. D. HORNER,
San Francisco.

Fifty cases analyzed. Use of Resection, Tucking and Muscle Clamps. Results variable.

Discussion opened by

2. **AN ANATOMICAL STUDY OF EIGHT CASES OF DEGENERATION OF THE CORNEA.**

C. A. MAGHY,
San Diego.

1. The refractile bodies seen under the oil immersion lens, their staining characteristics and physical properties.

2. Their position in relation to the various structures of the cornea.

3. The nature of the degeneration itself with the pathological conditions under which they are encountered.

Discussion opened by Hans Barkan, San Francisco.

3. **SOME MANIFESTATIONS OF LUES IN THE NOSE.**

GEORGE McCLURE,
Oakland.

Lues as it is ordinarily seen in the Nose. Some unusual cases. Differential diagnosis between these Luetic conditions and Sinus infection.

Discussion opened by

4. **ACUTE LYMPHATIC LEUKEMIA WITH SPECIAL REFERENCE TO THROAT CONDITIONS—REPORT OF A CASE.**

H. D. NEWKIRK,
Anaheim, Calif.

Definition. Reported Cases. Etiology. Symptoms. Diagnosis.

Prognosis and Treatment.

Report of case emphasizing (1) necessity for laboratory work and (2) thorough examination before diagnosis is made in apparently simple cases.

Discussion opened by

Wednesday Morning

9:00 o'clock

UROLOGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **Chairman's Address—THE SPECIALIST AND HIS OBLIGATIONS TO THE PROFESSION.**

GEORGE G. REINLE,
Oakland.

2. **STANDARDIZATION IN UROLOGY.**

HERBERT C. ROSENKRANZ,
Los Angeles.

The essentials of a standard system. Demonstration of a system of history taking. Specimen of standardization. Treatment of acute uncomplicated urethritis gonorrhoea in the male.

Discussion opened by Granville MacGowan, Los Angeles.

3. **STRICTURE OF THE FEMALE URETHRA.**

WILLIAM E. STEVENS,
San Francisco.

Frequency of a condition which is often overlooked. The importance of gonorrhoea as an etiological factor; site of the obstruction; marked symptoms often caused by their condition. Treatment.

Discussion opened by Robert V. Day, Los Angeles.

4. **MANIFESTATIONS OF LESIONS OF THE POSTERIOR URETHRA—ILLUSTRATED BY WAX MODELS.**

LOUIS C. JACOBS,
San Francisco.

Etiology; pathology; clinical course; treatment; case histories.

Discussion opened by William E. Stevens, San Francisco.

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

GIVEN UNDER THE AUSPICES OF LEAGUE FOR THE CONSERVATION OF PUBLIC HEALTH.

(Papers will be announced later)

Wednesday Afternoon

2:30 o'clock

UROLOGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **EXPERIENCES WITH SILVER-SALVARSAN.**

VICTOR G. VECKI,
MILLARD OTTINGER,
San Francisco.

Report of various cases of syphilis treated with intravenous injections of Silver-Salvarsan; results showing remarkable influence upon stubborn manifestations and the Wassermann reaction.

Discussion opened by William E. Stevens, San Francisco.

2. **PROTEIN SHOCK REACTION IN EPIDIDYMITIS.**

W. P. WILLARD,
San Francisco.

Proteins used. Typhoid vaccine most effective and easily obtained. Dose and symptoms resulting from its use. The rapid subsidence of pain and swelling in the epididymis. Comparison with other forms of treatment. Report of cases.

Discussion opened by

3. **PYURIA.**

LEON J. ROTH,
Los Angeles.

Some fallacies of routine examination. Theory of pus cell count as an aid in diagnosis and prognosis. Method of count. Conclusions.

Discussion opened by George W. Hartman, San Francisco.

4. **NEPHRECTOMY IN HUNCHBACKS; WITH REPORT OF TWO CASES.**

CHAS. D. LOCKWOOD,
Pasadena.

Difficulties attending operations in this class of patients. The ordinary technique is impossible. Grave difficulties attend abdominal route, owing to the deepening of the antero-posterior diameter of the abdominal cavity and the shortening of the longitudinal diameter.

Technique: Rectus incision through the lateral abdominal wall. Powerful retraction of the ribs by broad retractors. Ligation of ureter. Dislocation of kidney inward toward the median line. Clamping of the renal vessels. Difficulties of ligation. Retroperitoneal drainage.

Case I. Tuberculosis of the left kidney in an adult with healed Potts disease.

Case II. Papilloma of the kidney pelvis in a man of 79, with profuse hemorrhage. Congenital deformity of the spinal column.

Discussion opened by

Thursday Morning

9:00 o'clock

UROLOGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **PERINEAL PROSTATECTOMY WITH REFERENCE PARTICULARLY TO MODIFICATION OF YOUNG'S METHOD OF ENUCLEATION WHEREBY THE GLAND CAN BE REMOVED COMPLETELY AS IN SUPRAPUBIC OPERATION.**

FRANK HINMAN,
San Francisco.

Review of cases with exhibition of lantern slides and drawings and demonstration.

Discussion opened by Granville MacGowan.

2. **TYPES OF CASES SHOWING CURIOUS DEFORMITIES ALONG THE URINARY TRACT—ILLUSTRATED BY LANTERN SLIDES.**

MARTIN MOLONY,
San Francisco.

I. Two types of vesical diverticula.
(a) (True) congenital diverticulum.
(b) (False) acquired diverticulum.
(c) A case of congenital diverticulum showing the pathology of how a diverticula can destroy both kidneys.

II. A case of congenital deformity of both kidneys and bladder in the same patient complicated with hydronephrosis of both ureters and atony of both ureters.

III. A type of stricture of the ureter with calculus hydronephrosis complicated with bilharzia infection, resulting papilloma of the ureters.

(a) Key picture of the above showing author's method of treating stricture of the ureter and the results four years later.

IV. Congenital diverticulum of the posterior urethra; large enough to take a No. 26 F urethroscope giving a clear view into the wide open seminal vesicles; showing the interior trabeculation and a polypoid growth.

Note: These types of cases which include well marked deformities of the kidneys; the ureters; the bladder, and the urethra were demonstrated during life. These cases bring out the value of pathology in the living in contrast to that of the dead.

Discussion opened by

3. **THE USE OF THE D'ARSONVAL METHOD OF COAGULATION NECROSIS FOR THE REMOVAL OF IMMENSE INTRAVESICAL OUTGROWTHS OF THE PROSTATE, SIMPLE OR MALIGNANT.**

GRANVILLE MacGOWAN,
Los Angeles.

There is a certain type of tumor of the prostate in which the growth is mainly intravesical, and may occupy a very large part or the entire vesical cavity. These tumors are commonly very difficult to enucleate. The dangers attending enucleation are great on account of the numerous vascular sinuses which course over the mucosa and which ramify through the tumor portion, leading to extreme hemorrhage in these cases.

The difficulties of stilling these hemorrhages by the ordinary methods of pressure, through packs, Hagner bags, or by stitches

introduced into the bladder neck. The advantages of having the blood vessels' supply largely cut off by coagulation necrosis before nucleation is attempted. The applicability and advantage of such treatment in case of malignancy, suspected or certain, of these growths.

Report of two interesting cases.

Discussion opened by Robt. V. Day, Los Angeles.

4. **100 CONSECUTIVE PERINEAL PROSTATECTOMIES; ILLUSTRATED BY MOTION PICTURES.**

A. B. CECIL,
Los Angeles.

Discussion of types of prostatectomies. Introduction of Young's perineal prostatectomy. Difference in technique between Young's perineal prostatectomy and median perineal prostatectomy. Critical review of 100 cases, with special reference to operability rate and mortality rate.

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

Thursday Afternoon 2 o'clock

UROLOGICAL SECTION

Discussions will be given at the close, etc., etc.

1. **BLADDER DIVERTICULA.**

ROBERT V. DAY,
Los Angeles.

- (a) Associated Pathology:
1. Condition of bladder neck.
 2. Degree of infection.
 3. Facility of drainage.
 4. Presence of calculus.
 5. Presence and degree of kidney infection.

- (b) Management of Cases:
1. Diagnosis.
 2. Prognosis.
 3. Treatment.

Discussion opened by George W. Hartman, San Francisco.

2. **URETERAL DIVERTICULUM.**

NATHAN G. HALE,
CHAS. E. VonGELDERN,
Sacramento.

1. Embryological aspects of diverticuli.
2. Report of case—history, operation, pathological report, and observation of patient.
3. Literature relating to the subject.

Discussion opened by Lewis Michelson, San Francisco.

3. **REMARKS BY THE SECRETARY.**

GEORGE W. HARTMAN,
San Francisco.

4. **ELECTION OF OFFICERS OF THE SECTION.**

5. **MEETING OF THE WESTERN BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.**

Wednesday Morning

9:00 A. M. to 12 M.

NEUROLOGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **Chairman's Address: THE PSYCHOPATHOLOGY OF SOMATIC DISEASE.**

CHAS. LEWIS ALLEN,
Los Angeles.

The human organism is a whole in which mental manifestations are correlated with physical processes, though as to their exact relations we know little or nothing. A voluminous literature is devoted to those cases in which the mental reactions are manifestly on the pathological side of a very broad and ill-defined boundary, the so-called insanities, but about the less-striking variations which occur in ordinary physical diseases, comparatively little has been written.

Some observations upon the minor pathological variations noted in the medical and surgical material of a large general hospital.

2. **POST-TRAUMATIC NEUROSES; THEIR MECHANISM.**

JOSEPH CATTON,
San Francisco.

A study of the so-called Post-traumatic Neuroses from the viewpoint of an examination of their basic mechanism. A weighing of psychogenesis and organic nervous disease as factors. A consideration of the light thrown on the mechanism by etiological factors, pathology and effect of various forms of handling.

Discussion opened by Howard F. Naffziger, San Francisco.

3. **HYPOTENSION ANXIETY NEUROSIS.**

WALTER F. SCHALLER,
San Francisco.

Routine blood pressure estimation in neurological cases has revealed a frequent association between low blood pressure and the anxiety states. Consideration of etiological factors with particular reference to dysendocrinism. Results of glandular treatment. Outline of future investigations.

Discussion opened by

4. **OBSERVATIONS ON CONSTITUTIONAL INADEQUATE PERSONALITY WITH SPECIAL REFERENCE TO ITS INFLUENCE ON BOTH DIAGNOSIS AND TREATMENT.**

J. ROSS MOORE,
Los Angeles.

1. Definition of the condition called "Constitutional Inadequate State."

- (a) Mental.
- (b) Moral.
- (c) Physical.

2. A consideration of various symptoms which may be due to a constitutional state, and which, are therefore, ineradicable.

3. Citation of cases in which constitutional inadequacy appears.

4. Consideration of the therapy indicated in cases where constitutional inadequacy is a pronounced factor.

Discussion opened by

5. **THE IMPORTANCE OF THE VEGETATIVE SYSTEMS, NERVOUS AND ENDOCRINE, TO CLINICAL MEDICINE.**

F. M. POTTENGER,
Monrovia, Calif.

Symptoms, both subjective and objective, are due to disturbed physiologic function. Function depends upon chemical (endocrine) or nerve control. Symptoms depend on disturbed endocrine or nerve action. The disturbing impulse may be either physical or psychical in origin. The study of the patient and his physiological reactions, both normal and pathological, is one of the most urgent needs of present-day medicine. The relationship of neurology and psychiatry to general medicine.

Discussion opened by

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

Given under the auspices of League for the Conservation of Public Health.
(Papers will be announced later)

Thursday Morning

9:00 A. M. to 12 M.

NEUROLOGICAL SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. **FURTHER OBSERVATIONS ON EPILEPSY.**

MILTON B. LENNON,
San Francisco.

Factors in etiology of the symptoms of complex epilepsy; the relation between the number of fits and mental defect; the necessity of proper optimism on the part of the physician who treats epilepsy.

Discussion opened by

2. **COMBINED SYSTEM DISEASE (A CLINICAL AND PATHOLOGICAL STUDY OF FUNICULAR MYELITIS WITH A REPORT OF FIVE CASES WITH AUTOPSIES).**

G. Y. RUSK,
RICHARD W. HARVEY,
E. S. Du BRAY,
San Francisco.

- I. The historical growth of our knowledge of the subject.
- II. Etiological consideration, with a brief discussion of the role played by the various noxae and associated conditions.
- III. Pathogenesis with special reference to the neuropathology.
- IV. Case reports with autopsy protocols.
- V. The clinical picture with a discussion of the three chief types.
- VI. Differential diagnosis.
- VII. Summary with a plea for a wider recognition of this disease.

Illustrated by slides, charts, photographs and pathological material.

Discussion opened by

3. **MENINGITIC EPILEPSY, DIAGNOSIS AND RADICAL CURE.**

CECIL E. REYNOLDS,
Los Angeles.

Discussion opened by

4. **NEUROLOGICAL SYMPTOMS IN ONE THOUSAND GROUP STUDY CASES.**

THOMAS G. INMAN,
San Francisco.

Differences between "Group Study" and "Group Practice" defined. Types of cases examined. Neurological symptoms in the light of the complete examination. The question of multiple factors in the causation of neurological symptoms. Disturbances in function of the nervous system as first evidences of somatic pathology.

Discussion opened by

5. **TICS AND THEIR TREATMENT.**

THOMAS C. LITTLE,
San Diego.

Brief historical résumé, etiological foundation, the intelligence and general mental condition of the subject, course with its variations, final termination based upon the subject's constitutional state.

Discussion opened by

Book Reviews

Eye, Ear, Nose and Throat. Edited by C. L. Mix. Vol. 3 of Practical Medicine Series for 1920. Chicago: Yearbook Publishers, 1920.

Eye. Examination of eye. Hygiene of eye. Eyelids. Conjunctiva. Lachrymal sac. Sclera and cornea. Uveal tract. Vitreous humor. Crystalline lens. Retina and optic nerve. Ocular muscles. Toxic amblyopia. Glaucoma. Tumors of eye. Eye symptoms in general disease. Ocular injuries. Military ophthalmology. Ophthalmic therapeutics. Ophthalmic instruments. Comparative ophthalmology.

Ear. Relation of otology and general medicine. Hearing and deafness. Middle ear. Sinuses. Internal ear. Miscellaneous ear conditions.

Nose and Throat. General considerations. Diseases of nose. Accessory sinuses. Ozena. Hay-fever. Esophagus and bronchi. Tonsils and adenoids. Larynx and trachea. Speech defects.

Massage and Exercise Combined. By Albrecht Jensen. 93 pp. Illustrated. New York. 1920.

That massage and exercises have beneficial results upon the healthy as well as upon certain diseased individuals is an axiom which requires no proof.

The "combined massage exercises," described in this book, are no exception to this rule. The book describes in detail and with many illustrations a series of exercises and massage combined, which when executed with proper deep breathing will hasten metabolism, increase circulation and favor elimination. This benefit lies in making the person who does them bring into action his joints, muscles and respiratory organs and in making him concentrate his attention on them. The supplement on the use of these exercises in disease is incomplete and unauthoritative. A. G.

Materia Medica For Nurses. By A. L. Muirhead. 183 pages. Illustrated. St. Louis: C. V. Mosby Company. 1919. Price, \$1.50.

This book impresses one favorably as a compendium, but not as a textbook—it is rather too superficial for that. It is a book for the graduate rather than for the nurse in training. It is an aid to memory rather than a guide to knowledge. To the graduate, however, it should prove invaluable for it describes drugs, actions, and does in a few words, makes the preparation of solutions very simple, reduces the various systems, weights and measures to their most simple forms and gives a great deal of useful information. The subject matter seems too condensed for the nurse in training who is expected to know a great deal more about the drugs she uses than she will find in the pages of this little book. M. A. C.

Pediatrics and Orthopedic Surgery. Edited by C. L. Mix. Vol. 4 of Practical Medicine Series for 1920. Chicago: Yearbook Publishers, 1920.

Pediatrics. The newborn. Infant feeding. Child welfare. Nutritional disturbances. Gastro-intestinal diseases. Rickets and scurvy. Tetany. Acute infectious diseases. Respiratory diseases. Heart diseases. Diseases of nervous system. Diseases of urinary organs. Diseases of ductless glands. Diseases of skin. The blood. Tuberculosis. Syphilis. Miscellaneous conditions.

Orthopedic Surgery. General conditions. Injuries and diseases of the spine. Upper extremity. Lower extremity. Bone surgery. Joints. Nerve injuries.

General Surgery. Edited by A. J. Oeschner. Vol. 2 of Practical Medicine Series for 1920. Chicago: Yearbook Publishers, 1920.

Anesthetics and analgesics. X-Ray-Radiotherapy. New Instruments. Asepsis and antisepsis. Infected

wounds and their treatment. Operative technic. Amputations. Wound healing and pathologic interventions. Shock. Tetanus. Malignant tumors. Blood vessels. Transfusion. Bones, Fractures. Joints. Nerves. Scalp and skull. Brain. Face and mouth. Neck. Thyroid. Mamma. Chest. Empyema. Pericardium and heart. Abdominal surgery. Peritoneum, mesentery and omentum. Stomach and duodenum. Intestinal surgery. Intestines. Veriform appendix. Rectum and anus. Hernia. Liver. Gall-Bladder and bile-ducts. Pancreatitis. Spleen. Kidney. Bladder. Spine and cord. Upper extremity. Lower extremity.

The Soul, or Rational Psychology. By Emanuel Swedenborg. Third and revised edition. The New Church Press, Inc., New York.

This is another one of the works of Emanuel Swedenborg and designed for those who have a thirst for knowledge of the unknown. In modern religion, of course, Swedenborg was the first man to bring out the philosophy of correspondence and symbolism, and while many existing religions at the same time decried his interpretation of biblical meaning, they have since adopted a great many of the ideas of Swedenborg. From a medical standpoint, it is extremely interesting to see how much real knowledge Swedenborg had. He seemed to be cognizant of all the anatomical and physiological facts of his age, and he has made these the basis of his metaphysical deductions. For one who can follow him they are a source of great consolation and certainly very few of the developments of the Christian religion can claim such a logical basis. However, one is reminded of the old Scotch preacher who said, "If a man speaks of something about which he knows very little, that is foolishness. If a man talks of something about which you know nothing, that is wisdom. If a man talks of something about which neither of you know anything, that is metaphysics." So, I am rather inclined to think that a great many of the writings of Swedenborg fall under the last classification.

S. P.

The Surgical Clinics of Chicago. Volume IV, Number V (June, 1920). Octavo of 223 pages, 45 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Published bi-monthly. Price per year: Paper, \$12.00; Cloth, \$16.00 net.

E. Wyllys and Edmund Andrews and C. L. Mix: "Dumping stomach" and other results of gastrojejunostomy. D. C. Strauss: Perinephritic abscess—tuberculosis of kidney—subcapsular nephrectomy. A. D. Bevan and L. C. Gatewood: Mesenteric fibroma. A. D. Bevan: Dislocation of patella. G. L. McWhorter: Salpingitis with lateral lumbovertebral pain. R. J. Tivnen: Congenital cataract binocular complicated by large persistent thymus gland. Endothelioma of orbit. Extradural abscess. Kellogg Speed: Burns. Carl Beck: Suture of nerves and tendons of wrist. A. A. Strauss: Various methods of blood transfusion as most applicable in various ages. A. J. Ochsner: Rupture of gall-bladder into duodenum. D. N. Eisendrath: Infections of kidney. F. G. Dyas: Compound fracture of femur in child. Cholelithiasis with biliary fistula discharging at umbilicus. Tetanus following a contused and lacerated wound of leg. A. B. Kanavel: Hematuria. E. L. Moorhead: Chronic ulcer of leg treated by skin-grafting. Multiple tumors of thyroid. Chronic duodenal ulcer. G. E. Shambaugh: Bilateral destruction of labyrinth as sequel of chronic suppurative otitis media. Impairment of hearing due to fracture at base of skull. Cerebral nerve deafness. Aural vertigo due to degeneration of vestibular nerve without involvement of cochlea. E. L. Cornell: Caesarean section for placenta praevia. R. L. Moodie: Surgery and disease among the pre-Columbian Indians of North America.

Care and Feeding of Infants and Children. By Walter Reeve Ramsey. 2nd ed. Philadelphia: Lippincott. 1920.

This volume gave promise of fulfilling a long-felt need, that of a good medical text book for nurses, with the proper amount of emphasis laid on nursing procedures in the care and feeding of children. These phases are excellently dealt with in the first part of the book where many valuable suggestions are well brought out and emphasized, making it valuable aid in the training of good nurses.

The second half of the book, however, is neither a nurse's text book nor could it be of much help to the physician. Pathological entities are here described so vaguely that, were a nurse interested in diagnosing a medical case, she could find little in these pages to help her. For the same reason the work must fail as a physician's handbook, while at the same time the important problems of nursing as they occur in such diseases as scarlet fever, diphtheria, smallpox, eczema and bronchopneumonia are most inadequately dealt with.

It is the tendency of the modern nurse to assume unwarranted knowledge of those phases of medicine for which her training has but partially informed her and to overlook as uninteresting and perhaps as of only slight importance the exact nursing technique which is so essential a part of treatment.

The author has certainly taken advantage of the best way of teaching—that of using good illustrations. They are all very excellent, especially those illustrating formula making, and the methods of breast and bottle feeding.

M. M.

State Society

ANNUAL CONVENTION MEDICAL SOCIETY, STATE OF CALIFORNIA, CORONADO, CAL., MAY 10-11-12, 1921

The Southern Pacific Company will make reduced rates from points in California on Receipt Certificate Plan, namely, one and one-half fare subject to minimum attendance of 150 paying fare by rail on going trip of one dollar or more. The rates will apply to and from San Diego.

Sale dates on going trip will be May 7 to 11, inclusive, and returning May 11 to 14, inclusive.

Delegates should buy one-way tickets on going trip, and if all requirements as to minimum attendance have been complied with, the one-half fare will be granted returning. In notifying your members of these arrangements I suggest that you caution them to be sure and obtain receipt certificates when purchasing the going tickets.

It should be noted that the fares will apply to and from San Diego, i. e., members should buy their one-way tickets on the going trip to San Diego and obtain their return tickets at San Diego.

THE RECEIPT CERTIFICATES MUST BE LEFT AT THE REGISTRATION DESK OF THE MEDICAL SOCIETY IN THE HOTEL.

STATE SOCIETY, 1921

Important Notice—to Contributing Members of the Indemnity Defense Fund

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed a week in advance of the due date of his note.

County Societies

ALAMEDA COUNTY

The regular monthly meeting of the Alameda County Medical Association was held at the Public Health Center, January 17, and the following interesting program, which had been prepared by Dr. E. N. Ewer, was presented:

1. Report of an unusual case of Ectopic Gestation, by Dr. Daniel Crosby.

2. Treatment of Cervicitis, by Dr. Clarence A. De Puy.

This paper, which was well illustrated by excellent lantern slides, went into the etiology and pathology of cervicitis. The inutility of palliative treatment of this condition was well shown, and a plea made for radical operative treatment, preferably by the Sturundorf method.

3. Dr. E. N. Ewer read a paper, "The Scar in Repeated Caesarians."

In this paper was presented the observations of a careful operator and the conclusions drawn from a wealth of experience.

New members elected were:

Dr. R. W. Kraft, Dr. Raymond J. Nutting, Dr. J. M. Carter.

The following made application for membership: Drs. Curtis A. Wherry, Frank S. Baxter, F. H. Stibbens, George McClure, J. Wallace De Witt.

A meeting of the Visiting and Resident Staff of The Alameda County Hospital was held at the Public Health Center, January 24.

Hospital standardization forms were considered and discussed at some length.

The regular monthly analysis of hospital service was instructive as showing the proportion of error as between admitting diagnosis and final diagnosis.

Providence Hospital management, on February 7, called a meeting of the medical men invited to form an organization of the Staff of Providence Hospital.

Progress was made to the extent of the adoption of a set of by-laws and an acceptance of the standardization requirements of the American College of Surgeons.

The staff of Samuel Merritt Hospital met February 7 at the hospital. The program consisted of:

An instructive demonstration by Dr. A. C. Siefert, of the Rieber X-ray unit and fluoroscopic table.

Dr. Wm. H. Sargent read a paper entitled, "Review of Advances made in Radium Therapeutics." The paper was ably discussed by many members.

A paper entitled, "Critique on Methods of Treating Hip-Joint Fractures," was read by Dr. Geo. Rothganger.

At this meeting there was held the annual election of officers. The following were elected to office:

President, Dr. Hubert N. Rowell, Vice-President, Dr. Geo. Rothganger; Secretary, Dr. Robert Glenn.

CONTRA COSTA COUNTY

The first meeting of this year was called to order by President G. M. O'Malley at Richmond. Minutes of the previous meeting were read and approved.

Applications for membership were received from Doctors S. H. Marks, E. C. Love, and G. M. Bumgarner.

As there were several topics to be brought up for discussion before the Society, no regular speaker was provided for the evening.

Dr. C. R. Blake, health officer of Richmond, rendered an unusually favorable report on the mortality and morbidity statistics of his city during the past year.

A program and entertainment committee consisting of Doctors U. S. Abbott, J. B. Spalding and Hall Vestal was appointed for this year.

Before adjourning a light luncheon was served.

KERN COUNTY

The officers of the Kern County Medical Society for 1921, are as follows:

President, Dr. E. S. Fogg; Vice-President, Dr. O. P. Goodall; Secretary, Dr. Joe Smith; Delegate, Dr. F. J. Gundry.

FRESNO COUNTY

A meeting of the Fresno County Medical So-

ciety was held Tuesday evening, February 1, at the Commercial Club. Letters of transfer were issued to Dr. Van Meter, to the Los Angeles County Medical Association and to Dr. Joseph J. Levy, to the Ocean County Medical Society of Ocean County, N. J.

The following new members were elected, on presentation of transfer cards from other societies:

Dr. Roland B. Tupper, from San Francisco County Medical Society, Drs. C. Weltman and Chas. E. Mordoff from the Los Angeles County Medical Association.

The President appointed as the Committee of Ethics, Drs. C. O. Mitchell, G. W. Walker, A. S. Parker. The following were appointed as the Board of Censors: Drs. Pettis, Wiese, Kjaerbye.

Dr. A. B. Cecil read a paper entitled "One Hundred Consecutive Perineal Prostatectomies" which was much appreciated by the large number of doctors present. Dr. Cecil illustrated his lecture with lantern slides and also with motion pictures showing in detail the various steps of the operation.

After a discussion of this very interesting and instructive paper, the meeting adjourned.

LOS ANGELES COUNTY

Regular Meeting, January 6, 1921

The Los Angeles County Medical Association met at the Friday Morning Club Hall, 940 S. Figueroa Street, 8 p. m.

Dr. Brem, the new president, opened the meeting.

Under new business, Dr. E. C. Moore read resolutions in reference to a city ordinance, passed December 2, 1920, which makes it unlawful to erect and maintain hospitals, sanitarium, etc., within a certain zone. The law was intended to keep these institutions out of the residence district. The motion that something be done to correct this wrong was unanimously carried.

The secretary, Dr. Harlan Shoemaker, was absent because of illness.

Dr. W. W. Richardson spoke at length on the surgery of the knee-joint.

Dr. Hartwick passed around pictures of a fractured patella he had treated in 1888, when opening the knee-joint meant 25 per cent. death.

Dr. E. C. Moore spoke on intra-abdominal hemorrhage from ruptured corpus luteum.

Dr. Brem introduced Mr. Samuel H. Green, secretary of the California Dairy Council, who spoke on "Newer Nutrition."

Regular Scientific Meeting of January 20, at the usual place and time.

Dr. Walter V. Brem, the president, opened the meeting and referred to the resolution on the outfall sewer which was passed by the Council. He introduced Mr. W. T. Knowlton, Engineer City Sewer Department, who spoke on this subject.

"Reveries of a General Practitioner" was read by Dr. Michael Creamer. Dr. Creamer reviewed in pleasant humor many of the facts which are the faults of ourselves and our competing confrères.

League for the Conservation of Public Health

At the Ebell Club House, 18th and S. Figueroa Streets, January 29, 8 p. m., the League held its meeting.

Dr. Granville MacGowan, the president, opened the meeting and asked Dr. Smith to announce the purposes of the Society.

Mr. C. J. Sullivan, the executive secretary, read the annual report of the work done and of the receipts, expenditures and cash on hand. He told of legislation in the matter of Public Health.

Dr. Mosgrove spoke interestingly of hospitals as an educational factor.

Dr. John Haynes talked on the proposition of the separate Examining Boards.

Dr. Walter V. Brem urged every member of the County Society to join and follow the leaders, that

it is necessary to have concerted action to be effective.

Fiftieth Anniversary of the Los Angeles County Medical Association.

January 31, at 6:30 in the new Ambassador Hotel, five hundred members of the Medical Society, accompanied by their ladies, celebrated and banqueted to honor Dr. Walter Lindley, Dr. Joseph Kurtz and Dr. J. P. Widney, the surviving founders of the organization which now numbers eleven hundred.

Dr. Walter V. Brem, the president, welcomed the honored guests and spoke of the medical pioneers in history and of the evolution of medical science.

Dr. W. T. McArthur, as toastmaster, kept his audience in good humor and in bursts of laughter at his sallies of wit.

Rt. Rev. John J. Cantwell spoke on "Our Philanthropic Institutions."

Mr. Celestine J. Sullivan told of the work of the profession and of the League for the Conservation of Public Health. Eloquently he dwelt on "Laying the Foundation."

Hon. William D. Stephens' subject was "The Well-being of the State."

Rt. Rev. W. Bertrand Stevens spoke of "Doctors and Bishops," in what respects they resembled one another.

Dr. Harlan Shoemaker, the secretary of the Society, talked to the point on "The Outlook."

Rabbi Edgar F. Magnin said some humorous things under the title of "As Others See Us."

Dr. Joseph Kurtz, one of the honored founders, made many amusing remarks about "Early Days."

Dr. Walter Lindley, pioneer and one of the three surviving founders, was assigned the subject of "our Fiftieth Anniversary." He told of his many ambitious hopes that ended like wrecked ships but that now some enterprises have raised hopes and sails on the ships speeding to success.

Mr. Frederick Ward, Shakespearian actor, entertained the gathering on "Doctors and Drama." He pointed out that Shakespeare and the present stage depict the doctor as he is—"honi soi qui mal y pense!"

The Committee who arranged this affair consisted of Dr. Harlan Shoemaker, chairman, Dr. Stanley Black, Dr. Geo. Piness.

Personals

Dr. Michael Creamer was elected by the Council of the Los Angeles County Medical Association to serve as county editor State Journal of Medicine.

The Pasadena Diagnostic Group, consists of the following associates: Chas. D. Lockwood, Surgery; Frederick A. Speik, Internal Medicine; Raymond Mixsell, Diseases of Children; Paul A. Ferrer, Urology and Surgery; G. F. Ruediger, Pathology and Bacteriology; J. M. Wilson, Internal Medicine; Carl H. Parker, Roentgenology; Robert L. I. Smith, Obstetrics; William Arthur Clark, Orthopedic Surgery.

Dr. Albert Soiland returned January 5 from the East. Dr. Soiland was elected president of the Radiological Society of North America while at the convention in Chicago.

Dr. B. R. Mace was honored by the Elks on his first anniversary as Exalter Ruler. During this year he was instrumental in paying off the mortgage on the club house, buying and paying for a lot to put up a building costing \$2,000,000.

Dr. Elmer E. Stone, former superintendent of the Napa State Hospital for the Insane, has married Mrs. B. Elise Joy.

Dr. Lulu Peters lectured at the Ebell Club in aid of the starving children of Eastern and Central Europe. Dr. Peters served for twenty months among the Albanians and Serbians. The daily life of these people was shown by aid of over a hundred lantern slides.

Hospitals

LUTHERAN HOSPITAL

The California Hospital which was recently purchased by the Lutheran Society was taken over January 10 by Rev. W. S. Dysinger, pastor of the First English Lutheran Church. The price was \$350,000. The charity ward will admit persons of any faith.

OLIVE VIEW SANITARIUM

The new hospital was opened January 9 to tubercular patients, according to Norman R. Martin, superintendent of the Los Angeles County Hospital. Adults with definite tuberculosis who are ambulant and in the early stage are admitted, also those whose disease can be arrested. They must be citizens unable to pay and must have resided in the county one year.

Los Angeles Tuberculosis Association

The Los Angeles Tuberculosis Association elected officers at the annual meeting and planned greater activities for the year coming.

ST. LUKE'S HOSPITAL

This hospital recently incorporated in Santa Monica will be built at a cost of \$200,000. The officers elected are Dr. E. C. Halliday, president; Dr. Robert O'Neal, first vice-president; Dr. C. W. Craik, second vice-president; A. L. Shipley, treasurer, and Wyllys Abbot, secretary. The directors are: Mayor A. E. Coles of Venice; Drs. C. W. Craik, Robert O'Neil and I. L. Magee of the same place; Dr. E. C. Halliday, of the Venice Receiving Hospital; Phillip H. Koshler of Los Angeles, and A. L. Shipley, president of the First National Bank of Venice.

Deaths

Dr. F. M. Linkogle, 741 W. Ivy St., Glendale, California, aged 67; died October 19, 1920 from sarcoma of left jaw and neck.

Dr. Andrew O. Conrad, 104 S. Brand Blvd., Glendale, California Medical College; California, November 23, 1892; licensed November 23, 1893; member of the Glendale Elks Club, Knights of Pythias, Newport Harbor Yacht Club and Glendale Physician's Club. He was born in San Francisco, March 13, 1880; died from cancer, the after-effects of X-ray burns suffered twelve years ago, December 25, 1920.

He is survived by a sister, Mrs. N. J. Lindendfeld, and a brother, Charles R. Conrad.

Dr. John Stewart Gordon, 1225 W. 6th St., offices in the Baker-Detwiler Bldg., L. A.; a native of Pictou Co., Nova Scotia; Coll. of Phys. and Surg., Iowa, February 26, 1889; for thirty years a practitioner of Ogden, Utah; past eminent commander of El Monte Commandery of Ogden, Utah, a Shriner of Al Malaikah Temple in Los Angeles; a member of the Caledonian Society and of the Odd Fellows.

He was a city physician and county physician a number of times in Ogden, and was president of the Ogden General Hospital and surgeon for the Southern Pacific Railroad; aged 66; was run over and killed by a motor-truck, January 5, 1921.

ORANGE COUNTY

At the February meeting of the Orange County Society it was decided unanimously to have the business of the society cared for by a managing board composed of the president, vice-president, secretary, treasurer and three councilors. This board will report to the society the business transacted during the month. A monthly bulletin will be issued. A committee composed of Drs. Ball, Domann and Myers was appointed to make changes in the by-laws to conform with the above.

Drs. Wehrly, Crawford and Johnston were appointed a committee to arrange for a one day's session at some point in the county for a tuberculosis clinic, which will be given in the near future.

Drs. Yeagle and Smith were elected to membership.

The society listened to a very interesting paper by Dr. A. L. Bramkamp of Banning on "The Diagnosis of Advanced Pulmonary Tuberculosis." The paper brought forth a very interesting discussion, about a dozen of the members of the society taking part.

Dr. Bessica Raische of Anaheim read a paper on "Modern Obstetrics." The doctor had just returned from visiting eastern obstetrical clinics and had many new things to tell the society. Her paper was well received and thoroughly discussed.

Before adjournment a vote of thanks was tendered to Dr. Bramkamp for reading to the society his valuable and interesting paper.

Dr. A. H. Galvin of Springfield, Mass., has taken charge of the Orthopedic Department at the Johnston-Wickett clinic.

Dr. Priestley Osburn, until recently of the Johnston-Wickett clinic, has opened an office in San Diego and will limit his practice to internal medicine and diabetes. The doctor's many friends in Orange County wish him much success in his new field.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY

During the month of January, 1921, the following meetings were held:

Tuesday, January 11—General Meeting

1. Some observations on the distribution of botulism.....J. C. Geiger
2. The bacteriology of B. botulinus..K. F. Meyer
3. The diagnosis and treatment of botulism..... E. C. Dickson

Tuesday, January 18—Committee on Industrial Medicine

1. Methods of determining permanent disability ratings.....F. E. Raynes
2. Relationship between trauma and malignant disease from an industrial viewpoint..... Wm. Ophuls
3. Injuries to the knee.....Jas. Eaves

Tuesday, January 25—Section on Eye, Ear, Nose and Throat

1. Melanosarcoma of the choroid..... Hans Barkan, E. F. Glaser, J. J. Kingwell
2. Congenital paralysis of the external and internal rectus muscles of one eye with binocular vision in position of rest..... W. F. Blake
3. Temporary scotoma following air embolus from injection of the nasal septum..H. B. Graham
4. Cerebellar pontile angle tumor. Disturbance of gait and nystagmus following influenza.....H. Y. McNaught
5. Fistula from the external auditory canal to the pharynx.....C. F. Welty
6. Observations on a European trip..... Kaspar Pischel

NORTHERN CALIFORNIA SOCIETY ANESTHETISTS

At the regular monthly meeting of the Northern California Society of Anesthetists, held January 14, 1921, at rooms of the San Francisco County Medical Society, Dr. Saxton T. Pope gave an interesting paper on operative shock.

SANTA BARBARA COUNTY

There has recently been organized in Santa Barbara by Dr. Rexwald Brown a group of doctors under the name of "The Santa Barbara Clinic." Doctor Brown will be the surgeon member of the group; Dr. Benjamin Bakewell will practice obstetrics and pediatrics; Drs. Hilmar O. Koefod, H. E. Henderson, and Hugh Freidell, internal medicine; Dr. H. J. Profant, ear, nose and throat; and Dr. George F. Farman, urology. Their offices are in a new building at 1421 State, erected for the group.

SAN JOAQUIN

The regular meeting of the San Joaquin County Medical Society was held Friday evening, January 14 at the Chamber of Commerce quarters, President L. R. Johnson presiding. Those present were Drs. L. R. Johnson, Minerva Goodman, H. S. Chapman, W. T. McNeil, W. P. Lynch, J. V. Craviotto, G. J. Vischi, N. E. Williamson, C. D. Holliger, S. F. Priestly, W. F. Priestly, J. T. Davison, Margaret Smythe, A. H. McLeish, L. Dozier, J. P. Martin, R. T. McGurk, B. F. Walker, F. S. Marnell and D. R. Powell.

The minutes of the previous meeting were read and approved. Announcement was made of the expected arrival on the following day of the body of Miss Elizabeth Lee, en route from France where she passed away while in the Army Nursing Corps, to her home at Altaville for final interment. A committee of the President and Secretary and Drs. Craviotto, Goodman and Chapman was appointed to attend the ceremonies at the depot as official representatives of the Medical Society.

The paper of the evening was on the "Treatment of Diabetes" by Dr. T. Addis of the Stanford University Hospital Staff. It was an interesting review of his studies on diabetes at the Lane Hospital, and emphasized the necessity of accuracy of diagnosis in this particular metabolic disease and pointed out the importance of the blood chemistry researches. The discussion which followed and the practical questions asked, indicated a lively interest in the subject and a full appreciation of the opportunity of listening to a scientific discourse on diabetes from a recognized authority on the subject.

SANTA CRUZ

The Society met in the office of Dr. Liles and the following members were present:

Doctors Watters, Sambuck, A. L. Phillips, P. T. Phillips, Liles, Easterday, Cutter, Burch, Fehlmen, Dowling and Nittler.

After the reading of the minutes of the last meeting, and the disposal of routine business, the Society proceeded to the election of officers for the ensuing year, with the following result:

President, Dr. Cothran; First Vice-President, Dr. H. G. Watters; Second Vice-President, Dr. J. B. Cutter; Secretary and Treasurer, Dr. A. N. Nittler; Delegate to the coming meeting of the State Society, Dr. P. T. Phillips; Alternate, Dr. A. N. Nittler; Censor, 1923, Dr. A. L. Phillips; Corresponding Editor of the State Journal of Medicine, for Santa Cruz County, Dr. J. B. Cutter.

Following the election of officers, the Society proceeded to the consideration of the scientific program of the evening, and an informal discourse on the subject of scarlet fever, was opened by Dr. Liles which was freely discussed by the members present.

The piece de resistance of the evening was the illuminating report presented by Dr. P. T. Phillips on the present status of the medical law of California, more particularly in regard to its bearing on the control and suppression of the wave of illegitimate practice at present sweeping over the state, and an edifying account of the minute technicalities of the law was explained to the members, the activities of the League for the Conservation of the Public Health, and the gratifying result of the conviction of some fifteen chiropractors weekly, largely through its instrumentality, working in harmony with the State Board of Health and the Board of Medical Examiners, was reported.

After some moments of agreeable social intercourse among the members, the meeting adjourned.

TULARE-KINGS COUNTY

The February meeting of the Tulare County Medical Society was held at Hotel Johnson, Visalia, February 6.

After a dinner at the hotel, Dr. Hans Lisser

of San Francisco gave an address, illustrated by photos, on "Internal Secretions," laying stress upon what is actually known regarding the ductless glands and their secretions rather than what is only surmised.

Action was also taken at this meeting to cooperate with the effort of the State Tuberculosis Association toward improving the work of the general practitioner in the early diagnosis of tuberculosis, through sending special clinical teachers to meet with medical society units throughout the state.

Clinical Department

GALL BLADDER FOCALIZATION AND ITS NON-SURGICAL TREATMENT

By James B. Luckie, M. D., Pasadena, California.

In many cases of cholecystitis, choledochitis and cholelithiasis the patient can be saved operation and the systemic symptoms can be relieved or alleviated, by employment of the Lyon method of biliary drainage.

Having seen no reference in the literature regarding the relief of secondary symptoms by this method, I take this opportunity to present this case as an example of the great possibilities that the procedure offers:

Case I.—A trained nurse 51 years of age presented herself with the following complaints: Headaches of a severe character every few days. Fingers aching and stiff, the metacarpal joints swollen and tender, incapacitating her for work. This has been progressing for the last 9 years.

History revealed nothing of importance other than an irregular, atypical, digestive disturbance dating back 14 years. This disturbance at times caused burning sensation in epigastric region and now and then a vomiting attack. Food seemed to have no effect on the attacks nor had any remedy that had been prescribed relieved them. There was never distinct colic.

Examination showed a pale, anemic-appearing individual of spare build, the fingers tender and swollen at metacarpal articulations. Teeth and tonsils and all ordinary sources of infection were examined and found negative. The physical examination was negative except for a slight tenderness in the right hypogastric region corresponding to the gall bladder point.

All laboratory reports came back negative except for a secondary anemia. A fractional meal was given and the contents removed every fifteen minutes until stomach was emptied. This revealed a delayed acid curve and a slightly delayed emptying time. The next morning a duodenal tube with the Lyon tip was passed and Lyon's method of biliary drainage was tried. The A bile was clear of a lemon color but had flakes of pus in suspension. It amounted to 28 cc. The B bile was dark, about the color of ripe olives, contained long shreds of mucus and was twice as viscid as the A bile. It amounted to 136 cc. Microscopically it contained many pus and epithelial cells, many motile bacteria and crystals. Staining showed a bacillus and a streptococcus. Cultures of the biles resulted as follows:

A bile, colon bacilli of typhoid-colon group.

B bile, streptococci and colon bacilli of typhoid-colon group.

The patient was instructed to return in one week for another drainage. Upon her return she reported that she felt greatly relieved, there had been no headaches or indigestion and her head felt clearer. The second drainage gave the same results with the exception of the B bile. This amounted to 100 cc. and was two or three shades lighter than before; the mucus was still present. Cultures gave the same results. Patient was instructed as before. Upon her third visit the hands

had lost their tenderness and there was no pain. She could flex the fingers with ease and the swelling had diminished. She was drained at weekly intervals and after the fifth treatment all symptoms had disappeared. The culture of B bile, however, still gave a weak growth of streptococci.

She has continued at weekly intervals and is back at work and after a period of seven months has had no return of symptoms. The streptococci disappeared after the tenth drainage and have not been found since. Several other cases of like character have been studied.

208 Dodworth Bldg.

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. 3, December, 1920. Female. American. Age, 4 years. No. 26224. F. K.

Complaint—Splenomegaly and enlarged liver.

Family History—She is the only child. Father and mother living and well. Several years previous to entrance of patient father had given slightly positive Wassermann reaction. Otherwise family history negative.

Past History—Child had lived in China and Hawaii for 8 months just previous to entrance to hospital. She had never been sick and had never had any chills or temperature.

Family History—Showed a small underdeveloped, poorly nourished, excitable child. Skin was pale and her conjunctiva showed a marked pallor. There was some oedema of the face, especially marked under the lower lids. Tonsils were large and cryptic. There were a few glands in the servical region but they were not markedly enlarged. Otherwise her glandular system was negative except for marked increase of the tracheo-bronchial chain of glands. Chest examination except for the D'Espine's sign down to the sixth dorsal interspace was negative. Her heart was slightly enlarged to the left and there was a soft systolic murmur hemic in type. Her abdomen was full. Her liver could be felt 4 cm. below the costal margin and was smooth, firm and not tender. Spleen was palpable 3½ cm. below the costal margin, extending to just above the crest of the ileum. It was not tender. There were two or three ecchymotic areas 4x5 cm. on the thighs. Von Pirquet and blood Wassermann, Widal reaction, blood cultures and bacterial examinations of the stools were all negative. Her blood picture was interesting from the fact that she showed a definite lymphocytosis with a marked leucopenia and signs of slight secondary anemia. The typical blood pictures noted for over three weeks were:

| | Hb. % | Red Cells | White Cells | Neutrophils | Eosinophiles | Basophiles | Lymphocytes | Large Monos. and Lymphocytes | Transitional Cells |
|------|-------|-----------|-------------|-------------|--------------|------------|-------------|------------------------------|--------------------|
| Dec. | 8 | 80 | 3,846,000 | 4,800 | 23 | 0 | 0 | 63 | 14 |
| " | 11 | 80 | 4,253,000 | 13,000 | 20 | 0 | 0 | 49 | 31 |
| " | 12 | ..... | ..... | 29,000 | 17 | 0 | 0 | 57 | 26 |
| " | 15 | 80 | 4,757,000 | 19,000 | 22 | 0 | 0 | 62 | 56 |
| " | 20 | 85 | 4,352,000 | 6,400 | 17 | 0 | 1 | 33 | 49 |
| " | 30 | 80 | 4,160,000 | 3,400 | 36 | 0 | 0 | 26 | 38 |

Occasionally the red blood cells showed pallor, irregularity of outline and staining reaction, but no parasites were seen. The large and small mononuclears were less easily distinguishable than in many normal blood pictures.

During her stay in the hospital between December 11th and 15th, she developed tonsillitis and had a slight temperature which went up to

39.6° C. one day. During this period there was an increase in the white cells but no change in the differential count, the lymphocytes remaining high. This was an unusual reaction for an acute infection and with a splenomegaly tended to complicate the diagnosis.

Treatment—Because the Wassermann reaction of the father was positive she was put on anti-luetic treatment, it being thought that the condition was probably due to a luetic infection notwithstanding the fact that her own blood serum gave a negative Wassermann reaction. On this treatment her spleen has been reduced in size and her blood returned to practically normal. The leucopenia disappeared and the differential count became normal. Her blood platelets during the period of the leucopenia were not decreased. This is an important finding because in certain periods in lymphatic leukemia there is a definite leucopenia but usually it is associated with a decrease in the platelets and this supposition was somewhat supported clinically by the fact that she had several areas of ecchymosis.

Discussion—Splenomegaly during infancy and childhood is not an uncommon finding and usually raises the question whether it is a secondary process or whether it is a sign of beginning lymphatic leukemia. The repeated study of the blood in such cases is the only way a differential diagnosis can be arrived at and this is occasionally complicated as in this case by the fact that there was a leucopenia present. Von Jaksch's anemia must be considered as a possibility. In von Jaksch's there is usually a slight leucocytosis though this is not always true and at times a similar blood picture may be met as in this case. The probable diagnosis in this case rested on the fact that the father had had a positive Wassermann reaction and that in delayed congenital lues at times the only sign found is an enlarged spleen and liver. This should always be considered when the blood picture is not characteristic of a definite primary splenomegaly and the parents' blood should always be tested out in such cases. The fact that she has improved under anti-luetic treatment proves that this was a case of congenital lues. Prognosis from this standpoint is good though congenital lues of this type should always be kept under observation for a long period and should have intermittent periods of treatment extending over years.

Obituary

DR. J. O. HIRSCHFELDER, SAN FRANCISCO.

Dr. Joseph Oakland Hirschfelder, who died suddenly of heart failure in San Francisco, July 4, 1920, at the age of 65, was a notable figure in the history of medical education in California. He was the first teacher of clinical medicine on the Pacific Coast to emphasize the value of accurate bedside records and to correlate laboratory investigation and pathological conditions with clinical findings. Thoroughly trained in the fundamentals of clinical medicine he brought to his work a wide knowledge also of general chemistry, a clearness of thought and an indefatigable zeal rarely to be duplicated, together with a marvelously accurate memory.

The following account of Dr. Hirschfelder's life and labors is taken largely from a touching tribute to his father by Dr. Arthur D. Hirschfelder who is now Professor of Pharmacology in the University of Minnesota.

Dr. Hirschfelder was born in Oakland, California, in 1854, the first child of white parents born in that city from which circumstance arose the suggestion which resulted in his being named "Oakland." A graduate of the Lincoln Grammar

School and the Boys' High School, San Francisco, he entered the University of California in 1868, then in Oakland, as a student at large. He remained in the institution two years, during which time he was particularly inspired by the teachings of Professor Joseph LeConte with whom he did more or less special work.

He began his medical studies in the Medical College of the Pacific at a time when the curriculum consisted of a course of lectures which were given through the summer and which the student was required to repeat in a second year. Young Hirschfelder—he was then but seventeen—refused to take the lectures a second time and upset the traditions and the equilibrium of the faculty by leaving the school and going to Germany where he remained from 1872 to 1877. Beginning his anatomy under Koelliker in Wurzburg, he went thence to Leipzig to complete his anatomy under Braune and his physiology under Ludwig. To him as to many other investigators the instruction of Ludwig was a lifelong inspiration, and throughout his life he delighted to tell of the days spent under that wonderful, modest, unselfish scientist. From Leipzig he went to Berlin for his pathology under Virchow and clinical medicine under Frerichs and Traube and then returned to Leipzig to take his examinations for the doctor's degree and to complete his thesis on a method for the quantitative determination of the bile acids done under the hygienist and physiological chemist Franz Hoffman (published in the *Zeitschr. f. rationelle Medizin*). He was said to have been the first foreigner admitted to the German state examination and this he passed with high honor. Thereafter he practiced in Gernsbach, Wurtemberg, for a few months and then went to Vienna where he became private assistant to the laryngologist Schnitzler, father of the present-day dramatist, Arthur Schnitzler.

From Vienna he returned to San Francisco in 1877 and was at once given position on the Faculty of the Medical College of the Pacific, teaching internal medicine and also materia medica or pharmacology. His lectures on pharmacology of which his original notes are extant are said by his son, even from the present-day standpoint, to be good scientific expositions of the physiological actions of drugs in their relation to clinical application—clear, direct and fundamental.

About the time of the publication of Robert Koch's work on tuberculosis, Dr. Hirschfelder and Dr. (later Surgeon General) George M. Sternberg, who was then stationed at the Presidio Hospital, San Francisco, proceeded to verify Koch's findings and they were therefore contemporary with Trudeau as the American pioneers in the demonstration of the tubercle bacillus.

In the reorganization of the faculty of the Medical College of the Pacific into Cooper Medical College, in 1881, at the time of the dedication of the then new college building by Dr. Levi Cooper Lane, Dr. Hirschfelder became Professor of Clinical Medicine, his labors being chiefly at the City and County Hospital of San Francisco. This position he held till Cooper Medical College ceased its activities as an educational institution in 1912, having given over its entire properties and equipment to Stanford University. When Stanford University Medical School was organized and the policy carried out of appointing only younger men Dr. Hirschfelder was made Emeritus Professor of Clinical Medicine and his work as an active teacher ceased.

His relations with the Faculty of Cooper College may best be comprehended when it is known that he never let his personal interest or convenience interfere with his duty. He was never absent from a faculty meeting, never late, nor was he ever absent from his class exercises.



J. Hirschfelder
M.D.

In 1889 he again visited Europe spending much time in the clinic of Charcot in Paris whose teaching greatly impressed him with the importance of the functional element in nervous diseases.

In 1895 after a consultation upon a case of tuberculous peritonitis he was struck by the fact that Spencer Wells had reported a number of cures of this disease after exploratory laparotomy. He then reasoned that the element inducing cure in Wells's cases might be the entrance of air into the peritoneal cavity inducing oxidation of the tuberculine and he formulated the theory that antitoxines were formed from toxins by a process of oxidation.

Acting on this hypothesis he procured a quantity of tuberculine from Koch in Berlin and oxidized it with peroxide of hydrogen and termed the oxidized product "oxytuberculine." The cost of Koch's tuberculine proving prohibitive Dr. Hirschfelder was compelled to make his own. Although at this time he had never worked in a bacteriological laboratory he devised and constructed in the library of his home with the aid of Dr. George H. Hubbell, who was an excellent mechanic, a wonderfully fine set of big incubators and automatic sterilizer. He set himself to work on that most difficult bacteriological problem the growth of the tubercle bacillus in quantity at a time when there was not a single bacteriologist on the Pacific Coast to help him. He succeeded beyond expectations and before long had many litres of tuberculine.

Only when he had established the destruction of the tuberculine in a particular sample of oxytuberculine by the absence of reaction on injection into tuberculous guinea pigs did he try it on human patients. He never succeeded in curing a tuberculous guinea pig but realizing that man is far more resistant to tuberculosis than the guinea pig he continued his investigations on his patients.

Convinced of the value of his oxytuberculine in the treatment of early cases of tuberculosis by

reason of numerous apparent if not actual cures he made the mistake of undertaking the preparation of oxytuberculine in commercial quantity and putting it on the market. This fact, together with unfortunate newspaper publicity, became the basis of much adverse criticism which to one of Dr. Hirschfelder's sensibilities was unbearable and resulted in a complete nervous breakdown compelling him to take a long rest in Europe. In July, 1898, he presented his theories and experimental data before the International Congress of Tuberculosis in Paris and was hailed with applause. Professor Roux of the Pasteur Institute invited him to make and investigate oxytuberculine at the institute and Professor Hallopeau of Hoôpital St. Louis offered him cases of lupus for treatment and Professors Landouzy and Letulle, cases of pulmonary tuberculosis. The summer and winter of 1898 were spent in the treatment of these cases, but the results were uncertain and Dr. Hirschfelder spent the following spring attending clinics in Munich, Vienna and London.

Returning to San Francisco in 1899 he resumed his teaching and his investigations but finally becoming dissatisfied with the theory of the oxytoxines he developed in 1907 another line of research by demonstrating that antigens could be obtained from the bodies of bacteria by digesting them by trypsin and pepsin and that such antigens were still active after filtration through Berkefeld filters. This study he developed with characteristic thoroughness, accomplishing active immunization in animals and man. He further used the soluble vaccines in the treatment of pneumonia, tuberculosis, gonorrhoea and arthritis in the last especially obtaining excellent results. He was trying also the effects of similarly made digestion products of carcinomatous tissue in the treatment of that disease.

It is perhaps not generally known that Dr. Hirschfelder was one of the first men in America to appreciate the importance of Mackenzie's work on the venous pulse. In 1894 he set his assistants, Hewlett and Schmoll and his son Arthur to the investigation of this new field of cardiology, with the result that much of the earliest work on heart function published in this country came as the direct result of his insight, encouragement and inspiration. The clinical laboratory of his service at the City and County Hospital was always well stocked at his own expense with tambours, sphygmographs and other equipment and nowhere could be found better facilities for work. He had an unusually fine set of men around him in his crowning year of 1904-1905, Alibon W. Hewlett (now Professor of Medicine, Stanford University), Emile Schmoll, Herbert Gunn, P. M. Thomas, Jules Frankenheimer and his son Arthur Hirschfelder on the clinical side, and George Blumer (now Professor of Medicine in Yale Medical School) in charge of the clinical laboratory with fifty-five beds of fine clinical material studied as carefully as anywhere in the country. It is a pathetic anti-climax to the thoroughness of this work to realize that with a change in regime in the City and County Hospital all these old history sheets were inconsiderately destroyed because they were on larger sheets of paper than the modern clinical records.

A great student of medical literature through out his life, he accumulated a library of about five thousand well selected volumes. His private bacteriological laboratory erected in the back yard of his home was full of huge incubators, sterilizers and other equipment offering facilities for research such as few University departments could present.

Dr. Hirschfelder is remembered with reverence and affection as a teacher whose knowledge, enthusiasm, industry and thoroughness as well as his charity and broad humanity were an inspiration to a large number of successful practitioners of medicine in California.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Secretary - - - - - W. E. Musgrave, M. D.
 Editor - - - - - ALFRED C. REED, M. D.
 Managing Editor - - - - - CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

Alameda.....Dr. Ruby L. Cunningham, Berkeley
 Butte.....Dr. Edward Bauneister, Chico
 Contra Costa.....Dr. P. C. Campbell, Richmond
 Fresno.....Dr. G. L. Long, Fresno
 Glenn.....Dr. W. H. Walker, Willows
 Humboldt.....Dr. L. P. Dorais, Eureka
 Imperial.....
 Kern.....Dr. C. A. Morris, Bakersfield
 Lassen-Plumas.....
 Los Angeles.....M. Creamer, Los Angeles
 Marin.....Dr. W. F. Jones, San Rafael
 Mendocino.....Dr. O. H. Beckman, Fort Bragg
 Merced.....Dr. Brett Davis, Merced
 Monterey.....Dr. T. C. Edwards, Salinas
 Napa.....Dr. Robt. Crees, Napa
 Orange.....Dr. H. A. Johnston, Anaheim
 Placer.....
 Riverside.....Dr. Paul E. Simonds, Riverside
 Sacramento.....Dr. S. E. Simmons, Sacramento
 San Benito.....

San Bernardino.....Dr. C. L. Curtiss, Redlands
 San Diego.....Dr. Robt. Pollock, San Diego
 San Francisco.....Dr. Le Roy Briggs, San Francisco
 San Joaquin.....Dr. Dewey R. Powell, Stockton
 San Luis Obispo.....Dr. Paul K. Jackson, San Luis Obispo
 San Mateo.....Dr. A. L. Offield, Burlingame
 Santa Barbara.....Dr. Robert W. Hartwell, Santa Barbara
 Santa Clara.....Dr. Chas. Richards, San Jose
 Santa Cruz.....Dr. J. B. Cutter, Watsonville
 Shasta.....Dr. F. Stabel, Redding
 Siskiyou.....
 Solano.....Dr. A. V. Doran, Vallejo
 Sonoma.....Dr. N. Juell, Santa Rosa
 Stanislaus.....Dr. E. F. Reamer, Modesto
 Tehama.....
 Tulare.....Dr. J. T. Melvin, Porterville
 Tuolumne.....
 Ventura.....Dr. C. A. Jenson, Ventura
 Yolo.....Dr. Frances L. Newton, Woodland
 Yuba-Sutter.....

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

APRIL, 1921

No. 4

A NEW SECRETARY

The office of secretary of the Medical Society of the State of California is one of considerable importance, for, while the secretary is not the dictator of the policies of that organization, he is to a great extent guardian of its character and director of its destinies. The Council, of course, is the great executive center, and the House of Delegates is its legislative body.

The re-organization of the State Medical Society under the initiative of the late Dr. Philip Mills Jones marked an epoch in its life, and the work of Dr. Jones was of paramount importance. He was a man of striking qualities and to him we can look as the patron saint of our Society. It is true that in his later years he rather exceeded the functions of a mere secretary and overshadowed the rights of the Council. He justified this attitude, however, by the excellence of his work.

At his death Dr. Saxton Pope was elected secretary and during his term of office the State Society has prospered. Its finances have been put on a firm basis, its membership increased, and the work of Dr. Jones, as outlined by him, has been carried forward. The Indemnity Defense Fund, which was one of his later developments, has assumed very healthy proportions; medico-legal defense has been conducted with unflinching success; the STATE JOURNAL is the best in America.

While Dr. Jones had filled both the office of secretary and that of editor, it was deemed advisable to separate these two and Dr. Alfred C. Reed has occupied the position of editor of the CALIFORNIA STATE JOURNAL OF MEDICINE most satisfactorily. Attention is called to Dr. Reed's open letter under Correspondence in this issue of the Journal.

But as time goes on it has become more apparent that the increased activities of the State Society demand a full time secretary. It is not sufficient that the organization has run more

harmoniously and that its finances are in better condition than ever before. There is still pioneer work to be done in the development of service to the public and the profession at large. To accomplish this result it is absolutely necessary that a man shall concentrate all his efforts in one function, and he must be adequately compensated for it. Secretaries are born, not made. A man must have many qualities to fill the position properly.

The Council of the Society for a long time has been looking for this type of secretary, and Dr. Pope himself accepted the office in the past with the understanding that he should be permitted to retire when the right man could be secured. Through a series of fortunate circumstances Dr. W. E. Musgrave, late director of the University Hospitals, has become available for the secretary's office. He is a man of unusual executive ability, a wide experience in medicine, and thoroughly drilled in organization. Very much to our surprise, after his resignation from the University of California, he expressed his willingness to accept the office of secretary because of his wish to be of service to the State Medical Society.

At the suggestion of Dr. Pope and with the approval of certain members of the Council, a special meeting of the Council was called and, after proper explanation, Dr. Pope handed in his resignation with the suggestion that Dr. Musgrave be proffered the unexpired term in the office.

Dr. Musgrave, having been duly notified, has accepted the secretaryship of the State Medical Society, and we can congratulate ourselves upon acquiring such unusual ability for this position. He will immediately take up his duties, and we have every reason to believe that the outcome will be greatly to the advantage of organized medicine.

ALL ABOARD FOR SAN DIEGO

Why not give yourself and your family a treat next month and go to San Diego May 10, 11 and 12 for the State Meeting? If 150 railroad fares

are sold, the return rate will be one-half. Be sure to get your railroad receipts and leave them at the registration desk at the Hotel Coronado. The State Society office cannot make reservations. You must do that for yourself directly with the Hotel Coronado. You will find rates and other information on page L. of this issue.

From the time that Chaucer sang of the joys of April and the spring it has been a custom of man to "goon on pilgrimages" when the air was soft and the winter past and the flowers at their best. When to all this is added that long postponed opportunity for you to visit San Diego and make them prove their assertions about climate, etc., and when even going farther there is remembered the close proximity of San Diego to the border and all that *that* connotes, why, oh! why, do you hesitate? You see the completed program in this issue of the Journal. You know you will meet acquaintances and friends from all over the state, and will have still new ones when you come away. By motor, by train, by boat, the trip is ideal, the season is the finest, the scientific joys are of the best, and there is going to be a wonderful round of social and sightseeing pleasures to fill in every moment.

Incidentally, remember once more that you are the owner and manager of the California State Medical Society. It does what you permit it to do. If its tricks are not to your taste, just step in and have them changed. It will do what you tell it to do. A live medical profession is a blessing to the entire community. Make yours a blessing. It will give back to you all you give to it and more. Come to San Diego. Remember you are a member, recall that you can give something worth while by your presence; be assured you will get rich repayment; do not forget the extra curriculum activities. Come.

SAN DIEGO SOCIAL PROGRAM

During the days of the State Medical Society meeting at Hotel Coronado, May 10, 11 and 12, the following program of social events has been arranged:

Tuesday, May 10—Afternoon reception by Mrs. Paul Wegeforth at the Coronado Country Club. Evening—Informal dance.

Wednesday morning, May 11—Swimming, golf, trap shooting. Afternoon—Boat excursion around San Diego Bay, or automobile trip to naval air station. Evening—Dinner for visiting medical women at Grossmont Inn; informal dance at Coronado Hotel; boxing at Tent City.

Thursday morning, May 12—Golf. Afternoon—Cards at Coronado Hotel, or automobile trip to Point Loma, Sunset Cliff and Old Town. Evening—President's banquet and President's reception.

Friday morning, May 13—Final golf tournament. Friday noon—Trip to Tia Juana, including the races, dinner, and special features in Old Mexico.

RADIOLOGY IS A MEDICAL SPECIALTY

Medical radiology today embraces a vastly wider

field than the delineation of a fractured bone. It is well for the average doctor to realize that successful diagnosis now demands a nearly constant employment of the X-ray. Probably no field of medical or surgical work has been exempt from the diagnostic or the therapeutic advantages of radiology. Certainly no physician can pretend to practice in general or in a specialty in this age without constant reference to data secured by the X-ray and its frequent use in treatment.

It is well to consider with peculiar care what we expect and should demand of radiology. Some want a simple diagnosis. That they will not always get. Some want a technician only, with no report except the plates or films. Some want a description of the pathology elicited and that is well as far as it goes. The careful conservative physician, however, wants something of all these. He wants to see the screen and film studies, to have them described by an expert pathologist, and to have them interpreted by an expert diagnostician. He may not use all of this data. He may reject part or all of the data or the interpretation, but it is the function of the radiologist to describe and interpret X-ray findings in terms of anatomy, physiology and pathology. Beyond this it is the function of the radiologist to advise expertly as to the indications for radiologic treatment and to carry out such therapeutic procedures when ordered.

To fulfil these onerous functions, what requirements are necessary in the radiologist? Is it conceivable that he can give the kind of expert service required if he has never had a medical training? It would seem that of all medical specialties, here above all a thorough medical training was the basic requirement for practice. Compare the radiologist with the various types of technicians on whom we call for assistance in other lines of diagnosis and treatment. Is there a single one which requires such a knowledge of the fundamental medical sciences and, as well, of the special medical subjects, as does radiology? Certainly there is none.

We admit the rigor of the requirements. Do we sufficiently recognize the responsibilities involved? Are *you*, the average doctor, qualified to draw your own independent conclusions from all types of X-ray studies which you make use of? If not, are you not entrusting a very considerable responsibility to the radiologist whom you ask to interpret and describe those studies for you? Suppose as a result of diagnostic or of therapeutic application of X-rays, your patient suffers injury. Do you know that the moral and professional blame is shared by you. You are supposed to guarantee that such application of X-rays as is made to your patient shall be done with reasonable and customary skill. Can you entrust such important functions to technicians who have had less than an adequate medical training. Most assuredly you cannot do so with safety.

The possession of a stethoscope and a hypodermic does not make a doctor. Neither does the possession of an X-ray plant make a radiologist.

You should consider this matter with the closest scrutiny and decide whether you will send your patients to non-medical X-ray technicians, or whether you will insure for them the skilled services of a trained medical radiologist. Radiology is strictly a medical specialty. It requires qualities which can only be secured through the medium of a medical education. Consider well whether the best interests of your patients as well as of your own profession, are not served by keeping radiology as a strictly medical specialty and employing only qualified physicians as radiologists.

CARE OF CRIPPLED CHILDREN

At the present time, interest in better health for children occupies a greater position in the popular mind than ever before. The up-to-date physician views these child welfare movements with gratification. One of the pressing of these problems is the urgent need for better care, both medical and educational, of the crippled class of children. Among these children the mentally normal, but physically handicapped by some deformity either congenital or acquired, can be benefited by adequate medical care, thereby giving them a better chance to gain an independent state in later life. The responsibility rests entirely on the parents or guardian. To make a diagnosis, to urge treatment on the parents, means also the carrying on of the reclamation work in an effective manner. Who can do this but a physician, and how can he do it if the means are not at hand?

In the near future definite data concerning the number of children under eighteen years of age requiring medical consideration will be placed before us. Already a conservative estimate of those needful of immediate treatment is great. This work must be carried on. For the more severe cases a hospital school situated in a suitable community is essential, in order that while surgical measures or other necessary treatment is being accomplished, the child may receive such educational training as is possible. Simpler cases can be well taken care of in the various excellent clinics in our cities under strict observation extending into the home. This problem is of great importance to the state and to the community and requires the best co-operation from all physicians.

THE COMMITMENT OF THE INSANE

It is commonly recognized that there exist serious abuses in our present method of commitment of the insane and that the method is neither economical, scientific or humane. We might go further with the statement that the present method is grossly out of date and based on a wrong conception of the problem involved and the result to be desired. Commitment should not be a police function nor should the mentally sick be subject to police control. The argument that the diagnosis of insanity at once impugns the civic status of the individual is not sufficient reason for the wretched process now required for the commitment of the mentally ill. The civic status of an individual is seriously affected by the diagnosis of smallpox and yet the medical health authorities control and direct the situation purely as a health problem

and their police powers are secondary and subordinate to the end of securing the best treatment for the patient and the best protection for the community. Similar conditions should obtain in regard to the mentally diseased.

At present a patient with sufficient "disease insight" to recognize that his mental condition requires treatment, cannot easily secure that hospital care needed, without having a warrant sworn out for his commitment. Moreover, commitment is practically impossible unless the patient is brought for at least twenty-four hours to a detention hospital for observation. Most people who need it, refuse state care, or at least postpone it as long as possible, because they will not subject their relatives or themselves to the publicity and police methods now necessary for commitment.

In the line of remedying the present deplorable situation, certain constructive suggestions can be made which would at least pave the way for a proper recognition in practice of the fact that the mentally sick are entitled to the same scientific care and humane consideration that our other sick receive and are entitled to receive. In the first place a psychopathic hospital as a clearing house for all mental cases would afford a place where any patient could apply personally or be brought by his friends for diagnosis and treatment. Secondly, there should be available boards of full time salaried psychiatrists, whose duties, like those of our present health officers, would oblige them to make examinations at the homes or in general hospitals anywhere, and whenever the call came. In suitable cases diagnosis could thus be made without removing the patient to the detention hospital. Thirdly, the legal side of commitment should be made as inconspicuous as possible and should go only so far as to guarantee the safety and the property rights of all concerned. The entire matter should be recognized correctly as a matter of mental health and not considered as an infraction of law and therefore necessitating its approach primarily from the police and legal point of view.

HOSPITALS, ATTENTION!

Have you read Senate Bill 605? If you have and are not disturbed, read it again. It provides for the licensing, inspection and regulation of hospitals, homes, sanatoriums or other institutions that care for mentally sick or mentally defective persons.

In our opinion this is a dangerous bill that ought to be defeated. Primarily it takes out of medical control one of the highest types of special hospitals known and places the control in the hands of a lay board which has not shown, by its past performances nor by present undertaking, that it is competent to do this work. Of what value is the inspection and report of such a board upon subjects with which it is unfamiliar? It is a fact that in some states the control of the institutions for the mentally deficient and insane is supervised, but so far as known they are always supervised by competent medical boards. Anyway, California does not need to imitate bad examples that may exist elsewhere.

Section 1 of this law provides that no institution shall maintain space for the care and treatment of mentally sick patients without said institutions being licensed by the Board of Charities and Corrections. This would affect a very large percentage of the hospitals of the state and lead to endless complications. Most hospitals have no definite departments for this work, while but few of them refuse to take an occasional psychopathic patient. The term hospital seems deliberately left out of this section, but it is covered by synonymous words which might mislead those who may not give the matter close attention. The lack of proper institutions for the care of the mentally sick in California is lamentable. Those who are definitely insane can be taken care of in state institutions, but the mentally ill patients, not only among the poor but among the wealthy, do not receive the care they should receive because of the lack of proper accommodations. Is there any justice or reason to pass such a drastic law as this until there has first been performed some constructive work in the nature of providing hospitals for the care of this class of patients? It would seem that the Board of Charities and Corrections or any other official body might much better interest itself in constructive work along this line than in destructive measures. Such private institutions are now struggling for existence, and while they are not perfect they are the best and all that we have.

Section 2 of this act provides that the Board of Charities and Corrections shall prescribe the conditions upon which the license or permit shall be granted and make the rules and regulations to govern hospitals of this class. Again we find nothing in the record of this board to warrant a belief that it is competent to carry out this provision. Properly to carry out the provisions of Section 2 of this law would require a very broad-visioned, highly-specialized group of physicians trained in the peculiarities and complications of hospital administrations. No board of laymen, however competent, sincere or honest, can even approach to proper discharge of this duty. It would be very unfortunate for the hospitals and helpless people whom this act apparently seeks to benefit, to come within its provisions. It would seem that the last paragraph of this section, which authorizes a representative of the board to inspect and report upon the conditions prevailing in all such institutions, is wholly superfluous because above this they have been given absolute power of control.

Section 3 of this act authorizes the Board of Charities and Corrections to call in experts in consultation, thereby indicating the inability of its present personnel to carry out the provisions of this law. It may be noted that making the violation of this law a felony shows the earnestness of the board that sponsors it, as it will permit the board to punish hospital superintendents, directors and owners who may differ with the board's opinions. Finally, it is important to note that this bill is one of many showing a deplorable tendency to place control of medicine and medical specialties in the hands of political lay bodies, disregarding the expert wisdom of medical men who are trained to carry out the provisions of such an act as this purports to be.

ANTHROPOLOGY AND AMERICANISM

A survey of history seems to indicate clearly that the course of most of the great nations has been one determined by opportunism rather than a clear and expressed determination to seek and attain a definite goal. For our own advancement and national survival, it is very much worth while to consider the lessons of history and seek to find the elements which make for our own survival as a nation, as well as to discover those dangers, many probably avoidable, which make for national destruction. As a serious contribution to this end, we read with stimulating profit an address before the section on anthropology of the American Association for the Advancement of Science, delivered by its chairman, Professor A. E. Jenks, of the University of Minnesota.¹

Professor Jenks says unequivocally that the most unique and difficult of America's problems are at base, anthropologic. The great bedrock problem of the nation is the survival and improvement of its human components. "Civilization is lost to the extent that man's survival-planes are lowered." A part of cosmic evolution seems to lie in man's irresistible urge upward and forward. Yet today our generation is too easily concerned with remedial factors instead of with causative factors. Jenks quotes the following from World-Power and Evolution, by Ellsworth Huntington: "Shall we despair because the church, the school, the charity organization and the state have not yet destroyed war, pestilence, lust, greed, cruelty, and selfishness? Far from it. These agencies cannot possibly play their proper parts unless science comes to their aid."

Science has come to the aid of the preservation of our national culture and our racial survival in the matter of animal and plant life as can readily be seen on surveying the governmental and private interest in these pursuits. The agricultural and animal economy of America has been vastly served by scientific study and control, both through deletion, protection and addition of new strains. Why should science lag behind when it comes to similar service to civilization's most important component, man himself? Why should our nation follow a policy of opportunism in this all-important particular?

Jenks notes two major anthropologic problems before the American people, neither of which has received serious attention from the scientific standpoint and neither of which can be solved except by anthropologic investigation. The first of these is the immigration problem. This is at root an ethnic problem and must therefore be studied from the anthropologic point of view above all others. Races are not alike and their physical and external differences are no greater than their physiologic and reactive differences. Only by an appreciation of their heredities, environmental factors and points of racial strength and weakness, can their proper location be evaluated and their proper contribution to our culture be measured. We can learn much indeed from a study of the adaptations that led the native American Indian to survive under our physical environment. Ethnic studies are the basic requirement for proper im-

¹ Science, Feb. 18, 1921.

migration control, and this control must not be a matter of mere opportunism.

The second great American problem stressed by Jenks is the negro problem. We in California have no negro problem, but we must remember that one out of every ten persons in the United States is a negro, and that in many large sections the ratio in which the negro outnumbers the whites is rapidly increasing. Practically nothing of scientific anthropologic value is known today about the American negro. Reflection on what Jenks calls the four great negro movements in America shows at once the essential anthropologic nature of the entire problem, as well as the deep significance of its proper solution in the interest of national advance and survival. The first movement is that of negro segregation as already mentioned. This is going forward in at least three great areas where negroes flourish better than whites. The problem lies in the nature of the culture and the character of the negro being evolved. The second movement is the steady migration of negroes from south to north. Until lately the negro and the north have been comparative strangers. The recent widespread race riots give food for sober thought. As if to make a bad matter worse, some 6000 alien negroes yearly enter the United States, chiefly from the West Indies.

The third great movement is the trend to amalgamation of negroes and whites. This is most pronounced among the newer immigrants from Europe, many of whom, as for instance the Italians, lack the intense race prejudice against the negro, which is so universal among American whites. The anthropologic study of mixed breeds is a matter of moment and extreme national value. The fourth great movement is the trend of the increasing political power of the negro and the possibility that as an outgrowth of his treatment in the past, that power may be wielded in the interest of a racial group in our body politic.

Certainly no such suggestive thesis with such convincing illustrations as the two denoted, can be suffered to pass without thoughtful consideration. Anthropology plays a far larger role in the art and practice of medicine than many of us have realized. It is high time that this science should receive the encouragement and popularization which its importance justifies.

Original Articles

THE REVERIES OF A GENERAL PRACTITIONER.*

By MICHAEL CREAMER, M. D., Los Angeles, Cal.

Beginning my medical education in a period when antiseptic surgery, not aseptic, was the only known method, when bacteriology was but newly recognized as a scientific fact by certain physicians, and many medical colleges had but recently established a chair of it, it has, of course, been my good fortune in the twenty-five years that have elapsed to have noted many changes and much increase in medical knowledge.

The surprising thing to me has been in thinking over this tremendous progress in our knowl-

edge of the cause and treatment of disease, that so little credit has been given the profession by the lay public; and yet, if we pause to consider the things unknown to us, the tremendous number of conditions confronting us, of which we have little definite knowledge, we must feel after all that there is some justice in this failure to receive the unqualified approval of a long-suffering, variously-afflicted people.

We need no better illustration of our incompetency than was evidenced by our recognition or rather failure to recognize the cause of our epidemic of influenza in 1918 and 1919 and our treatment, in the early stages of this scourge. With what eagerness did a certain element of our population look to us for aid, and aside from personal effort, ill directed though it may have been, exerted by the individual physician, how poorly were they repaid. The efforts of our health officers, backed up in many instances by the advice of our best men in medicine, were, as the results proved, as futile as they were unnecessary. Business men were thrown into bankruptcy at our bequest; for a day we were kings; and what have we as a profession gained? A mass of unreliable statistics taken from our charity hospitals and quoted against us with excellent results by our competitors in the healing art; vaccines galore—each with the approval of an authority—each of the shotgun type, so much derided by our journals, when the same line of thought produces a prescription in that form, not one of which was in my experience of any value to the patient; and what is most to our discredit, we are, after a lapse of two years, unable to state its etiology or the exact mode of its transmission, nor are we able to do other than alleviate its symptoms.

Success in general practice in medicine and surgery, it seems to me, depends upon two things—ability, which included training, study and experience; and personality, and the exact balance between the two is difficult to decide.

You can all recall at this moment many men of your acquaintance whose actual ability you may hold in serious question but whose success in the profession there can be no doubt, if success can be gauged by the flock of patients who crowd their reception rooms, or by the increase of their property holdings or bank balances each year; and with men of this type, personality must by long odds be the largest factor. Who is there among us who can honestly say that their success is not justified by the results obtained? I have often noted in my conversation with my confreres, a disposition on the part of all of us to stricture most severely some error either of judgment or of practice on the part of some man, yet who among us, after an hour or two of retrospection in the company of our old case records, with the knowledge before us of what happened to the individual since they were written, can truthfully say that he himself has been 100 per cent. efficient?

In the years of my practice I have witnessed the rise of modern surgery. From the day when, as a freshman student from the back row, I witnessed the attempted removal of an old man's prostate, the operator using a knife quite six inches long, with his instruments immersed in a strong

* Read before the Los Angeles County Medical Society, February 3, 1921.

solution of carbolic acid, while the nurse diligently sprayed a more dilute solution of the same drug over the operating field, and the hands of the surgeon and his assistants; to the present time, with the technique of a Young, a Dillingham, or a Cecil, seems a far cry.

Surgery has reached the place now where I sometimes think that the woman of thirty without an operation scar marring the smooth surface of the protective covering of her abdominal viscera, and by the way, almost the only protection which modern fashion has left for those same viscera, is passe, and I am quite sure that few there are in our more thickly-settled communities who have reached that age and had any reason at all for a consultation with the present up-to-date business man, whom we think of as the modern surgeon, who has not at least had a decoration of that character offered her.

I would like to believe that the "peak" in volume at least of modern surgery has arrived, and that from now on necessary life-saving and health-giving surgery, performed by skilful men of broad experience, would be the rule; but the millennium has not arrived. Utopia is not here, and as long as our present ideals, tainted as they are with the desire for personal aggrandizement and financial gain, exist, surgeons will be found who, through cupidity or personal vanity or sometimes through honest ignorance, will perform unnecessary operations.

Much progress has been made in obstetrical practice during these years, or so it seems to me, for I began my work in the era when pituitrin was undiscovered, when twilight sleep with its numerous modifications was unknown, and a Cesarean section was a spectacle to which all the nurses and available physicians were invited, and which they were eager to attend. I was not a little surprised to read lately that the mortality in obstetrics has remained unchanged during the last decade. I wonder if in this, as in so much in medicine, we have only improved our work in such a way that our knowledge and our skill is only available to that portion of the population which needs it least. For economic reasons I am quite sure that the average prospective mother cannot secure the best that we have to offer in obstetrics. I am not criticizing the individuals who, confronted by the necessity of accumulating a reserve fund for their old age, have elevated the cost of *loving* to such a point that none but the rich can avail themselves of their services, but rather the system under which we are working, and the fact that for this reason the vast majority of these cases are in the hands of midwives, by their sins of omission, and poorly trained physicians, with little or no experience, by their sins of commission so badly mismanaged. Of the two evils I prefer the former, for certainly the mortality among these patients with a do-nothing midwife must be less than from some of the mischievous obstetrical operations performed by incompetent men.

The branch of practice to which I think, as physicians, we can point with most pride is that of pediatrics. In this, as in no other section of our work, it seems to me we have made real progress.

Tremendous progress has been made in the management of the well child—a progress only held back by our eternal conflict with superstition and ignorance, masquerading in the guise so often of religious belief.

The medical profession, en masse, politically is a school of spineless jelly-fish, a flock of sheep scurrying blithely after their temporary leaders, lacking courage to have individual convictions, not swayed or perverted by lay friends or patients, and seemingly unable to pursue for any length of time a definite course toward a certain goal.

"They are harsh words," yet when one considers the growth and popularity of every cult of pathy inimical to the best interests of the profession and to the health of the community as we understand it, there seems some justification for it.

In 1920 for the first time a concerted effort made by the profession seems to have borne some political fruit. We, in Southern California, deserve little credit for it if one can judge by the actual result of the ballots in Los Angeles county, and yet if we consider the immensity of the task as compared with other sections of the state a modicum of self-congratulation is ours.

We are fortunate at this time in having in office in this community a man honest, fearless, and to use a euphonious colloquialism, a "fighting fool," when he is convinced of the justice of a contention or cause.

Aroused by first-hand knowledge of one of the hundreds of failures of Mary Baker Eddy's satellites to demonstrate that all is finite mind, he has shown what seems to me a commendable desire to aid us in conserving life, particularly that of children.

I grieve to say that the reception tendered his taking up the official cudgels against Eddyite healers has been marked in our controlling medical circles by a marked lassitude, a frigidity which seems to me to forbode the neglecting of a golden opportunity by the medical profession. I am creditably informed that, through fear of drawing upon our devoted heads the contumacious phrase, Medical Persecution by Political Doctors, our wise men of the State Medical have "viewed with alarm" this activity. For the last decade this allegation has been put forward by every law-breaker, every self-constituted healer in Christendom—we have had the name for ten years, may we not have the game as well, when the hour seems so propitious?

The attempt on the part of our preceptors to elevate the standard of education in the profession, has had what is to them perhaps an unlooked-for result. Certainly to us, in active competition for practice, with every cult, pathy and ism that fertile, avaricious minds can conceive, a period in which every doctor's name plate meant, a regular physician, more or less ethical, would seem like the land of pleasant dreams. I wonder if this attempt to secure a higher education, greater skill, and more culture in the medical profession, had been accompanied by a little less blaring of trumpets, a little less lobbying in the legislatures, I wonder if the open season for regular practitioners which you and I have been passing through

these last ten years would have been brought about?

An increase in the thinking capacity of individuals naturally brings out of the mass an increased number who, in various ways, seek to secure the necessities of life with as little actual labor as possible. With this fundamental fact before us, and the tendency of the worker to combine against the intellectual element in the community exaggerated, as it has been by the unrest and uncertainty alike brought about as an aftermath of the war, what more natural to expect than the present attitude of the registered nursing profession toward us and our patients? I am quite willing to admit that some of you are well served by your nurses as in days gone by, but I am not willing to acknowledge that the changed attitude of trained nurses toward me and my patients is the result altogether of a feeling of antagonism against me as an individual physician. The fault herein lies with us, and not with this other profession. Through what I now believe to have been a mistaken conception, the personnel of our present registered nurse corps was recruited from a class of well-educated, well-bred young women, who honestly looked forward to a career as honorable and as honored as we ourselves. Time brought disillusionment. They found themselves in their hospital life compelled to perform the most menial tasks; graduated they were received in the families of the rich as upper servants, and among poor and ignorant as equals—and both were wrong. What wonder is it that these young women have lost their ideals? Their dream of service gone, they think only of themselves, and are as selfish as the rest of us. It seems to me a simple thing to remedy; it means but the continuation of the three-year intensive course for registered nurses with all the menial tasks eliminated. Young women of breeding and education, trained to the minute in all the technical details of modern medicine and surgery, fitted by their three-years' course to be supervisors and superintendents in hospitals and infirmaries, surgical assistants and operating-room nurses, office and laboratory assistants; and then from that great mass of the community—this working population—to recruit young women compelled by the exigencies of life to earn their own living; entrust to them in our hospitals, at a decent salary, the actual care of the sick; give them six months' training in bed making, in temperature taking, and pulse counting, the manipulation of the douche can, the bed pan and the urinal, and equally as important, in the exercise of tact and the psychology of the acutely ill person, and graduate them as trained nurses—sick room attendants—or anything you like, and you will give to the community a corps of women who will be of real help to your patients and a great comfort to you. The difficulties of this plan do not seem insurmountable to me. It is true that cosmetically and sartorially our hospitals may suffer. The movies will always attract from this class the better-looking flappers, but I am quite sure that enough will be left who would prefer this life to that of the factory or the department store to furnish a constant stream of applicants to our hospitals.

Right in our own ranks we number many men and women who seem to me to be factors militating against our future wellbeing as a profession. Among these I would ask you to consider the ultra-scientific mind; the doctor who indulges himself at the expense of his patient and his patient's nurse, in every form of analysis, psycho-, patho-, and sometimes, I fear, pseudo; and having arrived at a conclusion, dogmatically recommends to his patient some plan of treatment, some regime of life, as economically lacking in common sense as he is himself. What wonder is it that a by no means limited number of health-seekers should graduate from this training school to the far more simple, more economical post-graduate course offered by the various cults with which we are more actively engaged in competition as the years pass?

One other factor which has given me much food for thought in this same connection is: that young physician—to me, much to be envied—who, knowing from the day almost of his matriculation, just what particular field in medicine most appeals to him, plunges boldly forward upon his graduation in the pretended practice of a specialty. How often have I listened in a medical society to advice given by one of these young men, as to what I, as a general practitioner, should be able to do for my patient? Yet I cannot recall once having listened to any advice as to what the specialist should be able to do, and I sometimes feel that a knowledge of the comments made by patients, after a visit to some specialist, to their family physician would perhaps be valuable to the gentleman in question. I am not despondent over the future of this profession of ours. In our endeavor to elevate the standards of our profession we have antagonized all the elements of society other than our own, which derive their livelihood from the treatment of human ills.

We have enough truth as a foundation for our beliefs to assure us of the ultimate triumph of our methods. Cults will come and go, but our profession will live forever; and to make that assurance doubly sure, it behooves us, I think, to exercise a little more honesty of purpose, to follow the golden rule a little more closely, and to remove as far as possible the beams from our own eyes.

INDICATIONS FOR INFUSION OF BLOOD SUBSTITUTES AND TRANSFUSION OF BLOOD IN CASES OF TRAUMATIC HEMORRHAGE AND SHOCK.*

By EDMUND BUTLER, M. D., San Francisco.

It is not my intention in this paper to definitely outline clean cut, absolute indications for the infusion of acacia, glucose or sodium bicarbonate solutions, nor for the transfusion of blood; but it is my desire to make plain the more or less relative complex that guides us in the treatment of shock in the San Francisco Emergency Hospital Service.

Cannon defines shock as "A general body state occurring after severe injury, characterized by

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

low arterial pressure, rapid pulse, pallor or slight cyanosis, sweating, superficial rapid respiration, and usually by a dull mental state."

Primary shock taking place immediately on receipt of the injury is of different degrees of intensity, depending upon the severity of the trauma, the condition of the person injured, and the location of the injury. Injuries of the trunk show more marked degree of shock than injuries of the head and the extremities. The exhausted, cold, hungry person when injured exhibits shock to a more marked degree than the normal individual. Primary shock may be apparently very severe and still clear up in a very few minutes following hot drinks and rest in a warm bed. Particularly is this true in wounds of the chest. In these cases primary shock is often profound; the pallor is so marked that one is sure all the circulating blood has escaped into the pleural cavity, but in the course of twenty or thirty minutes great improvement may be noticed.

Secondary shock coming on an hour or more after the injury is a more serious matter, although the symptoms and signs may apparently be less alarming than those of primary shock. Some of the etiological factors in the development of secondary shock are: concealed hemorrhage, infection (hidden or apparent), the absorption of toxins set loose by the changes in the traumatized tissues, and the development of acidosis. Cannon and his co-workers and several French surgeons working independently made the observation that, following the removal of the tourniquet in severely wounded extremities, shock developed very soon, due to the absorption of proteolytic products from the region of the wound. Secondary shock is more gradual and progressive in its development than primary shock, and is not as responsive to treatment.

The absolute indications for the transfusion of blood are the loss of so large a quantity of blood that that which remains is incapable of nourishing the vital parts of the organism; that is, a definite alteration in the quantity of the circulating blood; and qualitative changes, interfering with the function of the structural units of the blood, particularly that of the oxygen-carrying capacity of the red cells, rendering the nutrition of vital parts inadequate for life.

During the late war, the theories of shock that had previously been advanced were mostly disproven.¹ The Acapnia theory advanced by Henderson did not find support on the part of the practical physiologists who worked on the different fronts.² The nerve exhaustion theory advanced by Crile, the father of the Anoci Association ideas in surgery, was experimentally eliminated as the important factor in shock by Cannon.³ The fat embolism theory never had many adherents. Several workers have proven the absence of fat emboli in the organs of persons dying in shock.

The true explanation of the phenomena of shock is still waiting. The above theories all indicate factors which influence shock, but their exact relation is open to further investigation.

We all know that the degree of shock is greatly

influenced by the amount of blood lost, the rapidity of that loss, the part of the body injured, the length of exposure before and after injury, and the resistance to shock on the part of the individual.

The degree of exemia—that is, capillary concentration of the blood—is an indicator of the intensity of shock. If exemia tends to persist after the administration of anti-shock remedies, the shock is grave. If the blood has a tendency to remain concentrated, or tends to reconcentrate following treatment, the shock is severe. The cases that show a gradual decrease in the hemoglobin following the loss of blood are the cases that are reacting well. The body fluids are diluting the remaining blood, and bringing the volume up to near normal.

What means have we at our disposal to determine the necessity for the infusion of blood substitutes, or for the transfusion of blood? Firstly, the subjective symptoms and objective signs as incorporated in Cannon's definition of shock. These are often misleading and are differently interpreted by different men, depending to a great extent on the experience of the particular observer.

Secondly, the blood count, showing the degree of exemia, can not always be made as rapidly as we would like it, and not all of us are able to make blood counts that are dependable.

Thirdly, the calculation of the amount of blood lost by determining the cell concentration after known amounts of infusion of blood substitutes. This consumes time, and many chances for error creep in, even with men perfectly familiar with the work.

Fourthly, the determination of the systolic and the diastolic blood pressure by some of the more accurate blood pressure registering apparatuses. This is the one most reliable means, and the one which we all have at our disposal.

Any case of shock that continues to register a systolic blood pressure of seventy to eighty millimeters of mercury after the usual treatment for the relief of shock, such as external heat, relief of pain, and an infusion of seven per cent. acacia or six per cent. glucose solution, should be transfused with from 600 to 1000 c. c. of blood from a tested donor. Transfusion should be resorted to regardless of whether the circulating blood has been changed by hemorrhage or exemia.

If following the application of external heat, relief of pain and infusion of acacia or glucose solution, the blood pressure takes a decline and drops lower than the previous low mark, and does not rise again following another infusion of acacia solution, transfusion with a compatible blood is demanded.

A hemoglobin of twenty-five per cent. or less always calls for transfusion.

If a patient is exsanguinated, transfusion of blood from some healthy individual, without waiting for the ordinary tests, is indicated. Infusion of acacia solution, or even physiological salt solution should be given while preparing for the transfusion of blood. This transfusion, without waiting for compatibility tests, is to be resorted to

only in extreme cases, where any delay whatever would be fatal.

The following four cases will serve to outline the treatment of shock in the Emergency Service:

(1) Mild degree of shock, very slight loss of blood. J. O'K., Japanese male. Aged 43. History—fell two stories down an elevator shaft. Diagnosis—comminuted fractures of the superior third of right femur and lower third of left femur, fracture of right os calcis, Colles' fracture right, depressed fracture of the frontal bone in the right frontal region. Examination—semi-conscious, pulse 110, temperature 98, respirations 24, blood pressure 100 systolic, diastolic not noted. Slight clamminess of skin, slight cyanosis of lips and lobes of ears. Treatment—immobilization of fractures, external heat. Because of inability to retain liquids by mouth 500 c. c. of physiological salt solution was given into each axilla. In the course of one hour blood pressure was 105 systolic. Weeks' drip five per cent. solution soda bicarbonate, and five per cent. glucose solution was administered by rectum. This patient left the hospital twelve hours after the accident with a pulse of 88 and a systolic blood pressure of 120.

(2) Moderate degree of shock, considerable loss of blood. W. C., Italian male. Aged 13 years. History—struck by automobile. Diagnosis—compound comminuted fracture of left femur, simple fracture tibia and fibula inferior third of the left leg; contusion and abrasion of both upper extremities and the scalp in the frontal region. Examination—patient conscious, pulse 80, rectal temperature 99, respirations 26, blood pressure systolic 110, diastolic 80. Slight cyanosis of skin over entire body; more marked at face and neck. Treatment—repair of wound of soft parts, immobilization of fractures under ether anesthesia. 500 c. c. physiological salt solution given subcutaneously into subpectoral regions. This patient's pulse gradually increased in rate, and cyanosis became more marked. Death during the third day after injury. Pathologists report: "Many of the capillaries and arteries of the lungs are filled with fat globules, some desquamation of the alveolar epithelium." Clinically there was no involvement of the brain or heart, as the death in this case was purely respiratory.

(3) Severe degree of primary shock, considerable loss of blood. A. M., male. Aged 34. History—shot by unknown party. Diagnosis—gunshot wound, left superior posterior chest. Examination—patient conscious, showing all the signs of severe shock. Pulse 160, blood pressure we were unable to determine by auscultatory or palpation methods. Marked dullness of left chest. Treatment—morphia for pain, heat, 750 c. c. seven per cent. acacia solution given intravenously, 500 c. c. of normal salt given subcutaneously into each subpectoral region. No attempt made to aspirate the blood from left chest as blood had compressed lung, and bleeding evidently controlled by this compression. Frequently when blood is aspirated from a pleural space too soon a state of profound secondary shock develops. This patient's pulse slowly came down to 100, and at the end of two

hours blood pressure registered 110. Patient left the Emergency Hospital at the end of six days in good general condition.

(4) Profound shock, extreme loss of blood. E. K., male. Age unknown. History—hacked about head and shoulders with a sharp hatchet by insane wife. Examination—this patient manifested all the signs of extreme shock due to the great quantity of blood lost. The blood escaping from the wounds at the time I saw the patient showed extreme dilution with tissue fluids, blood very watery in appearance. Blood pressure impossible to be determined, no radial pulse. Treatment—control of hemorrhage, wounds dressed. 750 c. c. of seven per cent. acacia solution given intravenously immediately while brother was being sent for and tested as a donor for transfusion. Pulse picked up in volume for short time. Immediately following a transfusion of 1000 c. c. of brother's blood, pulse slowed to 90 and good volume; blood pressure went up to 110 and remained there. The degree of well being manifested by the patient was remarkable. The hemoglobin in this case was not taken, but I believe it must have been below twenty-five per cent. It might be conservatively stated that this patient's life was prolonged by the transfusion of blood. Transferred to County Hospital on the sixth day, general condition good, no infection of wounds.

Discussion opened by Dr. Carl Hoag, San Francisco.

FRACTURED FEMUR.*

By HOWARD H. DIGNAN, M. D., San Francisco.

It is my purpose, in this paper, to give but a summary of the general principles and methods of treatment involved from the vast number of fractured femurs encountered during the war.

I wish to show how, and by what means, a mortality of about 70% in fractured femur cases during 1914 and 1915 was reduced to between 15 and 20% in 1918.

Results of fractured femur cases in this country are not what they should be, and they can be very greatly improved upon by a study of the methods which war necessity and experience evolved.

Two of the fundamental principles of fracture treatment found a soldier's grave.

1. The immobilization of the joint above and below the site of fracture.

2. Internal fixation of fractures.

Both of these principles are now practically obsolete.

Numerous and uncertain methods went into the melting pot of war, a few very definite methods were crystallized out.

In general the methods used in this country before the war were:

1. Long Liston splints, and these splints were responsible for the high mortality in the early days of the war.

2. Buck's Extension, far too cumbersome and inaccessible for dressings.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

3. Plaster casts, unclean, allowed no mobility in joints and prevented dressings.

4. Internal fixation with Lane's metal plates, metallic bands, screws and wires, pegs and many other very ingenious devices for obtaining bizarre results.

What, on the other hand, are the methods which were crystallized out? What method got the results and withstood comparison?

Only one, really, and that is the Thomas splint, or one of its modifications; the underlying principle is the same in them all.

One of the first things we were asked on beginning our service, in the British war hospital, was "to Please not invent any splints, they had been through so many already." The more we used the Thomas splint the more we learned to do with it and the better results we obtained.

Much has been written and much has been said about this splint, and yet its use here has not been universally adopted. It reminds one of Mark Twain's remark about the weather. "There is a great deal said about it but very little done about it."

One feels, however, that it is important, that it must be gone over again and again until it becomes the standard procedure and until the results of fractures are very greatly improved.

Fixation is then no longer important.

Traction has become the important thing.

I might here go over a few points gleaned on my service in the Welsh Metropolitan War Hospital, during the year and a half I was there, and where there was never less than a hundred fractured femur cases.

TRACTION

There were several methods, each having its own special advantage.

1. Adhesive tape—sometimes irritates and often slips.
2. Sinclair glue and flannel was very efficient.
3. Liquid glue and stockinette.
4. The Steinman pin through the lower end of the femur was used somewhat.
5. The caliper method gave very good results.

For producing and maintaining traction there were also several methods.

1. Simply tying the traction bands over the ends of the splint.
2. Steel springs.
3. Weights and pulleys, or
4. Fixed screw traction.

The two latter being by far the better.

Each of these means demand attention. They must be seen and regulated at least once daily. Provided sufficient traction is maintained the particular mode, is of individual choice. One thing which may cause trouble is the ring, as the point of counter-pressure is against the tuber ischii.

A ring should be made to fit snugly, the skin, during the first two weeks, should be pulled back and forth under the ring so that the pressure does not always come on the same place.

Bathing with alcohol and then keeping it dry with talcum prevents the formation of pressure sores. The greater the amount of suspension the

less pressure there is against the tuber ischii when the weights and pulley are used.

In newly fractured cases excessive traction in the beginning is very important. Where an anaesthetic is given for any reason then is the time to overstretch the muscles. It partially paralyzes them and not nearly so much traction is required to maintain the desired length. An overstretched muscle is a weak one, and the limb can easily be maintained one-half inch over length for the first two weeks and then allowed to come down to its normal length.

Maximum traction in the beginning when the ligaments are firm is safer than gradually increasing traction which later comes on softened ligaments and produces relaxed joints.

Maximum traction in the beginning decreases the pain, gives a better alignment before any fibrous tissue has grown into the clot at the site of fracture, and it can be more easily maintained against muscles, weakened by overstretching.

The value of overstretching the muscles, we learned, in correcting shortening. It was easy to correlate with the weakness of the muscle overstretched in paralysis after the division of its motor nerve.

There were many cases with two and three inches of shortening, relics of the Liston splints, with firm union, but with knee and ankle joints gradually failing as a result of the improper balance and the stretching of certain ligaments, the shortening of others, when the body weight is not supported on anatomical lines.

These cases were corrected as follows:

An osteotomy was done, and where necessary the scar tissue was cleared away. The leg was then pulled down to the desired length, and it is not an easy procedure. Counter-traction was obtained by a large padded band passed between the thighs and by ropes fixed to the wall of the operating-room. Traction was obtained in the shorter cases by a six-ply pulley attached to a Steinman pin through the condyles.

Traction in the older cases had to be carefully watched as there was often considerable shock. It must be done slowly, the traction often relaxed to restore the circulation and then slowly begun again, and maintained for a short time when the proper length has been obtained.

The pin is then removed and permanent traction can be easily maintained with adhesive or moleskin. No fixation of the bones was necessary.

I remember, particularly, a young British officer with $4\frac{1}{2}$ inches of shortening and marked external rotation. He had had an untreated double fracture of the femur in the African campaign, ten months before.

A double osteotomy was done, and he was pulled down as far as possible; no fixation was done. The leg was put up on a Thomas splint, alignment of the fragment was maintained by the pressure-pads, and he finally left the hospital with one-half inch shortening.

There is considerable shock after these very forced tractions, and a careful watch is necessary for the first forty-eight hours.

In none of these cases was any fixation ever used. Frequent X-rays were taken and any displacement corrected by pressure-pads.

Alignment is not difficult to obtain with sufficient traction, the bones are pressed into their proper line by the tension of the muscles, and overstretched muscles will not produce the bone displacement that shortened muscles will.

The longer that shortening has persisted the more difficult is its correction. In some cases with very extensive scar tissue, it could not even be attempted.

CONDUCTION OF A CASE

Measurements:

1. Circumference at crotch add $1\frac{1}{2}$ inches.
2. Tuber ischii to one-half inch below heel, for caliper, eight inches longer for splint.

The great advantage in having a ring, which fits snugly, is that by cutting off the end it may be converted into a caliper.

Exercises:

1. Adduction and abduction at hip maintains hip motion. Keeps up tone of muscles, not concerned in causing displacement.
2. Quadriceps.

The exercise of these muscles is very important. Ankylosis of the knee in most of these cases does not occur owing to adhesions between the tibia and femur, but between the femur and patella. It is the fixation of the patella which causes limitation of motion. By contracting the quadriceps for an hour or two daily the mobility of the patella is maintained and knee flexion is not impaired.

Ankylosis of the knee joint may occur when the lateral and crucial ligaments have been decidedly overstretched, unless the patella is kept mobile.

Stretched knee ligaments will tighten up with usage and the return of muscular power, if the bony alignment is correct and no abnormal strain is put upon them.

WALKING CALIPER

When union has been secured in a femur and has become fairly solid, the Thomas splint, by simply cutting off the end and turning the bars in, may be converted into a walking caliper. It is never advisable to maintain the body weight on a recently united fractured femur, for two reasons:

1. The danger of refracture.
2. Bowing or bending at the site of union and consequent shortening.

The latter is a very, very common thing and has followed innumerable fractured femurs in this country.

By arranging to have the caliper one-half an inch longer than the leg, the heel does not quite touch in the shoe and the body weight is borne by the tuber ischii, on the caliper ring.

When the union becomes firmer by shortening the caliper, any portion of the body weight may be shifted to the leg.

Few fractured femurs should bear full weight, unsupported at three months, and it was cus-

tomary in the British hospital to use the caliper for three to four months after union.

In the early weeks the caliper can be worn at night, and knee flexion exercises practiced to prevent any limitation of motion in the knee joint.

It is very easy to firmly splint a leg in a caliper, and fractures in aged people may be so treated from the beginning. It may be necessary to get a patient up out of bed due to some other complication, all can be readily done on a caliper.

CASES

I have recently had two fractured femur cases under my care.

The first, ununited after one year, a simple transverse fracture which had been plated months before.

The second, ununited after six months, also plated months before.

There was not the slightest necessity for plating these bones. The plates were only six inches long and three-fourths of an inch wide, of absolutely no use except as toys, and, of course, came loose and had to be removed. There was shortening in both cases.

The procedure adopted in both of these cases was as follows:

A preliminary operation. The plates were removed, the ends of the bone freed and roughened. Some of the excess callous was removed. The leg was pulled to proper length by a pulley with a band around the ankle, and traction maintained for about ten minutes to insure thorough overstretching of the muscles.

The leg was then put up on a Thomas splint. No fixation was used; none was needed, nor had it ever been. At the end of a year, in one case, and at the end of six months, in the other, these two fractured femurs were just where they were the day of the injury, and how much easier they were to treat in the beginning, had the surgeons who first saw them, understood the simple principles of the Thomas splint.

PLATING

The use of internal splints in the war met with a decided failure. Lane's metal plates, wires, pegs, etc., impossible, of course, during an infection, could not be used until the infection had been healed for about one year, owing to the presence of encapsulated organisms in the scar tissue. An operation of any sort, which introduced a foreign body, might light up a latent infection.

Where there was loss of bone substance, or non-union due to excessive scarring, the choice of all methods was the bone-graft.

The bone-graft was not used primarily as a method of fixation, but as a bone-bridge. In war surgery it was applicable only to very late cases, those healed for eight to ten months.

In civilian surgery it is a rarely-needed procedure. It is, however, the proper method where bone substance has been lost.

Discussion opened by Dr. Lionel Prince, San Francisco.

Discussed by Drs. M. L. Emerson, Oakland, and M. Miller, Los Angeles.

EPISODIC MENTAL STATES AND BORDER-LINE CONDITIONS IN PSYCHIATRY.*

By CHARLES LEWIS ALLEN, M. D., Los Angeles.

In our consideration of supposed mental abnormalities we are at once confronted by the lack of a standard of mental normality. On account of our want of intimate knowledge of those processes which are the basis of the manifestations which we bring together under the name of mind, it seems improbable that such a standard can ever be more than relative and it must vary with the period, the race, the social status and the educational advantages enjoyed by the individual under consideration. Dependent upon variations in these factors and especially with the social conditions, there occur fluctuations in the mental state, affecting not only individuals, but groups and peoples, spreading as it were by contagion and swinging far to the pathological side in the less stable members of the community.

Equally do such variations occur in the course of diseases, not only of the brain, but of other organs. The psychopathology of somatic disease is yet to be written, but this much we know, namely, that we do not find one kind of psychosis in infectious diseases, another in diseases of the heart, a third in diseases of the digestive tract, etc. Rather does it appear that the type of psychic reaction depends upon the individual make-up, one person showing a disturbance of manic form, another stupor or delirium, still another catatonia, etc.

On practical grounds we have found it desirable to divide mental diseases into certain fairly defined clinical types. One common characteristic of all of these is the tendency to run a course, not of days or weeks like somatic diseases, but of months and years. In all of them this course may be broken by sudden fluctuations in the mental state, or episodes, which change the picture for the time being, but are of limited duration only. It is quite possible for similar episodes to occur apart from a recognized psychosis, in connection with the causes mentioned above, and under such conditions their evaluation may present some difficulty.

How frequently do such episodes occur?

Everyone is subject to variations in his affective condition. The exaltation of good fortune, the depression of ill luck or domestic bereavement may well attain a pathological intensity, but such reactions are expected under the circumstances and if not too prolonged do not take the patient across the border-line between sanity and insanity. Finding a person in an affective state far above or below the base line of health, our inquiry is as to its motivation. The pathological affects are insufficiently motivated, intense and prolonged.

Clouding of consciousness is an everyday problem of internal medicine, occurring not only in diseases of the brain but in those of other organs. It is to be emphasized, however, that confusion and delirium are common episodes in epilepsy and the psychoneuroses, which may impress no immediately recognizable stamp upon the clinical features of the case and may require accurate history

and careful consideration. The medico-legal importance of such episodes is of the greatest.

Fallacious perceptions may occur in states of abstraction, in half sleep (hypnagog hallucinations), under the influence of drugs or of intense emotion, and while border-line phenomena are not conclusive as to mental unbalance; it is not their occurrence, but their reception without correction and incorporation into the personality, that stamps the case as a psychosis.

Most of us hold as false, many of the opinions of our fellows, and nothing is more difficult to decide than whether more or less improbable statements are the result of delusions or not. It is not the falsity of an idea, but the fact that it cannot be corrected, even in the face of overwhelming proof to the contrary, that constitutes the insane delusion. The emotional condition under which it originated exercises a decisive influence upon the tenacity with which an idea is held and the urgency of its insistence. Ideas which most move the populace are usually the product of the emotions, rather than of knowledge and logical deduction and proceed from individuals of high affectivity.

Vivid or long-sustained impressions with strong affective tone, are apt to be followed by "hyperquantivalent ideas," that is, ideas not unnatural in their origin, but of an intensity and persistence so pathological as to cause the subject to react in a manner essentially abnormal; for example, suicide by a person who has lost a beloved one, assault by the victim of an accident upon someone whom he holds responsible for a denial of just compensation, etc. While hyperquantivalent ideas develop within the mind of the individual and are recognized by him as part of himself, "autochthonous ideas" appearing as sudden episodes, force their way into the consciousness as something foreign, coming from without and may serve as the starting point for explanatory attempts, in which unseen influences set in motion by the physician or someone else are accused and the development of a system of persecutory delusions is begun.

Allied to the above phenomena are "imperative ideas" or obsessions, which, arising like the doubts, fears and impulses which inopportunately intrude themselves into the mind of everyone, in psychopathic individuals reach such a degree of intensity as to dominate the personality and life of the sufferer, incapacitating him from duties and pleasures alike.

These furnish an example par excellence of episodic mental states, for they are seldom continuous but burst in upon the patient with overwhelming suddenness and force. He himself recognizes them as the veritable though pathological product of his own psyche, may make agonized resistance, but in the end yields to them, experiencing thereby a sense of relief. Apart from his paroxysms he may impress those surrounding him as a normal and agreeable person. These pathological doubts and fears may attach themselves to anything, material or metaphysical (examples: agoraphobia, fear of open spaces; mysophobia, fear of pollution; onomatomania, domination by a search for, or desire to repeat, a certain word—religious doubts as to God and the Hereafter), etc., etc.

* Read before the Forty-ninth Annual Meeting of the Medical Society of the State of California, Santa Barbara, May, 1920.

Sudden impulsions to drink, to steal, to throw oneself from a height, etc., are phenomena allied to the above. In the most extreme form of this malady the patient can decide nothing, fears everything, the so-called "Doubting mania" ("Folie du doute avec délire de toucher").

While in a person without hereditary tare, psychopathologic episodes may, under exceptional stress, occur, such manifestations are rare in the mentally robust. Correspondingly frequent are they in the large class of constitutional psychopaths. Every physician who is sufficiently observant will notice among his patients people who, while not in strictness insane, differ from the normal in their ability to adapt themselves to the situations of everyday life. They are not mentally defective according to accepted standards, can reason fairly well up to a certain point, but are unable to make sustained effort and their affectivity is too high, influencing inordinately their views and their conduct. Subject to constant fluctuation between depression and exaltation, their mental state seldom remains long near the baseline of health.

These are the cases of constitutional depression or exaltation. The depressed phase is characterized by ideas of unworthiness or remorse or by hypochondriacal fancies about the health, which it is imagined is seriously impaired through influences more or less banal. In their wretchedness the victims readily grasp for drugs or for alcohol, adding other deleterious factors which, though pounced upon by solicitous relatives—bound to keep the family skeleton in the closet—are really secondary in their etiological importance.

In the exalted phase, beautiful ideas, not only of improving his own condition, but for reforming the community or the world, fill the mind of the patient, but having no solid background of information and judgment and the pressure of the activating effect soon falling off, they are never carried out but fail at the first obstacle, strengthening him in his opinion as to his own unworthiness or on the other hand raising in him suspicions that his failure may be due to unjustified opposition on the part of his family or officials, to secret influences or what not, which become the initial link in a long chain of persecutory ideas, leading, if uncorrected, to a paranoid state.

The psychopathic constitution is the border-line condition par excellence. Its relations to the psychoneuroses, neurasthenia and hysteria, on the one hand, to the manic-depressive psychosis and paranoia, on the other, and a certain puerilism which points out that its victims are in mental development really at a stage between the moron and the fully-developed adult, are as obvious as are the differences which separate it from each one of these conditions. Of this defective constitution are a large proportion, not only of the harmless cranks and pseudo-reformers, but also of the pathological liars and swindlers and many habitual criminals and prostitutes.

The rich psychopath wastes his time and substance on one foolish project after another or flits from doctor to doctor, from sanitarium to sanitarium; the poor one drifts along as a "ne'er do well," resorts to alcohol or drugs, all too easily

falls into bad company, and in the end takes what seems the easiest path, and is enmeshed in a criminal career.

The frequency of this condition, long known to psychiatrists, has been recently emphasized by our war experience and it has been amply demonstrated that men of this constitution are unfit for military service, being a liability, not an asset.

Episodic mental disturbances, often a medico-legal problem in civil life, are doubly important in the military establishment. Many sudden infractions of discipline, especially desertions, are due to this cause, and doubtless not a few unfortunates have been summarily punished for offenses committed during temporary mental aberration. The importance of psychiatry in the army has been fully proved, and while the service of the psychiatrists called for no theatrical heroism, it was none the less conscientious and useful.

In considering an episodic mental disturbance, complete previous history and thorough study may be necessary to elucidate its relationships.

In the first line we think of epilepsy, but in the absence of any definite evidence of convulsive seizures or petit mal, though the mental make-up may be very suggestive, it is hardly justifiable to diagnose this disease.

The stigmata of the psychoneuroses are not always evident, but careful history and study of the circumstances preceding and surrounding the episode, with consideration of the mental make-up of the individual, may elucidate the connection. The terrific experiences of the battle front are naturally a most potent cause, and military psychiatrists have found that a very large proportion of episodic disturbances seen in soldiers arise upon a basis of hysteria. We see such cases far from infrequently in connection with the shocks and stresses of civil life.

The obsessive phenomena are generally considered as belonging to the psychoneuroses, have been usually attached to "psychasthenia."

Short confusional conditions should be investigated medically and psychologically. They may be due to somatic causes, to the neuroses; often they are abortive manic-depressive manifestations. The writer recently observed a man who had periods of confusion lasting five or six days on an average of once a month.

Neurosyphilis, especially in the form of general paresis, should share with epilepsy our first thought, though the presence of a positive Wassermann reaction should not deter us from considering possibly more important factors. Other organic psychoses give general and neurological symptoms.

Dementia precox begins most insidiously and is at the start most difficult to diagnose. The inclusion of a case into this category is seldom justified without accurate history or prolonged observation.

A characteristic of the psychopathic personality is that realization of disease is seldom absent unless, perhaps, during the height of the disturbance.

The prognosis in a mental episode is naturally dependent upon its cause. In the organic psychoses it is unfavorable in manic-depressive, good for the individual attack but recurrence likely.

In the psychoneuroses and in the psychopathic

constitution, the outlook is good as to the passing of the incident, and suitable manner of life may tend to limit the recurrences, but the underlying make-up remains. How much such people can be educated into self-control and usefulness is not yet demonstrated. As it is, they are misfits in most existing institutions, since they are neither insane nor feeble-minded, and the mainly medical treatment in vogue in sanatoria for nervous diseases often has the effect of confirming notions of invalidism and self-indulgence. The newer strivings after a standardized psychodiagnosis and psychotherapy, amid the mass of ill-supported assumptions and doubtful recommendations, are gradually uncovering useful facts, and hope for the future seems to lie more in the application of what is learned from the study of the psychology of the individual than from the further elaboration of strictly medical treatment. Special institutions, chiefly educational and disciplinary, though always under medical control, would seem to offer the best prospects for making useful citizens out of this large and unfortunate class of the community.

FOR BETTER TREATMENT FOR CRIPPLED CHILDREN

By HARRY LESLIE LANGNECKER, M. D.,
San Francisco.

The adoption and favorable working of the Educational Amendment, which particularly relates to more adequate facilities in the education of these handicapped children in this state, would solve an important problem confronting the people at the present time. Special provision must be made for the education of these children. Because of some physical deformity, attendance at the regular public schools means difficulty in transportation; over-exertion and bodily strain in the use of poorly-adjustable school furniture; insufficient food allowances and the exhausting study periods. Physicians and child welfare workers most emphatically endorse any enactment of reasonable measures which will permit the proper training with the least suffering and hindrance toward the improvement of such deformities. Methods along these lines have been utilized with great benefit in other cities. Therefore, such measures are not in the experimental stage. Your interest and aid in the support of these measures signify the greatest assistance to these crippled children.

EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

By JOHN C. KING, M. D., Banning, Cal.

Some time ago a paper was printed in a prominent medical journal savagely attacking tuberculosis specialists, particularly those who conduct sanatoria. The author, who had attained the rank of Colonel, was a surgeon in the regular army. He claimed he had been examined; pronounced the victim of incipient tuberculosis; sent to a sanatorium for six months and then discharged cured. He further claimed he had never had tuberculosis; that, because of faulty diagnosis, he had been subjected to unnecessary mental distress and financial sacrifice; and furthermore, that a large number of sanatorium inmates are suffering from similar injustice. Twenty years ago

an Indian, named Siguando, came under my care for serious tuberculosis. He had hemorrhages, cavities, fever, T. B. in his sputum. He completely recovered. Every year or two he comes to my office for a chat, and always jokes about my mistake when I pronounced him consumptive, assuming that had I been correct he would have died.

The Colonel and the Indian are about on a par. Many army doctors have accepted the view that the diagnosis of pulmonary tuberculosis must not be made until evident signs appear in the lungs. This may be a wise rule to apply to drafted men, from a government standpoint. However, we have had a number of soldiers in our sanatorium. Roughly speaking, there have been two classes. To illustrate: An enlisted man passed the Los Angeles board, was sent to Camp Kearney, passed again and put to work. In a couple of months he felt run down, reported at sick call, was given a purge and told he was all right. He had difficulty in doing his work, was joked about shirking but strove to keep up. A few weeks later he put up streaks of blood; reported again at sick call, was examined and laughed at. Later he coughed up a tablespoonful or more of blood. He was then examined by several medical officers, told his lungs were sound and ordered back to full duty. Some months later he was discharged because of advanced tuberculosis. When I saw him he was beyond hope. Another, a drafted man, passed a board in Utah, was sent to Kearney, passed there and put to work. Some weeks later a specialist examined him, with a bunch of others. He was ordered to report for further study and a short time after was discharged. After leaving the army his personal physician sent him to me. It required a week's study for me to determine the fact of his tuberculosis. After a few months of careful treatment he recovered. Another example: A physician in Berkeley has for years been sending occasional patients to our sanatorium. With one exception they have all recovered. He has the faculty of making a very early diagnosis. During the same years a professor in one of our leading medical colleges has been sending patients to me. All of them have died. This gentleman is very expert in his own specialty but does not recognize early tuberculosis. The importance of early recognition is obvious. My personal errors have convinced me of the difficulties surrounding this problem.

At the 1919 meeting of the A. M. A. Dr. Geo. T. Palmer read an illuminating paper to which I invite your attention, although most of you must be familiar with it. Palmer claimed that, from the standpoint of preventive medicine, discovery of the organism causing a disease postulates reduction of the prevalence and mortality of that disease. For proof he refers to our great or less control of malaria, diphtheria, typhoid and yellow fever. With the T. B. our experience has been different. It is forty years since the germ was discovered. For thirty years an organized effort has been made to combat it. For fifteen years an intensive crusade against it has been conducted by national, state and local anti-tuberculosis leagues and other agencies. The results have been

disappointing. The T. B. is unlike other pathogenetic germs in that the relation between infection and disease seems remote. Autopsies prove that 90 per cent. of all who die have been infected, but that in 80 per cent. the infection has remained latent. In other words, consumption is not the result of simple infection. Active tuberculosis is the product of infection by the T. B. plus some other factor. It is the product of symbiosis (if the term may be so applied) involving the germ and a condition. These conditions or factors involve every phase of social life.

During the twenty years following the organization of the first anti-tuberculosis society the mortality decreased from 238 to 166 per 100,000—30¼ per cent. We all remember the enthusiastic congratulations that followed this report. Further investigation, however, renders us skeptical. From 1872 to 1891 (twenty years prior to any organized effort to fight the germ, and ten years before its discovery) the mortality fell from 339 to 245—27½ per cent. In 1812 the mortality in Boston, New York and Philadelphia was 450. This gradual reduction of mortality during one hundred years, a reduction not accelerated by the intensive warfare against the germ, teaches several lessons. It teaches that consumption is not the result of infection alone but of infection plus something else; it teaches that instead of fighting the germ and trying to avoid initial infection we would better learn how to live with the T. B. and wage warfare against those other, myriad factors of social life that maintain a symbiotic relation to it.

It was first suggested by Behring, I think, and has gradually become the consensus of opinion among experts that infection usually occurs during childhood, more often while the child is yet an inhabitant of the floor; and that by the time adult life has been reached practically all have become infected. If, then, the incidence and dissemination of the germ have not been reduced it behooves us to inquire what changes have occurred in the other factors, changes responsible for the reduced mortality. For one hundred years living conditions have improved. Cleanliness has been inculcated; fresh air and night air are no longer antagonized; sewage disposal has been perfected; housing conditions have improved; water, milk and food supplies are more abundant and purer; sanitary schools, public buildings, factories and shops have been erected; child labor and long hours of labor have been curtailed; many diseases known as forerunners of tuberculosis have been modified. Only two examples will be noted. Government investigation among its own employees has demonstrated that the incidence of tuberculosis is in inverse ratio to the wage. General Gorgas' report on conditions at the Isthmus disclosed the fact that the old Spanish town was inadequate to house the required labor and was vilely unhygienic. He built a new, sanitary town. The labor and the laborers remained the same; the wages, hours, food and water supplies continued the same. But, the prevalence of respiratory disease was 900 times greater in the old town than in the new—nine hundred cases to one. What

has all this to do with the early diagnosis of pulmonary tuberculosis? The diagnosis does not depend, exclusively, upon the recognition of infection, that is almost universal. The diagnosis must be based very largely upon those other factors which we know will, if not remedied, lead to active tuberculosis.

There is absolutely no pathognomonic sign nor symptom of early tuberculosis, therefore its diagnosis is more of an art than a science. That is why many regular army examiners, who feel they must have some definite, tangible lesion to record and to report, are out of harmony with tuberculosis experts. Furthermore, it should be emphasized that, in a large proportion of early cases, the diagnosis cannot be made at the first examination. The patient must be kept under observation in hospital, sanatorium or home and, perhaps, be repeatedly examined before a definite conclusion can be formed. I am frequently embarrassed by the demand for an immediate decision regarding some border line patient I have only known for an hour or less. Incidentally it may be remarked that prognosis, in early cases, depends almost exclusively upon factors other than mere infection. It is this fact that renders sanatorium life so valuable an adjunct to the treatment. It is in connection with the history of the patient that most of these extraneous factors develop. To what race does he belong? We know that, in this country, Jews are resistant while Indians are susceptible to active tuberculosis. We do not know why. The theory of the tubercularization of races or nations rests upon the same basis as the theory of their syphilization. Various races do exhibit varying susceptibility. Symptoms that might appear in the Jew, for instance, without causing suspicion might, in the Indian, occasion anxiety. Family history? Consider an actual instance. Grandparents on both sides healthy. Parents healthy and outlived all children. No case of tuberculosis in family. Ten children. Parents poor, children required to earn a living. At an early age all left home. They resided in eight states, none within 200 miles of another. Each and all of them died of tuberculosis between the ages of about 21 and 32. Obviously the children inherited something that rendered them an early prey to consumption. Their inheritance was not tubercular infection.

Practically speaking, children are never born with T. B. But, in these cases, the early diagnosis involved the discovery of that hereditary factor. It may be important to know whether the parents, or others of the family, suffered from tuberculosis, especially while the patient was very young. That fact, however, enables us to trace nothing more than infection, and we admit the extreme probability of infection in all cases. We must study the family history with the purpose of determining the hereditary factor capable of entering into a (so-called) symbiotic relation to the infection. It can be done. To discover whether the parents were alcoholic, neurotic, syphilitic; whether they were capable or incapable of transmitting normal resisting power; is far more enlightening than to know, merely, whether they

had tuberculosis. For instance: A father died of consumption six weeks prior to the birth of his child, and the mother died, also of consumption, three weeks subsequent to its birth. Both were my patients. The child is now 28 years old, strong, well and the father of healthy children. Associates, intimate or casual? They cannot do more than convey infection, and we assume that anyhow. Still, it may be interesting, even if problematical, to attempt to trace the initial entrance of the germ. Did some companion in shop or office suffer from open tuberculosis? Probably, but we should go far back of that. Did some childhood chum, with whom the patient slept and divided apples cores, have power to convey the germ? Perhaps, but necropsies teach us that almost 50 per cent. become infected before the age of two years. Did the mother have an open case and transfer the sputum to the child by direct feeding? "Mama a bite and baby a bite." Maybe, but after all it is futile to attempt to determine the origin of infection.

The germ is omnipresent. We can make a shrewd guess at best. Age. I saw one child die from pulmonary tuberculosis at three months. I know of an existing case aged 13 months. I have had a number of patients, aged from four to ten, sent to me by other physicians. We have had many in our sanatorium between seventy and eighty. There is no age limit. In proportion to the number living at ages from 65 to 80, I think as large a percentage have open tuberculosis as at earlier ages. Among these old people the disease is less active, assumes a more chronic form and is called bronchitis or winter cough. Then, again, in children from two or three to eight or nine the glands, joints, meninges and peritoneum are more obnoxious to the germ than the lungs. At or near puberty we meet an increased number of pulmonary cases. The curve then descends until about the age of twenty-two, when it rises. We should remember that neither age nor infection is the determining factor but some period of stress that becomes (for want of a more expressive term) the symbiotic condition essential to activate the infection. It may be puberty, sexual excess or lactation; it may be overwork or study, domestic trouble, anxiety or business strain.

Business. When a student I was taught to classify consumption. Miner's phthisis, stone-cutter's, metal grinder's, etc. Later we were taught that miner's phthisis, for instance, was simply due to infection from some other miner or from an infected mine. Now we realize that the miner was infected, in all probability, long before he entered the mine; that long hours, darkness, bad ventilation and other unhygienic things became the symbiotic conditions that made his infection active. So we deem the patient's business a factor in early diagnosis, not per se but in proportion as conditions under which he does business contribute to lowered resistance. The patient may be a farmer, school boy, shop girl or what not. The farm is not to blame, nor the school nor shop. But, if we consider the circumstances surrounding his work we may arrive at an earlier diagnosis. Of course, we take cognizance of the fact that certain vocations are inherently unhealthful.

Habits. Always responsible for a large proportion of what we term acquired predisposition. Sedentary living, especially irregular living; lack of punctuality regarding food, sleep and exercise. Use of alcohol, tobacco; any habit that interferes with physiological function, that perverts nerve force, will render early diagnosis more probable. History of previous disease. The Metropolitan Life Company has found that during the five years subsequent to an attack of typhoid fever the incidence of active tuberculosis is increased about 50 per cent. Victims of hookworm, syphilis and other debilitating infections become more susceptible. It is well known that measles and whooping-cough predispose to activity of latent T. B. infection. Influenza is a frequent and potent factor. General conditions, as food, clothing, shelter, poverty, overwork, worry, need only be mentioned because we all know the relation they bear to consumption. The present illness, for which the patient or his friends demand consultation. Did it begin suddenly or insidiously? We never inquire when it began; we ask, "When was the patient last perfectly well?" We rarely ask a question that can be answered "yes" or "no"; we want information. If all these and other historical data have been carefully investigated we can usually discover whether there is present some factor that will probably determine activity in the almost universal, latent infection. At first blush it might appear that, because more or less of these factors are present in each case brought for examination, we would be tempted to pronounce all of them early cases of active infection. Not so. Just here is where art asserts its prerogative. The skilful clinician will learn to differentiate. Laboratory science has little place, at present, in solving this problem. Symptomatology is equally elusive and uncertain. Like the history, the symptoms only serve as indices, as guide-posts.

Let us review a few of them. It will be found they chiefly indicate what we call lowered vitality. They may mean much, little or nothing—as we possess the art of interpretation. They are valuable in so far as they reveal the symbiotic factor responsible for activating the infection, and also because they sometimes indicate local activity. Eyes. Dilated pupils and, perhaps, a peculiar brilliance of the conjunctiva not to be confused with that accompanying fever. The ophthalmoscope is of no aid except in cerebral lesions, which we are not considering. Ears. Former otitis media is suspicious. Nose. Acute or chronic turbinitis is not significant, but frequent attacks of rhinitis, extending downward by continuity, may be suggestive. Perforations are late and, if not traumatic, always syphilitic or tubercular. Pharynx. Lymphatic tissue, if diseased, should always be removed, bearing in mind that operation may be followed by a temporary exacerbation of any infection having its original focus in the tonsil. Larynx. Note slight changes of the voice. Look for slight infiltration of the arytenoids. These symptoms may precede cough and expectoration. Neck. Examine the glands, remembering the distribution of their lymphatics. Cough. Probably absent. If present, usually a "hack," or noticed only in the morning or at the end of inspiration.

If persistent, without obvious cause, for, say, a month, it often indicates beginning activity. Expectoration. Absent as a rule. May be mucous from bronchial irritation. Chest pain. May be muscular, especially involving the intercostals; may be neuralgic, with tender spots along the course of the nerves; may be dry pleurisy. Regardless of origin it is often the precursor of activity. Most pleurisies, of course, are tubercular. Dyspnoea. Contrary to expectation it may be an early symptom, when solely of nervous type. Hemorrhage. Is the first symptom noted in 20 per cent. of the patients. Hematemesis and purpura are easily excluded. Inspection of the naso-pharynx and larynx will prove their innocence. Heart lesions can be detected. Actinomycosis and malignancy are rare.

Aside from these causes practically any hemorrhage from the lungs means active tuberculosis. Abdomen. Indigestion and anorexia are premonitory. In these days we relegate the term "indigestion" to the laity. It may mean tubercular appendix, as I have demonstrated on the operating table. It may mean ulcer or gall-bladder or any one of a dozen lesions, but it should be explained. Menstrual irregularities are of no import. Pulse. Apt to be rapid and blood pressure low. A full, slow, regular pulse is unusual. Temperature. Must be taken at frequent and regular intervals for several days, preferably for a week. If slightly sub-normal in the early morning, rising, regularly, to ninety-nine and a fraction in the afternoon, one can feel quite certain of activity, unless other reason can be ascertained. Skin. Vaso-motor instability, manifested by flushing and sweating, may become slight evidence. Strength may not be affected, but often the patient tires readily; complains of lassitude. In toto, the symptoms of early activity are valuable because they display the somatic reaction to the symbiotic factor. The early signs are equally doubtful. Some of them, too, are apt to be evanescent, present at one examination, undetectable at another; wherefore re-examination should be the rule. Weight may not be impaired. A loss of 10 per cent. within a few weeks demands explanation. The percentage of loss is not to be computed from any table of standards but from the patient's normal weight. Thyroidism may exhibit rapid and extreme loss. Laboratory work upon urine and stool may result in satisfactory explanation of symptoms from other standpoints. Blood work is of little value. There may be leucopenia. Lymphocytosis has been noted. Notwithstanding the accepted view, anemia is uncommon. The hemoglobin content is usually about normal. X-ray examination implies first-class apparatus and stereoscopic plates, together with an expert interpreter. Many of the best authorities, like Haves, claim less than 50 per cent. of accuracy. At the Mayo clinic about 85 per cent. is claimed, but the patients are, as a rule, beyond the early stage. Calcified bronchial glands may be well revealed, but commencing activity cannot, in my experience, be detected. The tuberculin reaction is useless because of its unreliability. When positive it probably proves infection. In a young child that

information may be extremely useful. In older people we must assume infection anyhow. When negative it provides merely the Scotch verdict, "not proven." I am confident no man can deduce from it any evidence that will even assist in determining the latency or activity of the infection; nor any regarding the location, progress or prognosis of the disease. Trans-illumination is deceptive.

In this discussion we are, of course, referring to very early diagnosis. When activity is established and disease progressive many of the foregoing observations become inapplicable. The sputum affords little evidence of early tuberculosis. The presence of T. B., or of elastic fibers, implies the breaking down of tissue, the second stage. Those who wait for the appearance of the germ will have waited too long. The patch of broken-down tissue may be very minute, but it surely exists. Search of a single specimen is insufficient if negative. Better look for it oneself than trust any department of health. Stanley Black tells me he has searched a single specimen four hours before obtaining positive results. If the sputum is centrifuged with 1 per cent. solution of sodium hydrate one is more likely to discover the germ. Mensuration may be of value if one has previously known the air capacity of the individual. Comparison with any artificial standard is misleading. Comparison between the two sides may be suggestive. Inspection may divulge variation in symmetry, lagging of one apex, depression or bulging. Too much stress must not be placed upon these differences because the two sides of the body are rarely, if ever, symmetrical. Stand behind and slightly over the patient; from that pose observe the inflation of the apices to detect lagging.

Palpation. Pottenger's sign is of great value but is difficult to learn. Appreciation of muscle spasm above and just below the clavicle is harder to achieve than detection of muscular rigidity of the abdomen. Percussion offers little evidence in early cases. Elasticity or resistance may corroborate palpation. The back should be supported, the patient should not be examined upon a backless stool. Auscultation. Rales may be absent, or present for a short time only in the morning, or at the end of an inspiration, following cough. Varied or rough respiration and the whisper should be noted. Rales may be rendered audible by small doses of K. I., but their significance is thereby lessened. Amyl may be used to cover an asthmatic wheeze. Bilateral rales, especially below the second rib, almost invariably denote bronchitis. One-sided rale, especially if present at repeated examination, always denotes tuberculosis. Never depend upon a single examination unless the result has been positive. After all, early active tuberculosis may exist without signs. Recognition of its existence becomes what you choose to call it—art, may be; or intuition based on experience; or that rare judicial turn of mind that enables one to apprehend and weigh the evidence. The skilful clinician will rarely err by proclaiming initial activity when it is absent, but the keenest of us will sometimes pronounce the lungs perfectly clear when one of them is the seat of active tuberculosis.

PET AIREDALE UNDERGOES SERIOUS OPERATION

TWILIGHT SLEEP ADMINISTERED WHILE DOG'S SPINAL COLUMN IS STRETCHED

By EDNA B. BREITINGER, Bakersfield, Calif.

One of the most delicate operations on record, and perhaps the only one of its kind, was performed on an Airedale dog belonging to Paul J. C. Derkum of Bakersfield, California, in that city on Sunday, February 13, 1921.

The dog, "Toughy," is a great pet and has many friends all over Kern county. While playing in the street Friday evening, he caught sight of a cat and gave hot pursuit, colliding, while at top speed, with a rapidly approaching automobile. The impact was very severe and the dog was hurled to the street in an apparently lifeless condition. He was picked up in another automobile and hurried to a small, quiet room in the service station operated by his master.

While friends advised putting the dog out of his misery, Mr. Derkum determined to make an effort to save his life. "Toughy" had begun to show signs of great distress, though he could move



Pet Airedale Undergoes Serious Operation. Showing Dog on Operating Table. Dr. J. E. Van Sant with Hypo, Mr. Derkum at Head, and Dr. George Sabichi at Hind Quarters.

only his fore quarters; from the middle of the back downward he was apparently paralyzed.

Dr. J. E. Van Sant, veterinarian, was called, and from the examination he made diagnosed the injury as a dislocation of the spine, advising an X-ray examination. Dr. W. P. Scott, an expert X-ray physician, took several pictures of the region of the injury, one of which showed conclusively that the tenth vertebra at the third rib was out of line one-half inch, pinching the spinal cord and causing paralysis.

In the meantime, Dr. George Sabichi, a Bakersfield physician, had heard of the accident, and the dog being, as he said, "a personal friend," he went down to the service station to make inquiries. Learning the particulars of the case, he suggested to Dr. Van Sant, who was puzzling over a very difficult but possible method of saving the dog's life, that he administer twilight sleep for the operation.

This, both doctors declare, is without a doubt the first time the twilight sleep opiate has been administered to an animal. Two dosages were given in the following proportions: Morphia, one-fifth grain; Scopolamine, one-fiftieth grain, at intervals of one hour. The dog went to sleep easily and quickly.

Then came the difficult part. That vertebra must be put in place. To reach it by surgical operation was deemed impossible because of the location of the injury, immediately back of the diaphragm. There was one alternative, to stretch the spinal cord sufficiently to allow the vertebra to snap back into place. Two men grasped the front paws and two the hind quarters. There was a long, steady pull, and suddenly with a pop like a pistol shot, the deed was done. This was early Sunday afternoon. About midnight the dog came from under the influence of the drug and whined for his master. His little stumpy tail wagged feebly and he responded to reflex action, showing that paralysis had disappeared.

The region of the injury was kept in alternate hot and cold packs to provide nerve stimulus and to prevent possibility of a blood clot.

The length of the body was enclosed in a burlap sling with a splint to hold the vertebra in place. At frequent intervals the dog was suspended in the sling with his feet resting lightly upon the surface of the table to allow free circulation of the blood.

A second X-ray picture was taken Monday morning. This showed that the spinal column was in line again, proving that the operation was entirely successful.

"Toughy" was pronounced "out of danger" on the second day following the operation, although Dr. Van Sant said it could not take less than three weeks for him to recover completely from the effects of such a serious injury. Each day showed more activity and signs of life in the injured region.

Interest in the case was widespread among medical men because of the unique method of treatment.

MODERN RADIOTHERAPY.*

By FREDERICK HASE RODENBAUGH, M. D.,
San Francisco.

Many clinicians fail to recognize the extensive application of radiotherapy in modern medicine. The term, radiotherapy, implies the employment of both radium and the X-ray in the treatment of disease, and the clinician of today should be as familiar with the scope and the limitations of radiotherapy as with surgery or any other therapeutic agent.

As modern radiotherapy is of comparatively recent development, there is naturally much discussion as to its method of application and its value in any group of cases. Obviously with this as with other forms of therapy, no group of cases is amenable to any single agent. Experience has taught that only by a proper combination and co-ordination of X-ray and radium with surgery and electrothermic methods can the best results be obtained.

There is a tendency with some workers with

* Read before the St. Francis Clinical Society.

radium to attempt to encompass the entire domain by radium therapy. Their attitude has been most harmful to the cause of radiotherapy. They are, as a rule, men with inadequate experience in the use of the X-ray and its combination with radium. This attitude should be discouraged. The future field of usefulness for the X-ray will probably be much greater than that of radium at present. Whenever possible for economic reasons, the X-ray should be used instead of radium, whenever the same therapeutic result can be obtained.

Again, there are some radium workers who are using emanation, and decrying the use of all other forms of radium. Such a state of affairs is most deplorable. Much of the best work has been done, and will continue to be done, by individuals possessing relatively small, but sufficient, quantities of radium salts. The problem of adequate radium dosage is not one of radioactivity, but one of amount of radioactivity. Similar results can be obtained with either salt or emanation by competent workers using the proper technic.

It is not my intention to analyze or discuss the entire field of radiotherapy, but I will endeavor to outline briefly the more striking features of the work in several eastern clinics, which it was recently my privilege to observe.

Although radiotherapy is by no means limited to the treatment of malignancy, it is in this rather hopeless group of cases that it has deservedly excited the greatest popular and professional interest. Naturally there are enthusiasts expecting impossible results in all types of cases, and pessimists complaining that miracles have not been performed. However, not all failures must be ascribed to the inefficiency of radiotherapy, as the percentage of cases suitable for treatment, with present technic, is as small as the number of cases suitable for radical surgery. But there is an amazingly large number of cases in which the results have exceeded all expectation. In most instances such results have followed proper combination of all modern methods of treatment.

UTERINE CARCINOMA

When we consider that by a conservative estimate 8 to 9,000 women die in the United States each year of carcinoma of the uterus, and that an elaborate search finds but few women operated upon during the five years prior to 1916 who have been cured of carcinoma of the cervix uteri, can any consideration justify the postponement of the general use of radium, or any other agent in the treatment of uterine carcinoma, that can in any way diminish this dreadful scourge. While any figures are low, yet the number reported living indicates what an extremely small percentage of cures of cancer of the cervix uteri surgery is able to achieve. Contrasting this record with the record which radium has already made, immature though this record may be, the fact that it has produced cures of two to six years' standing in inoperable cases, and that it has produced cures of four years' standing and over, in a larger percentage of earlier cases than surgery has produced, and the fact that the use of radiation in no way interferes with the routine life of the patient and is attended by no primary mortality, these facts alone justify and

demand its use in all cases. We have every reason to believe that with the rapid improvement of modern X-ray technic, enabling the radiotherapist to deliver lethal doses to pelvic metastases, beyond the reach of radiation from within the uterus, that the end results will be increasingly better, and the mortality greatly diminished.

Were radiotherapy used in early cases, as well as in the advanced cases, more cases of cancer of the uterus would be cured than are now saved by operation, and a public knowledge of this fact would be a potent factor in inducing women to seek help in an early stage, and not delay because of the knowledge of the discomfort and the risk of a radical abdominal operation. A strong argument for abdominal surgery has been the fact that it is the only method of successful removal of lymphatic metastases, yet it is the rare case, with such metastases that has recovered, even if the patient survives the primary operation. We can then assume that only rare cures can be obtained when cancer has metastasized and that in any attempt at radical surgical removal, the chances of cure are more than offset by the very high primary mortality.

From a therapeutic standpoint cancer of the uterus can be regarded as a local disease and obviously the most practical method of treatment is at its site of origin. Cancer of the cervix also in many cases displays a strong tendency to remain localized for long periods.

The present evidence indicates that radiation destroys the disease at its site and to a greater distance than the knife is capable of removing it; and furthermore, does this with but a slight tax on the patient, does not require expert surgical skill, and has no primary mortality.

A brief summary of the views of the leading radiotherapists working with surgeons and gynecologists is difficult to formulate, but I believe the following outline approximates the majority of technics:

(1) Thorough radiation of uterus and adnexa with radium, followed by massive X-ray doses to the pelvic tissues in all cases.

(2) In fundus carcinoma, thorough radiation followed by conservative surgery is the method of choice.

(3) In cervical carcinoma, thorough radiation in all cases. An increasingly large number of workers are depending on radiation alone for their cures; however, many competent men, after the production of an apparent clinical cure by radiation, employ conservative surgery.

UTERINE HEMORRHAGE

The treatment of uterine hemorrhage by radiation compares most favorably with surgery, with the added factor of no operative mortality, which averages about 4 per cent. in the most skilful surgical hands. Although the treatment of uterine fibroids by radiation is not a new method, it has steadily grown in popularity with the advent of modern technic, and the use of surgery is no longer justifiable in cases suitable for radiotherapy.

No cases have received proper treatment until the merits of radiotherapy have received careful consideration. However, in no field of medicine

is an accurate diagnosis more essential, and the need of co-operation between radiotherapist, surgeon and gynecologist greater than in this group of cases.

A large number of cases have been treated and the results have been invariably good in competent hands, such as Matas, Clark, Beclere, and others, and similar results can be expected with proper technic. The only argument against such treatment has been the possibility of subsequent malignant degeneration of the fibroid uterus, but the experience of years has not sustained this objection.

A prominent surgeon, Dr. Matas, has, over a period of four years, an operative decrease of over 60 per cent. in his fibroid cases, and is using radiotherapy in all cases of essential metrorrhagia, and fibroids suitable for treatment.

Radiotherapy is obviously contraindicated in ovarian cysts and pelvic infection, and favorable results cannot be expected in the old partly calcified sclerotic fibroids, and in the multiple subperitoneal and pediculated fibroids, but wherever hemorrhage exists with surgical contraindications, radiation should be used for its hemostatic action alone.

The action of radiotherapy in fibroids is probably mixed in part through direct action on cells of the tumor and indirectly through cessation of ovarian function. The menopause produced is gradual and the disturbances relatively mild as compared with the normal menopause.

It is probable that in the future the surgeon operating on a case of this type suitable for radiotherapy will have a difficult task justifying this action.

CARCINOMA OF THE BREAST

The treatment of carcinoma of the breast in the last twenty years has been rather a hopeless matter as judged by end results, except in very early cases. Fortunately the laity are consulting the surgeon earlier than in the past. The propaganda of education has produced some results, but can never do more than slightly increase the percentage of early cases seeking advice.

Even with the absence of axillary metastases, Halstead found 32 per cent. of deaths from metastases. These figures have led surgeons to seek some surgical adjunct. Radiotherapy is at present endeavoring to fill this need, and there is no group of cases where a combination of methods is so necessary. The majority of surgeons are now of the opinion that intensive radiation has materially improved their end results, many are advocating thorough radiation of both preoperative and postoperative cases, and no surgeon at present is justified in surgical procedures alone in carcinoma of the breast, and with the improvement in modern technic the end results will very probably be greatly improved, and perhaps the diagnosis of carcinoma of the breast not be equivalent to a death warrant in such a large number of cases.

EPIDERMOID CARCINOMA OF THE LIP AND MOUTH

Epithelioma of the lip offers favorable results, whether by surgery or by radium, more frequently than the majority of other forms of epidermoid

carcinoma. This is probably due in part to the fact that a lesion of the lip excites the patient and leads him to seek advice at an early stage of the disease. In early stages, treatment by radiation offers a most favorable prognosis. At later stages, with glandular metastases, the use of radiotherapy is most rational. With thorough radiation it is possible to reach metastases that are beyond the reach of the knife and seal off the lymphatic draining of the primary site.

In the treatment of buccal, lingual and pharyngeal carcinoma the results are sometimes brilliant and again most disappointing. Experience, however, warrants the consideration of radiotherapy in these lesions. It is often used alone, but by far the best results have been obtained when combined with thorough radiation of the lymphatics, and in selected cases electro-coagulation of the local lesion.

The advantages of electro-coagulation are the destruction of tissues without hemorrhage and the ease of controlling the depth of penetration of heat.

The advent of these combined methods of treatment of epidermoid carcinoma about the face and mouth has materially improved the prognosis, and the number of cases well, after the two-year period, is steadily on the increase. If the results were only as good as by surgery alone, the lack of mutilation, and the high primary mortality of radical operations, would logically give these methods preference.

LYMPHOID HYPERPLASIA

The use of radiation in enlarged thymus is a well-established form of therapy and the only available means of reducing this very serious condition.

The recent work of Witherbee on the X-ray treatment of diseased tonsils and intratonsillar lymph nodes seems to open a valuable field. The removal of diseased foci of infection in the mouth and throat has surgical limitations. Tonsillectomy cannot remove the bulk of diseased lymphoid tissues of the pharynx, which often serve as reservoirs of infection, no less dangerous than the tonsil. There is indication that the X-ray will prove of value in this field.

TUBERCULOUS ADENITIS

The treatment of tuberculous adenitis by radiotherapy is an established procedure. Cures are produced in over 90 per cent. of the cases, and the end results are superior to those of other methods. This method leaves no deformity and during treatment the patient's general condition is greatly improved. In most cases, after radiotherapy, the nodules disappear entirely. In a small percentage of cases they remain small and hard, the result of fibrous changes. Surgery is rarely indicated in tuberculous adenitis, but care should be taken that other foci of infection, such as teeth, tonsils, adenoids, are removed to secure the desired result.

LEUKEMIA

The use of radiotherapy in Hodgkins', the leukemias, and lymphosarcoma is well established and offers the best known method of treatment for

these conditions in the light of our present knowledge.

CATARACT

The treatment of incipient cataract by radium offers the most striking results of any method yet used to check and absorb the progress of lenticular opacities. In over 80 per cent. of cases there has been a marked improvement. Excellent results have also been obtained in vernal catarrh and trachoma.

HYPERTHYROIDISM

In hyperthyroidism the efficacy of radiotherapy is well established, but there is still a wide divergence of opinion as to the end results of both surgery and radiotherapy.

This divergence of opinion is probably due to the difficulty and frequent inaccuracy of diagnosis. The use of basal metabolism estimation seems to have placed the diagnosis of hyperthyroidism on a fairly sound basis, and is particularly valuable when used to control treatment. Naturally, colloid, cystic, and nodular goitres, and those causing marked pressure symptoms are not amenable to radiotherapy.

In a well-controlled group of cases the work of Means and Aub and others, comparing the end results of radiotherapy, surgery, and medicinal treatment of exophthalmic goitre can be taken as fairly indicative of the proper method of treatment in such cases. They conclude that the safest program for the treatment of exophthalmic goitre as a whole, is routine radiation of thyroid and thymus with surgery held in reserve for cases that do not respond.

The use of radiotherapy in goitre does not subject the patient to primary surgical mortality, there is a shorter rest period necessary, and the end results are usually better. These cases, then, should logically be given the benefit of this benign method of treatment before instituting any more radical form of therapy.

SKIN LESIONS

Radiotherapy in a wide variety of skin lesions has been used for many years. Much of the pioneer work in radiation was developed in this field. Radium is practically specific in the angiomata and vascular tumors. Its use in eczema, carbuncle, psoriasis, acne and the various parasitic skin infections is well established, and the results of great value. In the basal cell and squamous cell epitheliomas, before the involvement of cartilage and bone, the lesions are amenable to radiation, with higher percentage of cures, and a smaller percentage of recurrences than by any other method.

We may conclude, after a careful consideration of the merits of radiotherapy in suitable cases, that no clinician or surgeon should fail to properly inform himself of the usefulness of radiation and the advantages to be gained therefrom. Nor should the radiotherapist in an excess of enthusiasm be ultra radical and indiscriminately radiate cases that are only suitable for combined methods.

It is only by a closer co-operation between the clinician and radiotherapist that the ultimate goal of all medicine can be reached through successful correction of pathology amenable to radiation.

900 Hyde Street, San Francisco, Cal.

PROGRAM

of the 50th Annual Session Medical Society State of California Coronado May 10, 11, 12, 1921

COMMITTEE ON SCIENTIFIC PROGRAM

W. E. MUSGRAVE (as secretary of the society), Chairman

WALTER V. BREM, Los Angeles,
Secretary, 1921

LEMUEL P. ADAMS, Oakland,

FRANCIS M. POTTENGER, Monrovia,

FRED F. GUNDRUM, Sacramento,

* GENERAL SECTION

Chairman.

Secretary.

MEDICAL SECTION

SAMUEL H. HURWITZ, San Francisco,
Chairman

ROLAND CUMMINGS, Los
Angeles, Secretary

SURGICAL SECTION

WILLIAM A. CLARK, Oakland,
Chairman

CLARENCE G. TOLAND, Los Angeles,
Secretary

INDUSTRIAL MEDICINE

CHAS. A. DUKES, Oakland, Chairman

JOHN L. POMEROY, Los Angeles,
Secretary

EYE, EAR, NOSE AND THROAT SECTION

FRANK E. DETLING, Los Angeles,
Chairman

HARVARD McNAUGHT, San Francisco,
Secretary

GENITO-URINARY SECTION

GEO. G. REINLE, Oakland, Chairman

GEO. W. HARTMAN, San Francisco,
Secretary

GYNECOLOGY AND OBSTETRICS SECTION

FREDERIC M. LOOMIS, Oakland,
Chairman

THOMAS F. WIER, San Diego,
Secretary

NEUROLOGICAL SECTION

CHAS. L. ALLEN, Los Angeles,
Chairman

RICHARD W. HARVEY, San Francisco,
Secretary

* * PEDIATRIC SECTION

WILLIAM PALMER LUCAS, San
Francisco, Chairman

HUGH K. BERKELEY, Los Angeles,
Secretary

COMMITTEE ON ARRANGEMENTS

LYELL C. KINNEY, San Diego, Chairman

PAUL M. CARRINGTON, San Diego

PAUL WEGEFORTH, San Diego

* * Note—New section created by the council:

* General Section

This section will be a meeting where topics of interest to the profession at large can be discussed.

This part of the program will be held at a time when the various sections are not convened, so that every one may be given an opportunity to be present. There will be two sessions, and they will be held on the first day of the meeting. The morning session will commence at 9 o'clock and continue at 11 o'clock, when the President's address, which has always been a part of the Tuesday morning's program, will be given. Everything else heretofore appearing on the program of the first morning will be dispensed with.

The second session will be held in the afternoon from 2 to 5 o'clock.

State Medical Society

RULES GOVERNING READING OF PAPERS AND DISCUSSIONS AT STATE SOCIETY MEETING

The following rules, which have been adopted from time to time by the Committee on Scientific Program and which apply to the coming meeting of the State Society, are here reprinted for the benefit of those who will read papers and those participating in the discussions.

Rules for Authors

1. Time allotted for each paper is fifteen minutes. The only exception to this rule will be the latitude allowed visitors from other states who come as guests of the Society.

2. No motion from the floor to extend the time of the author will be considered by the chairman of any section.

3. Each author will be allowed five minutes for closing the discussion of his paper.

4. Each author must prepare an extra copy of his paper and present the same to the officer presiding over his section before he will be eligible to read his paper.

5. Absolutely no paper may be "read by title." By consulting the program appearing in this and in the May issue, as well as the special program issued at the state meeting, each author can learn definitely when his paper is due to be read.

6. Failure on the part of an author to appear and read his paper automatically precludes the acceptance of future papers by such author for a period of two years.

Rules for Those Taking Part in Discussions

1. Openers are limited to five minutes.

2. Subsequent speakers are limited to three minutes.

3. The privilege of a second three minutes will not be granted to any one.

4. Wherever the papers are sufficiently related, the discussions should be given at the close of each morning and afternoon session rather than following the reading of each paper.

Tuesday Morning

9 o'clock

GENERAL SECTION

1. CONDITIONS OF INDUSTRIAL ACCIDENT PRACTICE IN THE STATE OF CALIFORNIA.

THOMAS CHALMERS MYERS,

Los Angeles.

California law used as a model for other states. Frequently misrepresented as being satisfactory to the medical profession. Law misinterpreted and misconstrued. Initiatory agreement between the insurance companies and State Medical Society. Failure to safeguard rights of patients and doctors resulting in dissatisfaction. Methods of underwriters in selecting hospitals and surgeons. Industrial accident practice as a specialty.

Propriety of insurance doctors holding executive offices in the state and county societies. Employment of non-members. Tendency to depreciate common courtesy and medical ethics. Necessity of measures to protect the rights of the medical profession in the State of California.

2. SPEAKER FROM THE MAYO FOUNDATION.

3. APPLICATION OF THE PROTECTED QUARANTINE PACK IN ABDOMINAL SURGERY.

ROBERT C. COFFEY,

Portland, Ore.

1. By "protected quarantine pack" we mean the placing of a number of properly constructed wicks of gauze around an area which is to be quarantined from contact with other abdominal organs. The gauze wicks are protected from contact with the organs by sheets of rubber tissue.

2. The "protected quarantine pack" is used for the combined purpose of drainage and the separation of non-infected organs from an area of continuing sepsis.

3. The "protected quarantine pack" is used to prevent intestines from adhering or readhering to raw or infected surfaces.

4. ORGANIZED MEDICINE FOR THE MASSES, A FEATURE OF PRESENT DAY MEDICAL PRACTICE.

E. W. CLEARY,

San Francisco.

1. Medical practice is undergoing significant changes.

2. There is a tendency for the group to replace the individual doctor.

3. Group organization offers advantages to medical men.

4. Organized medicine offers better service to the layman.

5. The large employer finds advantages in medical organization.

6. Organization leads to a closer bond between research and practice, and broader teaching facilities.

7. Disadvantages in organization lie in disturbance of the established order, relative subordination of the individual and the raising of certain financial and ethical issues.

8. Specific instances of organization now operating show particular advantages, limitations and peculiar features.

9. An analysis of the ideal organization plan demonstrates the magnitude of its scope and contacts.

10. The problem of organization is the great present opportunity and responsibility of the medical profession.

5. PRESIDENT'S ADDRESS—11 o'clock A. M.

Tuesday Afternoon

2 to 5 P. M.

GENERAL SECTION

1. DIAGNOSTIC SIGNS OF DUCTLESS GLAND DISORDERS.

Lantern Slide Demonstration.

JOHN L. TIERNEY,

St. Louis.

2. SURGICAL RESULTS FROM THE ECONOMIC STANDPOINT.

GAYLE G. MOSELEY,

San Francisco.

Dealing with surgical results from the standpoint of time lost, and the importance of securing as good a functional result as possible with reference to the particular kind of work that the patient is supposed to do.

The importance of returning an injured man to industry at the earliest possible moment has not been sufficiently emphasized and that the early return of the injured person to industry is just as important in those cases seen in every day practice, as in the cases that are industrial. There is a great variation in the length of time required by different surgeons to get a result in injuries of approximately the same kind and severity.

3. RELATION OF MEDICINE TO PUBLIC HEALTH AND PUBLIC WELFARE.

PHILIP KING BROWN,

San Francisco.

"The health and physique of the people is the principal asset of the nation."—(Newman, chief medical officer of the British Ministry of Health, 1919.)

Preventive medicine is the basis of public health and public welfare and can only be developed by improving constantly the standard of medical practice.

Is the public better served by an extension of social medicine along the lines of health insurance or by state and municipal support of health centers where community group study of cases and all accessory means of examination may be had for small wage earners?

What the public most needs is not cheaper medicine but better medicine.

What the doctors need is more accessible and more easily utilized opportunities for improving their means of diagnosis and familiarity with modern medical methods.

Wednesday Morning

9 A. M. to 12 M.

MEDICAL SECTION

1. Chairman's Address—SOME ASPECTS OF PERNICIOUS ANEMIA AND ITS TREATMENT.

SAMUEL H. HURWITZ,

San Francisco.

2. BLOOD STUDIES IN ANEMIAS.

WM. PALMER LUCAS,

San Francisco.

The result of some of the work now being carried on, studying the blood first, from the old standpoint of morphology; second, from the standpoint of bio-chemistry, and third, from the physico-chemical standpoint of volume and rate of flow; fourth, from the standpoint of coagulation.

Discussion opened by Nelson W. Janney, Los Angeles.

3. EPIDEMIC ENCEPHALITIS.

HERBERT C. MOFFITT,

San Francisco

Classification of personal cases from a clinical pathological viewpoint with special reference to our present knowledge of cerebral localization.

The occurrence of unusual, chronic recurrent and fruste forms. Lantern slides of pathological changes. Conclusions as to etiology, prognosis and treatment.

Discussion opened by Milton B. Lennon, San Francisco.

4. THE INCIDENCE AND CLINICAL SIGNIFICANCE OF FLAGELLATE INFECTION IN CERTAIN CHRONIC DISEASES.

JOHN V. BARROW,

Los Angeles.

I. History and recent literature.

1. Discovery antedates that of the amoeba.
2. Opinion of present-day protozoan workers tends to place them in the same class.
3. Most text books are inaccurate, inadequate, and practically valueless in their consideration.
4. Résumé of authors and literature.

II. Present clinical consideration.

1. Comparatively small number of cases accurately reported and studied.
2. Toxaemia and not dysentery, the most characteristic symptom.
3. Difficulty and pitfalls in experimental work.
4. Clinical report of author's cases by groups:
 - (a) Reflex and recurrent gastro-intestinal group.
 - (b) Disturbed metabolism group (anaemia, arthritis).
 - (c) Neuro-toxic group (urticarial, epileptiform, melancholic symptoms.)
5. Organisms found and their incidence in routine office work.
6. Treatment and prognosis.

Discussion opened by W. E. Musgrave, San Francisco.

5. THE GREAT SECOND TYPE OF CHRONIC ARTHRITIS—FURTHER OBSERVATIONS.

LEONARD W. ELY,

San Francisco.

Recapitulation of previous work on the subject. Additional cases. Cause: This type of arthritis probably has but one exciting cause—infection in the alveolar processes of the jaws. Trauma is only effective as damaging an already distorted (deformed) joint. Pathology: The fundamental change appears to be an area of aseptic necrosis in the end of the bone near the cartilage. Treatment. Illustrated with lantern slides.

Discussion opened by Lovell Langstroth, San Francisco.

SURGICAL SECTION

1. CHRONIC DILATATION OF THE DUODENUM.

HARLAN SHOEMAKER,

Los Angeles.

History of case; type of operation and X-ray diagnosis.

Discussion opened by John F. Cowan, San Francisco.

2. TREATMENT OF GOITRE.

CARL L. HOAG,

Los Angeles.

- a. Present tendencies in treatment.
 - b. Necessity of clearly recognizing various types for rational treatment.
 - c. Classification into types from clinical and therapeutic standpoints.
 - d. The value of basal metabolic determinations in diagnosis and treatment.
 - e. Differential diagnosis of the various types and the treatment indicated in each.
 - f. Summary.
 - g. Lantern slides showing various types and important points in operative technic.
- Discussion opened by Clarence G. Toland, Los Angeles.

3. CHRONIC LESIONS OF THE LOWER LIP.

EDWIN I. BARTLETT,
San Francisco.

A consideration of the mortality and the reasons concerned therein; classification; differential diagnosis; treatment and conclusion.

Discussion opened by Howard Morrow, San Francisco.

4. A PRELIMINARY REPORT ON EXPERIMENTAL WORK IN OXYGEN TENSION DURING ANAESTHESIA.

MARY E. BOTSFORD and
DOROTHY WOOD,
San Francisco.

Findings of Medical Research Laboratory Air Service, Mineola, N. Y., that reduced oxygen produces definite circulatory responses.

Bearings on anaesthesia problems.
Influence of hemoglobin index on oxygen requirements.

Cyanosis not absolute guide—over compensatory mechanism supplying for oxygen lack without cyanosis.

Oxygen need modified by shock.
Possibility of definite regulation of oxygen percentage in nitrous oxide oxygen anaesthesia.

Conclusions from experimental work in Hooper Research Laboratory, University of California.

Discussion opened by Saxton T. Pope, San Francisco.

operation between surgeon and physiotherapeutic aid. Discussion of the several kinds of physiotherapy employed in Industrial Rehabilitation.

Discussion opened by L. I. Newman, San Francisco.

4. THE RESTORATION OF FUNCTION IN ACQUIRED HAND DEFORMITIES.

A. GOTTLIEB,
San Francisco.

Paper by A. Gottlieb and L. I. Newman. Frequency of hand deformities in industry and the attendant economic loss.

Early preventive physiotherapy after injury to guard against permanent diminution of normal function.

Physical remedies in fully developed cases to restore function to the maximum before discharge of the injured individual as permanently disabled.

Opinion of the physiotherapist regarding the necessity of his treatment before final rating.

Statistical data demonstrating the relative amounts of function in a series of cases, and the economic value to the insurance carrier. Lantern slides of several cases treated by physiotherapy.

Discussion opened by Mark L. Emerson, Oakland, Calif.

5. INSURANCE RATES A GUIDE TO HYGIENIC CONDITIONS SURROUNDING DIFFERENT OCCUPATIONS.

MILBANK JOHNSON,
Los Angeles.

Briefly, the subject matter of this paper will be insurance rates based upon actual experience as a guide to hygienic working conditions surrounding the different occupations and suggestions as to how these conditions may be benefited so as to reduce the natural hazard connected with the several occupations thereby prolonging the lives of our workers and reducing the vast amount of time unnecessarily lost by the workers through unhygienic occupational conditions.

Discussion opened by Henry Walter Gibbons, San Francisco.

6. CHRONIC ARTHRITIDES.

S. J. HUNKIN,
San Francisco.

A working classification which while it may not be based on strict pathological findings, at least facilitates thinking along more or less definite lines and favors discussion regarding clinical types.

Discusses different groups of the common arthritides with reference to possible or even probable etiological factors.

Treats of the causes of deformities appearing in the particular joints, which apparently bind together various types with possible different specific etiologies.

Dealing with the relation existing between the arthritides, and injuries.

The treatment of the arthritides as a whole and the special treatment indicated in various special joints.

Discussion opened by Maynard C. Harding, San Diego.

INDUSTRIAL MEDICINE SECTION

1. Address by Chairman—RECENT DEVELOPMENT IN INDUSTRIAL MEDICINE.

CHAS. A. DUKES,
Oakland, California.

2. RETURN TO WORK AFTER INJURY.

MORTON R. GIBBONS,
San Francisco.

Injured are not morally entitled to idleness.

On the other hand, every man has a right to work with whatever function remains to him and to receive pay for his efforts.

Work combined with treatment during recovery is necessary.

Facilities are required for making such work remunerative to the injured.

The parallel in war risk insurance and its lesson.

Need of propaganda to the end of establishing a public sentiment in this direction.

Discussion opened by Daniel Crosby, Oakland, Calif., and C. W. Decker, Los Angeles, Calif.

3. CLINICAL EXPERIENCE AS TO THE SEVERAL KINDS OF PHYSIOTHERAPY EMPLOYED IN RECONSTRUCTION WORK.

JAMES T. WATKINS,
San Francisco.

Antiquity of physiotherapy. Its widespread geographical distribution. Value as a therapeutic aid long recognized in Europe: Swedish gymnastics, Zanders, Kruckenbergs, Hertz. Disrepute in this country because employed by faddists, charlatans and persons of defective medical education. The influence of the war. Lessons from the enemy. Clinical evidence of therapeutic value in selected war wounds abundant and satisfying. Scientific investigations as to what actually happens yet to be undertaken. Dangers physiotherapy has to encounter. Necessity for intimate co-

EYE, EAR, NOSE AND THROAT SECTION

1. REMOVAL OF FOREIGN BODIES FROM THE ESOPHAGUS AND BRONCHI.

HARRINGTON B. GRAHAM,
San Francisco.

Discussion of problems occurring in various

cases undertaken since last report before the Society.

Discussion opened by George W. McCoy, Los Angeles.

2. **DIAGNOSIS AND TREATMENT OF CONDITIONS IN FOOD AND AIR PASSAGES, BY ENDOSCOPY AND SUSPENSION LARYNGOSCOPY.**

E. C. SEWALL,
San Francisco.

Report of a case of spontaneous perforation of the arch of the aorta by a chicken bone in the esophagus, with demonstration of specimen.

Carcinoma of the esophagus, some unusual cases, application of radium, results.

Removal in suspension of multiple Papillomata from the larynx. Use of radium in two cases.

Papillomata of cord and cicatricial webs removed in suspension.

Discussion opened by Johann A. Bacher, San Francisco.

3. **THE DIFFERENTIATION OF EARLY MENINGITIS AND MASTOIDITIS.**

WILLIAM J. MELLINGER,
Santa Barbara.

I. Introduction.

1. The association of meningitis as a complication of mastoiditis is frequent.
2. The presence of meningitis and mastoiditis at the same time and independent of each other is infrequent.

II. Etiology of the two conditions when occurring at the same time and independent of each other.

III. Symptomatology.

IV. Differential Diagnosis.

V. Illustrative Clinical Example.

A patient having meningitis and mastoiditis with absolutely different etiological factors, as proven by extensive laboratory, X-Ray and autopsy study.

Discussion opened by Hill Hastings, Los Angeles.

4. **PLASTIC SURGERY IN AND ABOUT THE EYELIDS.**

RAYMOND J. NUTTING,
Oakland.

1. Pedunculated flaps. Advantage over grafts in certain conditions.

2. Different types of grafts, method of preparation and cutting of same.

3. Open and closed dressings and after treatment.

4. Slides of cases before and after treatment, presented by Walter R. Parker, M. D., Prof. of Ophthalmology, University of Michigan.

Discussion opened by Kasper Pischel, San Francisco.

5. **MOTAIS OPERATION FOR PTOSIS.**

RODERIC O'CONNOR,
San Francisco.

Description of Operation.

Report of seven cases.

Discussion opened by Louis C. Deane, San Francisco.

UROLOGICAL SECTION

1. Chairman's Address—**THE SPECIALIST AND HIS OBLIGATIONS TO THE PROFESSION.**

GEORGE G. REINLE,
Oakland.

2. **STANDARDIZATION IN UROLOGY.**

HERBERT C. ROSENKRANZ,
Los Angeles.

The essentials of a standard system. Demonstration of a system of history taking. Specimen of standardization. Treatment of acute uncomplicated urethritis gonorrhoea in the male.

Discussion opened by Granville MacGowan, Los Angeles.

3. **STRICTURE OF THE FEMALE URETHRA.**

WILLIAM E. STEVENS,
San Francisco.

Frequency of a condition which is often overlooked. The importance of gonorrhoea as an etiological factor; site of the obstruction; marked symptoms often caused by their condition. Treatment.

Discussion opened by Robert V. Day, Los Angeles.

4. **MANIFESTATIONS OF LESIONS OF THE POSTERIOR URETHRA—ILLUSTRATED BY WAX MODELS.**

LOUIS C. JACOBS,
San Francisco.

Etiology; pathology; clinical course; treatment; case histories.

Discussion opened by William E. Stevens, San Francisco.

5. **RESULTS OF RADIUM THERAPY IN TUMORS OF PROSTATE AND BLADDER.**

R. L. RIGDON,
San Francisco.

General remarks. Type of tumor in which radium may be of service. Report of cases. Conclusions.

Discussion opened by E. Spence DePuy, Oakland.

GYNECOLOGY AND OBSTETRICS SECTION

1. Chairman's Address.

FREDERIC M. LOOMIS,
Oakland.

2. **UTERINE CANCER WITH A REPORT OF 300 CASES TREATED WITH RADIUM.**

REX DUNCAN,
Los Angeles.

Observations and results in the treatment of more than 300 cases of uterine cancer with radium during the past five years.

Illustrated with lantern slides.

3. **NOTES ON PRENATAL CARE.**

G. CARL H. McPHEETERS,
Fresno.

Inadequate prenatal care one of the causes for the reluctance of American women to bear children; preservation of the figure; prevention of striae; value of detailed attention in lessening maternal and fetal mortality and morbidity.

Illustrated with lantern slides.

4. **EXPERIMENTAL RESULTS OF MUMPS UPON THE REPRODUCTIVE ORGANS.**

LEWIS MICHELSON,
San Francisco.

Methods of inoculation. Bacteriology; pathology. Possibility of decrease in sterility with early operation.

Illustrated with lantern slides.

5. **TREATMENT OF THE INFECTED AND LACERATED CERVIX UTERI.**

A. V. PETTIT,
San Francisco.

Pathology and symptomatology. Methods of treatment. Indications for special type of treatment. Comparative study of results obtained in the Women's Clinic, Stanford University Medical School with special reference to relief of symptoms and future pregnancies. Description of operations. Illustrated with lantern slides.

NEUROLOGICAL SECTION

1. **Chairman's Address: THE PSYCHOPATHOLOGY OF SOMATIC DISEASE.**

CHAS. LEWIS ALLEN,
Los Angeles.

The human organism is a whole in which mental manifestations are correlated with physical processes, though as to their exact relations we know little or nothing. A voluminous literature is devoted to those cases in which the mental reactions are manifestly on the pathological side of a very broad and ill-defined boundary, the so-called insanities, but about the less-striking variations which occur in ordinary physical diseases, comparatively little has been written.

Some observations upon the minor pathological variations noted in the medical and surgical material of a large general hospital.

2. **POST-TRAUMATIC NEUROSES; THEIR MECHANISM.**

JOSEPH CATTON,
San Francisco.

A study of the so-called Post-traumatic Neuroses from the viewpoint of an examination of their basic mechanism. A weighing of psychogenesis and organic nervous disease as factors. A consideration of the light thrown on the mechanism by etiological factors, pathology and effect of various forms of handling.

Discussion opened by Howard C. Naffziger, San Francisco and Samuel D. Ingham, Los Angeles.

3. **HYPOTENSION ANXIETY NEUROSIS.**

WALTER F. SCHALLER,
San Francisco.

Routine blood pressure estimation in neurological cases has revealed a frequent association between low blood pressure and the anxiety states. Consideration of etiological factors with particular reference to dysendocrinism. Results of glandular treatment. Outline of future investigations.

Discussion opened by Joseph Catton, San Francisco.

4. **OBSERVATIONS ON CONSTITUTIONAL INADEQUATE PERSONALITY WITH SPECIAL REFERENCE TO ITS INFLUENCE ON BOTH DIAGNOSIS AND TREATMENT.**

J. ROSS MOORE,
Los Angeles.

1. Definition of the condition called "Constitutional Inadequate State."

(a) Mental.

(b) Moral.

(c) Physical.

2. A consideration of various symptoms which may be due to a constitutional state, and which, are therefore, ineradicable.

3. Citation of cases in which constitutional inadequacy appears.

4. Consideration of the therapy indicated in

cases where constitutional inadequacy is a pronounced factor.

Discussion opened by E. H. Williams, Los Angeles.

5. **THE IMPORTANCE OF THE VEGETATIVE SYSTEMS, NERVOUS AND ENDOCRINE, TO CLINICAL MEDICINE.**

F. M. POTTENGER,
Monrovia, Calif.

Symptoms, both subjective and objective, are due to disturbed physiologic function. Function depends upon chemical (endocrine) or nerve control. Symptoms depend on disturbed endocrine or nerve action. The disturbing impulse may be either physical or psychical in origin. The study of the patient and his physiological reactions, both normal and pathological, is one of the most urgent needs of present-day medicine. The relationship of neurology and psychiatry to general medicine.

Discussion opened by H. G. Brainerd, Los Angeles.

Wednesday Noon

12 M. to 2:30 P. M.

LEAGUE LUNCHEON

Given under the auspices of League for the Conservation of Public Health.

(Papers will be announced later.)

Wednesday Afternoon

2:30 to 5:30 P. M.

MEDICAL SECTION

1. **FURTHER STUDIES ON THE NATURE OF FEVER.**

WILLIAM D. SANSUM,
Santa Barbara.

Discussion opened by Franklin R. Nuzum, Santa Barbara.

Short review of the work presented in the enclosed reprint.

The production of fever in poikilothermic dogs by the intravenous administration of typhoid vaccine.

Typhoid vaccine was chosen because it simulates more closely than any other foreign protein the toxins of the usual fever-producing diseases.

2. **METABOLISM STUDIES IN PULMONARY TUBERCULOSIS.**

R. A. KOCHER,
San Diego.

Present status of feeding tuberculous patients. Aims, practice, results. Criticism of the method of indiscriminate high caloric feeding.

The present study is based on experiments with patients suffering from pulmonary tuberculosis, and in it is aimed:

1. To determine the minimum caloric requirements of T. B. patients, using basal metabolism estimations.

2. To determine the effect of various diets on respiratory rate.

3. To determine the effect of weight on respiratory rate.

4. To estimate the functional efficiency of the body by creatinine determinations.

5. Determination of the optimum diet.

Discussion opened by Nelson W. Janney, Los Angeles.

3. **THE TREATMENT OF TUBERCULOSIS WITH PARTIGENS (AFTER MUCH-DEYCKE).**

MAX ROTHSCHILD,
San Francisco

1. What are Partigens?
2. In what respects do they differ, regarding their effect, from the tuberculins which are on the market and in use today?
3. Scientific foundation for the justification of this method of treatment.
 - (a) Immunity in tuberculosis in general.
 - (b) Cellular and humoral immunity.
 - (c) Biological tests (in regard to the effect of partigens).
4. Demonstration of diapositives, showing cases treated with partigens.

Discussion opened by G. H. Evans, San Francisco.

4. PERSONAL EXPERIENCE WITH THE USE OF ARTIFICIAL PNEUMO-THORAX IN THE TREATMENT OF PULMONARY DISEASE.

ROBERT A. PEERS,
Colfax.

Reason for presenting this subject. Indications for treatment. Type of instrument used. Easy technic. Contra-indications and complications. Dosage. Case reports.

Discussion opened by Philip King Brown, San Francisco.

5. BIOLOGICAL FACTS ABOUT BENZYL-BENZOATE THERAPY.

L. A. EMGE,
San Francisco.

1. Brief review about the physiological and chemical facts reported up to date.
2. The action of benzyl-benzoate on the leukocyte and anti-infectious powers of the body based on personal experimental work in animals and on clinical observations.
3. Relation of benzyl-benzoate to allied chemical substance and the comparison between the effect on the blood picture in general.
4. Further biological experimental studies in regard to the fate of benzyl-benzoate in the body as judged from urine and blood chemistry.
5. Serological studies in regard to antibody formation as influenced by benzyl-benzoate.

Discussion opened by S. H. Hurwitz, San Francisco.

SURGICAL SECTION

1. SOME NOTES ON PLASTIC OPERATIONS.

LEO ELOESSER,
San Francisco.

The pedicled flap after the method of Esser. The semi-detached flap. The bridge flap. Tests for determining the viability of the flap. The gradual separation of flaps. The epithelial inlay, and a new operation for ektraption founded on it. A plastic for the cure of contractures of the fingers. Transplantation of Stenon's duct for the relief of drooling.

Stereopticon.

Discussion to be opened by E. F. Tholen, Los Angeles.

2. PROBLEMS IN PLASTIC SURGERY.

GEORGE W. PIERCE,
San Francisco.

Abstract: Consideration of the problems of plastic surgery in the light of advances made during the recent war. Reports of illustrative cases observed and operated upon by the author with Major H. D. Gillies at Queen's Hospital, Sidcup, England.

Illustrated with lantern slides.

Discussion to be opened by Harold Brunn, San Francisco.

3. EXTRAPLEURAL THOROPLASTY IN PULMONARY TUBERCULOSIS WITH REPORT OF A CASE.

HERBERT A. JOHNSTON,
Anaheim, Calif.

Short history of operation and its relation to artificial pneumothorax. Type of case in which it is indicated. Hope offered by extrapleural rib resection to a class of tuberculous patients otherwise doomed. Report of case which is apparently recovering as a result of operation by the method of Wilms.

Illustrated with lantern slides.

Discussion to be opened by George B. Kalb, Monrovia, Calif.

4. CONGENITAL PYLORIC STENOSIS.

ALANSON WEEKS,
San Francisco.

Is this condition being overlooked among the babies of California?

The diagnosis as a rule is simple.

Treatment: When to use thickened foods. When to operate.

Discussion to be opened by R. Langley Porter, San Francisco.

INDUSTRIAL MEDICINE SECTION

1. THE DEVELOPMENT OF A MODERN MEDICAL SERVICE FOR THE INDUSTRIAL INJURED AND SICK AT THE HAHNEMANN HOSPITAL OF THE UNIVERSITY OF CALIFORNIA.

EDGAR L. GILCREEST,

Hahnemann Hospital, San Francisco.

The problem of the care of the industrial injured involves the correlation of the activities of various hospital departments.

Physio-therapeutic Department—Emphasis is laid upon the operation of trained attendants rather than upon the use of elaborate machine.

Occupational Therapeutic Department—Covers the function of bedside occupation and light occupation for the average convalescent; provides wholesome reading matter for the patient.

Curative Workshop—Where the convalescent is taught how to construct and make many articles which he thought himself incapable of doing.

Social Service Department—The general welfare of the sick man is looked after. Rooms are secured for him nearby when he is well enough to live outside.

Difficult conference cases receive prompt attention by the staff of specialists.

An "esprit de corps" is developed in the Hospital which satisfies the patient and which they appreciate as is manifested by their frequent visits after their discharge.

Discussion opened by R. Seldon Anthony, El Segundo, Calif.

2. OCCUPATIONAL DISEASES OF THE SKIN AND HANDS IN CALIFORNIA INDUSTRY.

R. T. LEGGE,
Berkeley, Calif.

"Packer's Itch," straw used and packing. Mode and cause of the dermatitis.

Identification of the Mite.

Prevention, method and treatment.

Peculiar infections of the hand found in the Dry Fig Industry.

Deep cellular involvement of the fingers.

Probable cause and treatment.

Discussion opened by Harry Alderson, San Francisco.

3. THE SERVICE OF NEURO-PSYCHIATRY TO INDUSTRIAL MEDICINE.

HAROLD W. WRIGHT,
San Francisco.

Analysis of causes of labor turnover. Economic and personal consequences. Mental causes of inefficiency, remediable and otherwise. Psycho-neurosis due to causes within and without the plant which might be remedied by adjustment of the individual. Services to be rendered by the neuro-psychiatrist. The detection of the unfit for any or some particular employment. The early detection of mental defect, psychoses and neurosyphilis. Psychotherapy of the disgruntled and agitators. Proper placement of those of special abilities or special handicaps. The bringing about of better understanding between foremen and subordinates in peculiar cases. Early attention and treatment of traumatic neurosis before it becomes fixed and incurable. Comparison of results of treatment of war neurosis and the handling of neurosis of industrial life. The general neglect of the mental factors and the psychosociological factors in industrial medicine unwarranted and to be deplored.

Discussion opened by Clifford W. Mack, Livermore, Calif.

4. FRACTURES OF THE FEMUR.

C. E. EARLY,
Los Angeles.

Special attention to the treatment of fractures of the femur, as referable to industrial injuries, making a plea for a more standardized form of treatment.

Marked economic loss incurred by a fracture of the femur.

Treatment of fractures of the femur by traction, and suspension in the Thomas Splint. Fractures adequately treated by the Thomas Splint and those in which it is necessary to use plaster of Paris or some other form of splint in which more adequate abduction can be maintained.

Classification of fractures of the femur and fractures occurring in and about the trochanters, those occurring in the shaft proper, and those occurring in the condylar region.

Short résumé of the recent literature upon new methods of treatment.

5. SOCIAL WELFARE PROGRAM, INCLUDING HOUSING FOR FIELD EMPLOYEES.

CHARLES BENNETT,
Los Angeles.

Discussion opened by Alvin Powell, Oakland, Calif.

Housing a basic need. Physical setting for decent family life tends to physical and moral uplift. The San Dimas standard house; sanitary, fire proof, vermin proof, rat proof, comfortable. Plan meets in economic manner essentials of social needs, sex separation, family and individual privacy, indoor conveniences. Colony of detached houses facilitates sanitary and police supervision. Operation of health center.

Discussion opened by George Rothganger and W. L. Bell, Oakland, Calif.

6. PHYSIOTHERAPY EXHIBIT.

An interesting exhibit of Physiotherapy apparatus is also being prepared with the approval of the office of the Surgeon General of the United States Army.

This exhibit is under the supervision of Major Roy E. Fox, M. C., U. S. A., of the Letterman Hospital, San Francisco.

EYE, EAR, NOSE AND THROAT SECTION

1. THE FUNCTIONS OF THE OTOLITHS OF THE VERTEBRATE EAR.

S. S. MAXWELL,
Berkeley, Calif.

In the solution of a physiological problem the choice of a suitable animal for experiment is a matter of prime importance. Much of the work of the labyrinth has been done on animals in which the separation of the action of ampullae and otoliths is not possible. For this reason the entire subject is confused by the more or less general acceptance of a priori assumptions concerning differences of function of canals and otoliths.

The ears of fishes, especially Selachians, present the most favorable objects for study. A good beginning was made on this by Loeb, but the subject has been clouded rather than elucidated by most of the later workers.

A technique has been developed by the writer which has made possible the removal of either set of structures from the labyrinth with retention of function by the others. The experiments show that the old assumption of a division of functions between ampullae and otoliths so that the former are dynamic and the latter static organs is not supported by the facts. The experiments show in addition that the otolith of the utriculus is capable of performing all the static and all the dynamic functions except that of response to rotation in a horizontal plane. The significance of the planes in which the otoliths lie and the differentiation of function reported by Kubo under Kreidl's auspices was the results of poor technique and unscientific methods.

A protest is made against the current form of speech which refers all equilibrium functions of the labyrinth to the "semicircular canals." The canals have probably no equilibrium functions; the ampullae share these functions with the otoliths.

2. ATYPICAL COMPLICATIONS IN A CASE OF MIDDLE EAR INFECTION. PRESENTATION OF PATIENT.

ISAAC H. JONES,
Los Angeles.

Abstract of Paper: Mild middle ear involvement; violent internal ear symptoms; large postauricular abscess. Caloric test entirely negative, yet turning test demonstrated that there was no destruction of internal ear.

3. KERATOSIS OF THE CONJUNCTIVA.

HUGO A. KIEFER,
Los Angeles.

1. A Synopsis of the Literature.
2. Symptoms and Complications.
3. Pathology.
4. Treatment.

Discussion opened by W. H. Dudley, Los Angeles.

4. TUBERCULOUS LARYNGITIS; ITS EARLY DIAGNOSIS.

C. B. WOOD,
Los Angeles.

UROLOGICAL SECTION

1. EXPERIENCES WITH SILVER-SALVARSAN.

VICTOR G. VECKI,
MILLARD OTTINGER,
San Francisco.

Report of various cases of syphilis treated with intravenous injections of Silver-Salvarsan; results showing remarkable influence upon stubborn manifestations and the Wassermann reaction.

Discussion opened by William E. Stevens, San Francisco.

2. PROTEIN SHOCK REACTION IN EPIDIDYMITIS.

W. P. WILLARD,
San Francisco.

Proteins used. Typhoid vaccine most effective and easily obtained. Dose and symptoms resulting from its use. The rapid subsidence of pain and swelling in the epididymis. Comparison with other forms of treatment. Report of cases.

3. PYURIA (NUMERICAL).

LEON J. ROTH,
Los Angeles.

Some fallacies in routine urinalysis. Theory of standardizing pus cell count as an aid in diagnosis and prognosis. Lack of accuracy in usual method. Technic of count. Variation of specific gravity. Control of amount of gross specimen and of polyuria.

Discussion opened by George W. Hartman, San Francisco.

4. NEPHRECTOMY IN HUNCHBACKS; WITH REPORT OF TWO CASES.

CHAS. D. LOCKWOOD,
Pasadena.

Difficulties attending operations in this class of patients. The ordinary technique is impossible. Grave difficulties attend abdominal route, owing to the deepening of the antero-posterior diameter of the abdominal cavity and the shortening of the longitudinal diameter.

Technique: Rectus incision through the lateral abdominal wall. Powerful retraction of the ribs by broad retractors. Ligation of ureter. Dislocation of kidney inward toward the median line. Clamping of the renal vessels. Difficulties of ligation. Retroperitoneal drainage.

Case I. Tuberculosis of the left kidney in an adult with healed Potts disease.

Case II. Papilloma of the kidney pelvis in a man of 79, with profuse hemorrhage. Congenital deformity of the spinal column.

Discussion opened by A. B. Cecil, Los Angeles.

GYNECOLOGY AND OBSTETRICS SECTION

1. RESULTS OBTAINED WITH VARIOUS OPERATIONS FOR PROLAPSE OF THE UTERUS.

ALFRED B. SPALDING,
San Francisco.

A study has been made of 92 clinic patients operated on by the Staff of the Division of Obstetrics and Gynecology in

the Women's Clinic of the Stanford University School of Medicine.

The following operative procedures will be reported in detail:

- Goff operation.
- Jellett operation.
- Spalding operation.

The mortality, morbidity and mechanical cure with late results on ultimate relief will be included in the paper.

Illustrated with lantern slides.

2. HYSTERECTOMY (Motion Picture).

OLGA McNEILE,
Los Angeles.

- 1. Anesthetization.
- 2. Preparation of field of operation.
- 3. Actual operation.
- 4. Dressing of incision.

Discussion opened by

3. THE RATIONALE OF RADIATION IN THE FEMALE PELVIS.

ALBERT SOILAND,
Los Angeles.

Present day conception of female pelvic conditions which are amenable to X-Ray and radium treatment; the debatable question of surgery in certain malignant conditions, and the limitations of radiation in such; experience in treating non-malignant conditions over a period of years; observations of the results of others; typical cases.

PEDIATRIC SECTION

1. Chairman's Address.

WM. PALMER LUCAS,
San Francisco.

2. DIARRHOEA IN INFANTS IN RELATION TO CERTAIN FOOD INTOLERANCES.

H. H. YERINGTON,
San Francisco.

Dealing with disturbances due to the feeding of fats, proteids and carbohydrates in excess, going into etiology and pathology. A discussion of the different foods as causes of diarrhoea and wasting. A description of the stools, showing their importance in the diagnosis and a general discourse on practical treatment.

Discussion opened by E. C. Fleischner, San Francisco.

3. TUBERCULOSIS OF EARLY INFANCY.

RACHEL L. ASH,
San Francisco.

Frequency of infantile tuberculosis and Etiology of first infection in the very young. Pathological anatomy; clinical types; diagnosis; prognosis.

Report of a case of tuberculosis in an infant which began at about the third month, ran a chronic course and presented unusual difficulties in diagnosis.

Illustrated with lantern slides.

Discussion opened by Robert A. Peers, Colfax.

4. INFANTILE ATROPHY — SPECIAL REFERENCE TO FEEDING.

JOSEPH ROBINSON,
Anaheim.

The use and value of (1) malt soup; (2) albumin milk; (3) albumin milk and corn syrup.

Discussion opened by R. G. Sharpe, San Diego.

5. **THE DIAGNOSIS AND SURGICAL TREATMENT OF INTRACRANIAL HEMORRHAGE OF THE NEWBORN; REPORT OF ONE CASE.**

EDWARD B. TOWNE,
San Francisco.

Brief review of literature on diagnosis, pathology and treatment (McNutt, Cushing, Warwick, Holland, Rodda, etc.).

Case: Seven day baby with tense fontanelle, convulsions, bilateral spasticity; old blood in spinal fluid and ventricular fluid; left hemiparesis. Removal of extensive subdural clot from over right cerebral hemisphere; identification of a ruptured venous tributary of longitudinal sinus as cause of hemorrhage. Negative exploration of left hemisphere at later date. Technical difficulties of the operation. Condition nine months later.

Illustrated with lantern slides.

Thursday Morning

9 A. M. to 12 M.

MEDICAL SECTION

1. **NORMAL VARIATIONS IN BASAL METABOLISM.**

ALBERT H. ROWE,
Oakland.

1. Effect of Menstruation. Necessity of taking this into account in metabolic studies.
2. Effect of mental activity.
3. Normal metabolic curve of men.

Discussion opened by Lovell Langstroth, San Francisco.

2. **A DIAGNOSIS OF HYPOTHYROIDISM.**

NELSON W. JANNEY,
Los Angeles.

Cretinism and myxoedema are among the most easily recognized of medical conditions but are met with quite infrequently in their typical expressions. Latent cases of hypothyroidism in children and adults may be extremely difficult to detect. This paper, therefore, includes a critical survey of the laboratory and clinical methods used in making such a diagnosis. A number of cases of masked hypothyroidism of the type of Hertoghe can only be certainly recognized with modern laboratory aids to diagnosis including the basal metabolism.

Discussion opened by

3. **THE VALUE OF BASAL METABOLISM ESTIMATIONS IN CASES WITH LOWERED METABOLISM.**

ROBERT B. HILL,
Los Angeles.

The study is based on an analysis of the findings in about sixty cases. Observations of the basal metabolism were made both before and after the administration of thyroid extract.

Discussion opened by Roland Cummings, Los Angeles.

4. **HYPOPITUITARISM AND ITS TREATMENT.**

HANS LISSER,
San Francisco.

Description of various types of hypopituitarism, preadolescent and postadolescent of anterior and posterior lobes, such as Lorain-Levi type, Neurath-Cushing type and Froelich type; reference to Engelbach's classification; treatment with gland extracts. Illustrated by case histories and lantern slide pictures.

Discussion opened by Herbert C. Moffitt, San Francisco.

5. **DERMATOSES IN EXOPHTHALMIC GOITRE.**

F. F. GUNDRUM,
Sacramento.

Skin conditions occurring with goitre may be:

1. Concurrent.
2. Indirectly associated as the effect of some disturbance created by goitre.
3. Immediately dependent upon the goitrous condition.

Report of two skin rash cases, unusual, cured by partial thyroidectomy.

Discussion opened by D. E. Schoff, Sacramento.

SURGICAL SECTION

1. **CHRONIC TROCHANTERIC BURSTITIS.**

JOSEPH K SWINDT,
Pomona, Calif.

Trochanteric bursitis, a relatively rare and commonly overlooked hip lesion.

Anatomy of bursae; description of those about the hip joint.

Morbidity of bursae in general; relative incidence in the more important ones.

Etiology of trochanteric bursitis, especially as to the relation of traumatism and metastatic infection.

Pathologic anatomy, especially in regard to burrowing proclivity of inflamed or traumatized bursae; fusion with neighboring bursae; method of and tendency toward regeneration of the hygroma.

Symptoms of trochanteric bursitis; differential diagnosis from bursitides in associated bursae, coxitis and osteomyelitis.

Treatment, causes of failure; total ablation of the hygroma alone effective.

Case report, including description of incision, designed to preserve the integrity of muscles and tendons while affording access to all bursae about the trochanter major.

Discussion to be opened by John C. Wilson, Los Angeles, Calif.

2. **SOME OBSERVATIONS IN CASES OF FRACTURED SKULLS, SEEN IN SAN FRANCISCO EMERGENCY HOSPITALS.**

EDMUND BUTLER,
San Francisco.

1. Number of Cases.
2. Relation to Industry.
3. Relation to Alcohol.
4. Suggestions as to Examination; Interpretation of Findings and Treatment.

Discussion to be opened by Thomas G. Inman, San Francisco.

3. **TRAUMA IN THE ETIOLOGY OF SARCOMA.**

EMMET RIXFORD,
San Francisco.

No definite evidence that trauma is a cause of sarcoma. Percentage of suggested cases small. Report of case of sarcoma of femur following spiral fracture wired in open operation.

Discussion to be opened by Chas. LeRoy Lowman, Los Angeles.

4. **FRACTURES OF THE PELVIS.**

HAROLD BRUNN AND
LIONEL D. PRINCE,
San Francisco.

1. Types and mechanics of pelvic fractures.
2. Symptomatology and diagnosis (exclusive of fracture producing visceral lesions).
3. Discussion of statistics compiled from

cases in the files of the California Industrial Commission and other sources.

4. Disabilities resulting from fracture of the pelvis. Their frequency, duration, symptoms usually associated.
5. Causes which produce disabilities, such as improper treatment, overlooked diagnosis, etc.
6. End results from the treatment of disabilities.
7. Discussion of the prevalent method of treating pelvis fractures.
8. Advantage of the sling method with or without traction. Simplicity, adaptability, comfort. Ease of nursing. Future disability minimized.
9. Case reports.
10. Conclusions.

Demonstration of lantern slides and X-ray plates.

Discussion to be opened by W. H. Winterberg, San Francisco.

5. FRACTURE OF THE PATELLA WITH EXPERIMENTAL STUDY.

JOHN F. COWAN,
San Francisco.

Essential points discussed.

- a. Structure of the patella.
- b. Study of repair following fracture.
- c. Causes of refracture.

Illustrated with lantern slides.

Discussion to be opened by Harlan Shoemaker, Los Angeles.

EYE, EAR, NOSE AND THROAT SECTION

Discussions will be given at the close of each morning and afternoon session rather than following the reading of each paper.

1. DIFFERENT OPERATIVE PROCEDURES IN STRABISMUS—COMPARATIVE RESULTS.

W. S. FRANKLIN,
F. C. CORDES,
W. D. HORNER,
San Francisco.

Fifty cases analyzed. Use of Resection, Tucking and Muscle Clamps. Results variable.

Discussion opened by Lloyd Mills, Los Angeles.

2. AN ANATOMICAL STUDY OF EIGHT CASES OF DEGENERATION OF THE CORNEA.

C. A. MAGHY,
San Diego.

1. The refractile bodies seen under the oil immersion lens, their staining characteristics and physical properties.

2. Their position in relation to the various structures of the cornea.

3. The nature of the degeneration itself with the pathological conditions under which they are encountered.

Discussion opened by Hans Barkan, San Francisco.

3. SOME MANIFESTATIONS OF LUES IN THE NOSE.

GEORGE McCLURE,
Oakland.

Lues as it is ordinarily seen in the Nose. Some unusual cases. Differential diagnosis between these Luetic conditions and Sinus infection.

Discussion opened by A. B. Wessels, San Diego.

4. ACUTE LYMPHATIC LEUKEMIA WITH SPECIAL REFERENCE TO THROAT CON-

DITIONS—REPORT OF A CASE.

H. D. NEWKIRK,
Anaheim, Calif.

Definition. Reported Cases. Etiology. Symptoms. Diagnosis.

Prognosis and Treatment.

Report of case emphasizing (1) necessity for laboratory work and (2) thorough examination before diagnosis is made in apparently simple cases.

Discussion opened by Simon Jesberg, Los Angeles.

UROLOGICAL SECTION

1. PERINEAL PROSTATECTOMY WITH REFERENCE PARTICULARLY TO MODIFICATION OF YOUNG'S METHOD OF ENUCLEATION WHEREBY THE GLAND CAN BE REMOVED COMPLETELY AS IN SUPRAPUBIC OPERATION.

FRANK HINMAN,
San Francisco.

Review of cases with exhibition of lantern slides and drawings and demonstration.

Discussion opened by Granville MacGowan and A. B. Cecil.

2. TYPES OF CASES SHOWING CURIOUS DEFORMITIES ALONG THE URINARY TRACT—ILLUSTRATED BY LANTERN SLIDES.

MARTIN MOLONY,
San Francisco.

I. Two types of vesical diverticula.

- (a) (True) congenital diverticulum.
- (b) (False) acquired diverticulum.

(c) A case of congenital diverticulum showing the pathology of how a diverticulum can destroy both kidneys.

II. A case of congenital deformity of both kidneys and bladder in the same patient complicated with hydronephrosis of both ureters and atony of both ureters.

III. A type of stricture of the ureter with calculus hydronephrosis complicated with bilharzia infection, resulting papilloma of the ureters.

(a) Key picture of the above showing author's method of treating stricture of the ureter and the results four years later.

IV. Congenital diverticulum of the posterior urethra, large enough to take a No. 26 F urethroscope giving a clear view into the wide open seminal vesicles; showing the interior trabeculation and a polypoid growth.

Note: These types of cases which include well marked deformities of the kidneys; the ureters; the bladder, and the urethra were demonstrated during life. These cases bring out the value of pathology in the living in contrast to that of the dead.

Discussion opened by R. L. Rigdon, San Francisco.

3. THE USE OF THE D'ARSONVAL METHOD OF COAGULATION NECROSIS FOR THE REMOVAL OF IMMENSE INTRAVESICAL OUTGROWTHS OF THE PROSTATE, SIMPLE OR MALIGNANT.

GRANVILLE MacGOWAN,
Los Angeles.

There is a certain type of tumor of the prostate in which the growth is mainly intravesical, and may occupy a very large part or the entire vesical cavity. These tumors are commonly very difficult to enucleate. The dangers attending enucleation are great on account of the numerous vascular sinuses which course over the mucosa

and which ramify through the tumor portion, leading to extreme hemorrhage in these cases.

The difficulties of stilling these hemorrhages by the ordinary methods of pressure, through packs, Hagner bags, or by stitches introduced into the bladder neck. The advantages of having the blood vessels' supply largely cut off by coagulation necrosis before enucleation is attempted. The applicability and advantage of such treatment in case of malignancy, suspected or certain, of these growths.

Report of two interesting cases.
Discussion opened by Robt. V. Day, Los Angeles.

4. **100 CONSECUTIVE PERINEAL PROSTATECTOMIES; ILLUSTRATED BY MOTION PICTURES.**

A. B. CECIL,
Los Angeles.

Discussion of types of prostatectomies. Introduction of Young's perineal prostatectomy. Difference in technique between Young's perineal prostatectomy and median perineal prostatectomy. Critical review of 100 cases, with special reference to operability rate and mortality rate.

Discussion opened by Frank Hinman, San Francisco.

GYNECOLOGY AND OBSTETRICS SECTION

1. **PRECANCEROUS LESIONS IN THE UTERUS.**

WM. G. MOORE,
San Francisco.

The unsatisfactory results of any type of treatment of well-defined carcinoma of the uterus emphasizes the need of the early recognition and treatment of all conditions which would appear to favor the development of cancers of the cervix or uterine wall.

Many interesting specimens of early epithelial proliferations have been found in the routine microscopic examination of all tissues removed at operations in the Gynecologic clinic of the University of California Medical School. A series of these sections will be thrown upon the screen and will be accompanied by a discussion of the individual cases as bearing upon the doctrine of the precancerous lesion.

2. **THE SIGNIFICANCE OF THE PASSAGE OF MECONIUM INTRAPARTUM.**

MARGARET SCHULZE,
San Francisco.

Historical.
Percentage of cases where meconium passed intrapartum in a series of 3600 cases.

| | | |
|------------------|---|---|
| Foetal Mortality | $\left\{ \begin{array}{l} \text{where meconium passed before} \\ \text{where meconium passed after} \end{array} \right\}$ | $\left\{ \begin{array}{l} \text{rupture of} \\ \text{membranes} \end{array} \right\}$ |
| Foetal Asphyxia | | |

Foetal mortality without demonstration of meconium.

| | |
|--|---|
| Consideration of causes— | |
| $\left\{ \begin{array}{l} \text{Age and parity of mother} \\ \text{Physical condition of mother} \end{array} \right\}$ | $\left\{ \begin{array}{l} \text{Syphilis} \\ \text{Toxemia} \\ \text{Fevers} \end{array} \right\}$ |
| | $\left\{ \begin{array}{l} \text{Cathartics} \\ \text{Quinin} \\ \text{Anaesthetics} \end{array} \right\}$ |

Maturity of child
Type of labor
Evaluation of the sign.

3. **OVARIAN AUTOTRANSPLANTATION.**

F. R. GIRARD,
San Francisco.

1. Indications for operation.
2. Technique of operation.
3. Autotransplantation with Hysterectomy.
4. Autotransplantation without Hysterectomy.
5. Effect on ablation symptoms.
6. Conclusions.
7. Bibliography.

4. **VULVO-VAGINITIS: A NEW ETIOLOGICAL FACTOR; ITS TREATMENT.**

JOHN C. IRWIN,
Los Angeles.

First a consideration of the literature and present knowledge of the established etiology bacteriological, chemical, metabolic, etc. Second: Cases not in preceding category and associated with presence in discharge of trichomonas hominis chilomastix, giardia amoeba; or the presence of latter in bladder or rectum. Periodicity, pathogenesis, recognition and treatment.

NEUROLOGICAL SECTION

1. **FURTHER OBSERVATIONS ON EPILEPSY.**

MILTON B. LENNON,
San Francisco.

Factors in etiology of the symptom-complex of epilepsy; the relation between the number of fits and mental defect; the necessity of proper optimism on the part of the physician who treats epilepsy.

Discussion opened by Richard W. Harvey, San Francisco.

2. **COMBINED SYSTEM DISEASE (A CLINICAL AND PATHOLOGICAL STUDY OF FUNICULAR MYELITIS WITH A REPORT OF FIVE CASES WITH AUTOPSIES).**

G. Y. RUSK,
RICHARD W. HARVEY,
E. S. Du BRAY,
San Francisco.

- I. The historical growth of our knowledge of the subject.
- II. Etiological consideration, with a brief discussion of the role played by the various noxae and associated conditions.
- III. Pathogenesis with special reference to the neuropathology.
- IV. Case reports with autopsy protocols.
- V. The clinical picture with a discussion of the three chief types.
- VI. Differential diagnosis.
- VII. Summary with a plea for a wider recognition of this disease.

Illustrated by slides, charts, photographs and pathological material.

Discussion opened by W. F. Schaller, San Francisco.

3. **MENINGITIC EPILEPSY, DIAGNOSIS AND RADICAL CURE.**

Dealing with the purpose of, and the lesions at the base of the convulsive reaction: relation of meningitis to epilepsy. "Dissecting the fit" into opisthotonus, clonus, tremor, etc. Consideration of drug and operative therapy.

CECIL E. REYNOLDS,
Los Angeles.

4. **NEUROLOGICAL SYMPTOMS IN ONE THOUSAND GROUP STUDY CASES.**

THOMAS G. INMAN,
San Francisco.

Differences between "Group Study" and

"Group Practice" defined. Types of cases examined. Neurological symptoms in the light of the complete examination. The question of multiple factors in the causation of neurological symptoms. Disturbances in function of the nervous system as first evidences of somatic pathology.

Discussion opened by J. Marion Read, San Francisco.

5. **TICS AND THEIR TREATMENT.**

THOMAS C. LITTLE,
San Diego.

Brief historical résumé, etiological foundation, the intelligence and general mental condition of the subject, course with its variations, final termination based upon the subject's constitutional state.

Discussion opened by Walter F. Schaller.

Thursday Afternoon
2 o'clock

MEDICAL SECTION

1. **PRETAXIC GASTRIC CRISIS.**

E. C. FISHBAUGH,
Los Angeles.

1. Short review of literature.
2. Report of cases.
3. Summary of clinical and laboratory findings.
4. Conclusion.

Discussion opened by Walter W. Boardman, San Francisco.

2. **DETERMINATION OF THE AMOUNT OF SECRETING TISSUE IN THE KIDNEY BY OBSERVATION OF ITS FUNCTION.**

T. ADDIS,
San Francisco.

1. Present methods are qualitative, not quantitative.
2. Importance of strain if total functional capacity is to be measured or any deductions as to quantity of tissue drawn.
3. Method: Determinations of urea content of blood and urine after administration of urea.
4. Experimental and clinical evidence.

Illustrated with lantern slides.

Discussion opened by Walter C. Alvarez, San Francisco.

3. **ETIOLOGY OF NEPHRITIS.**

GEORGE E. EBRIGHT,
San Francisco.

Influence of previous infections. Diseases of the upper respiratory tract. Comparison of the causes of acute and chronic nephritis. Aspect of nephritis as a general condition rather than primarily a disease of the kidneys. Picture of acute nephritis without urinary findings. Metabolic considerations.

Discussion opened by Dudley Fulton, Los Angeles.

4. **CLINICAL USEFULNESS OF THE ORTHO-CARDIOGRAPH—A SIMPLE TECHNIC DEMONSTRATED.**

HARRY SPIRO,
San Francisco.

1. In order to help make our laboratory findings agree with our clinical findings a simple method of producing ortho-cardiograms is offered.
2. The difficulty of visualizing a radiograph of your patient's chest while you are determining the cardiac outline is obviated by marking an ortho-cardiogram directly on your patient's skin, and then taking a permanent record from that. This record to be used as a pattern for

future examinations and so enclosed with the history sheets.

3. It is maintained that once you correct your percussion outline by a suitable ortho-cardiogram you will in the future unconsciously eliminate all adventitious sounds and thus nearly always percuss the proper outline of your patient's heart.
4. An addition to our other standards of measurements is suggested in a "Family Type," as one heart may be normal as compared to standards for weight, etc., but distinctly out of contour or size as compared to other members of one's family.
5. The apparent advantage of the ortho-cardiogram over other methods of X-ray examinations are briefly discussed.
6. Ortho-cardiograms, X-ray prints, etc., are shown.

Discussion opened by Alfred C. Reed, San Francisco.

5. **FLUOROSCOPIC STUDIES OF THE HUMAN HEART, WITH SPECIAL REFERENCE TO IRREGULARITIES AND THEIR MECHANISM.**

W. J. KERR and H. E. RUGGLES,
San Francisco.

Normal contractions; various types of irregularities, extra systoles, heart block and alternation of the pulse; illustrated with moving pictures.

Discussion opened by Dudley Fulton, Los Angeles.

SURGICAL SECTION

1. **PERIPHERAL NERVE SURGERY.**

CHARLES L. TRANTER,
San Francisco.

The war experience has shown that direct end-to-end sutures are usually possible, and that two-stage operations are preferable to the use of grafts. The late results of the war cases.

Discussion to be opened by C. W. Rand, Los Angeles, and Samuel D. Ingham.

2. **TIC DOULOUREUX.**

HOWARD C. NAFFZIGER,
San Francisco.

The selection of cases suitable for

- a. Neurectomies.
- b. Injections.
- c. The Gasserian operation.

Methods of operative treatment.

Preservation of the motor root.

Results of section of the sensory root.

Report of cases.

Discussion to be opened by C. W. Rand, Los Angeles.

3. **AMEBIC GALL BLADDER INFECTION, WITHOUT LIVER ABSCESS, WITH REPORT OF CASES.**

HERBERT GUNN,
San Francisco.

1. Relationship to incurable intestinal amebiasis.
2. Determination of cases suitable for operation.
3. Value of duodenal tube findings.
4. Gall bladder findings at operation.
5. Report of cases.

Discussion to be opened by Alfred C. Reed, San Francisco.

4. **AMEBIC ABSCESS OF THE LIVER.**

P. K. GILMAN,
San Francisco.

Considering the etiology, morbid anatomy, symptoms and signs, diagnosis and treatment.

5. AMEBIC ABSCESS OF LIVER WITH PULMONARY SEQUELAE.

REXWALD BROWN, Santa Barbara.

Case report; history; physical and X-ray findings; operative findings—rupture through diaphragm bilateral amoebic abscess of lung; autopsy report; demonstration of amoebae in abscess walls.

Projection apparatus for microphotograph.

Discussion to be opened by Rea Smith, Los Angeles.

UROLOGICAL SECTION

1. BLADDER DIVERTICULA.

ROBERT V. DAY, Los Angeles.

(a) Associated Pathology:

- 1. Condition of bladder neck.
2. Degree of infection.
3. Facility of drainage.
4. Presence of calculus.
5. Presence and degree of kidney infection.

(b) Management of Cases:

- 1. Diagnosis
2. Prognosis.
3. Treatment.

Discussion opened by George W. Hartman, San Francisco.

2. URETERAL DIVERTICULA.

NATHAN G. HALE, CHAS. E. VONGELDERN, Sacramento.

- 1. Embryological aspects of diverticula.
2. Report of case—history, operation, pathological report, and observation of patient.
3. Literature relating to the subject.

Discussion opened by Lewis Michelson, San Francisco.

3. REMARKS BY THE SECRETARY.

GEORGE W. HARTMAN, San Francisco.

4. ELECTION OF OFFICERS OF THE SECTION.

5. MEETING OF THE WESTERN BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION.

PERSONNEL OF THE HOUSE OF DELEGATES FOR 1921

Alameda County

DELEGATES ALTERNATES

- C. A. Dukes Paul G. Anderson
David Hadden C. A. De Puy
Pauline S. Nusbaumer R. L. Glenn
G. G. Reinle W. S. Kuder
Dudley Smith F. M. Loomis
W. H. Strietmann Gertrude Moore

Butte County

DELEGATE ALTERNATE

- N. T. Entoe J. O. Chiapella

Contra Costa County

DELEGATE ALTERNATE

- Gamble M. O'Malley C. T. Wetmore

Fresno County

DELEGATES ALTERNATES

- Chas. T. Rosson A. E. Anderson
H. J. Craycroft G. A. Hare

Humboldt County

DELEGATE ALTERNATE

- George W. McKinnon James A. Hadley

Imperial County

DELEGATE ALTERNATE

- L. C. House R. O. Thompson

Los Angeles County

DELEGATES

ALTERNATES

- Bert Ellis Walter V. Brem
A. F. Speik Harlan Shoemaker
Andrew S. Lobingier E. M. Pallette
A. R. Rogers Rea Smith
H. G. Brainerd Granville MacGowan
E. Avery Newton C. H. Parker
Geo. Piness H. W. Levensgood
Eleanor Seymour Chas. L. Bennett
Albert Soiland R. H. Shippey
O. O. Witherbee A. W. Moore
Frank Miller C. G. Stivers
P. O. Sundin C. W. Decker
Harry Voorhees Walter Crane
Joseph King Stanley Granger
J. J. O'Brien J. Mark Lacey
Geo. L. Cole H. H. Lissner
Wm. Duffield Clarence G. Toland
Hill Hastings Chas. Phillips
L. M. Powers F. L. Norton
F. C. E. Mattison Donald Frick

Marin County

DELEGATE

ALTERNATE

- John Henry Kuser Leo L. Stanley

Mendocino County

DELEGATE

ALTERNATE

- Harper Peddicord Raymond A. Babcock

Monterey County

H. C. Murphy

D. B. Wylie

DELEGATE

ALTERNATE

Orange County

DELEGATE

ALTERNATE

- J. C. Crawford Henry E. Zaiser

Placer County

DELEGATE

ALTERNATE

- H. N. Miner Bradford Woodbridge

Riverside County

DELEGATE

ALTERNATE

- Paul E. Simonds A. W. Walker

Sacramento County

DELEGATES

ALTERNATES

- T. J. Cox G. A. Foster
J. W. James C. B. Jones

San Bernardino County

DELEGATE

ALTERNATE

- C. F. Whitemer E. J. Eytinge

San Diego County

DELEGATES

ALTERNATES

- L. C. Kinney A. H. Lesem
W. W. Crawford J. C. E. Nielsen
R. J. Pickard Carl S. Owen

San Francisco County

DELEGATES

ALTERNATES

- W. C. Alvarez E. I. Bartlett
W. W. Boardman P. K. Brown
Leo Eloesser F. B. Carpenter
G. H. Evans W. B. Coffey
W. S. Franklin G. E. Ebright
H. P. Hill H. W. Gibbons
Sol Hyman F. R. Girard
Lovell Langstroth E. F. Glaser
Howard Morrow J. H. Graves
W. E. Stevens Frank Hinman
W. I. Terry T. D. Maher
C. F. Welty H. C. Moffitt
H. E. Alderson Emmet Rixford
L. H. Briggs A. B. Spalding

San Joaquin County

DELEGATES

ALTERNATES

- B. J. Powell J. D. Dameron
R. T. McGurk F. P. Clark

San Mateo County

DELEGATE

ALTERNATE

- W. C. Baker A. L. Offield

| | |
|---------------------------|--------------------|
| Santa Clara County | |
| DELEGATES | ALTERNATES |
| P. A. Jordan | Thos. L. Blanchard |
| Chas. M. Richards | C. W. Delaney |
| Santa Cruz County | |
| DELEGATE | ALTERNATE |
| P. T. Phillips | A. N. Nittler |
| Shasta County | |
| DELEGATE | ALTERNATE |
| Sherman T. White | Ferdinand Stabel |
| Siskiyou County | |
| DELEGATE | ALTERNATE |
| H. S. Warren | Frederick H. Tebbe |
| Stanislaus County | |
| DELEGATE | ALTERNATE |
| E. F. Reamer | B. F. Surryhne |
| Sonoma County | |
| DELEGATE | ALTERNATE |
| F. O. Butler | Jackson Temple |
| Tulare County | |
| DELEGATE | ALTERNATE |
| Carlos M. White | Louis L. Seligman |

Correspondence

RESIGNATION OF THE EDITOR

The Council of the California State Medical Society, San Francisco, Calif.
(Through the Secretary, Dr. W. E. Musgrave)
Gentlemen:

I tender herewith my resignation as editor of the California State Journal of Medicine, to take effect at the will of the secretary of the society, but in no case later than two months from date.

While I regret the severance of my official executive relationship with the office of the State Medical Society, I still cannot but express to you my profound gratification and satisfaction at the development of the circumstances which seem to me to make that action timely. During the four years of my service as editor it has been my constant conviction, expressed many times, that the best interests of the State Society would be served by one full time man who would combine the functions of secretary and editor. The policy of development of the Journal has had this ideal constantly in mind.

It is, therefore, with the deepest gratification that I congratulate you and the entire State Society on having secured the services of so peculiarly qualified a man as Dr. Musgrave, and it will be my endeavor in the future, as in the past, to place myself unreservedly under the direction of so distinguished and experienced a leader. My personal relations with Dr. Musgrave as well as my acquaintance with his activities which are a matter of record, permits me to indulge in the sincere conviction that in him you have selected and secured an admirable public servant and an inspiring medical leader.

One further word may be allowed to state my appreciation of the collective and individual support of the council in the attempt to improve and strengthen the Journal. No report of the Journal as such is needed as it is its own witness for good or for ill.

Assuring you of my continued cordial and loyal relationship to the development of the State Society and of scientific medicine, I am

Very truly yours,
ALFRED C. REED, M. D.

350 Post St., San Francisco.

A WORTHY APPEAL

To the Alameda County Medical Society,
Oakland, California.
Ladies and Gentlemen:

An appeal has come to the Society this week for help for one of our fellow-practitioners who is

superannuated, helpless and dependent upon charity. Nearly two years ago I called a like case to the attention of this Society with the suggestion at that time that an effort be made to interest the State Society in the question of establishing some kind of fund so that those members of the medical profession of California who become dependent may be helped by their fellow-practitioners instead of becoming objects of charity upon the body politic.

Those of us who are prospering owe something to our fellow-practitioners who also have sacrificed their strength for the good of their respective communities, and the medical practitioners of this State should, in justice to our profession, make some sort of arrangement by which those of their fellows in the profession who become dependent may be relieved.

I, therefore, move that a committee on relief of dependent physicians and dependent families of physicians be appointed by this Society for the purpose of undertaking the creation of a state fund to this end.

I further move that this letter and a statement of the action taken by this meeting tonight, be sent forthwith to the California State Medical Journal for publication, in order that the way may be prepared for like action throughout the state of California.

Very truly yours,
DANIEL CROSBY.

This matter received the hearty endorsement of the Society at its regular meeting held at the Alameda County Health Center, February 21, 1921, and both motions were unanimously carried. The president, Dr. Alvin Powell, appointed Drs. Daniel Crosby, chairman, and F. W. Browning and C. W. Page to serve as a committee in accordance with the provisions of the motion.

PAULINE S. NUSBAUMER, Secy.
2404 Broadway, Oakland, Cal.

A SECTION ON DERMATOLOGY

To the Editor

I trust that you will find possible to publish the following letter addressed to the membership of the State Society at large.

"The Section of Dermatology and Syphilology"

The writer wishes to call attention to the anomalous fact of misrepresentation or rather of missed presentation of Dermatology among other branches of clinical medicine in the State Society. Judging by the number of Dermatologic papers presented before state meetings and published in the State Journal, Dermatology is easily the most unpopular and unproductive branch in medicine. Dermatologic papers are obliged to beg for shelter and to depend on charity and hospitality of the other Sections to secure a place on the program which should be theirs by right. If dermatologists and practitioners interested in skin diseases are too weak numerically to form a Section of their own, could not arrangements be made to combine Skin with the other Sections, such as Ge.-U.? This combination works very well in other states, for instance in Ohio. The majority of Ge.-U. men are combining in their private work Skin and Ge.-U. It is hard to see reasons why they refuse to extend the same policy into their state Section.

Another combination occurs to the writer which may be even more plausible—this is the organization of the Section of Dermatology and Syphilology. The close association of Dermatology and Syphilology is universally recognized, and hardly needs a new emphasis. Most, if not all medical colleges, combine them into one Department of Dermatology and Syphilology.

American Medical Association officially has assumed the same attitude, publishing "Archives of Dermatology and Syphilology." It would be natural and logical for the State Medical Society of

California to follow the official lead and organize a Section of Dermatology and Syphilology.

Such a step would correct the anomalous omission of an important Section on the program and would enlarge the scope of scientific contributions offered to the State Society.

The writer hopes that this suggestion will appeal to a sufficient number of members of the State Society to assure an early action on organization of the new Section of Dermatology and Syphilology.

Very sincerely yours,

MOSES SCHOLTZ, M. D.

Los Angeles, Cal.

County Societies

ALAMEDA COUNTY

The regular monthly meeting of the Alameda County Medical Society was held at the Health Center on Monday evening, February 21, 1921. Dr. Chesley Bush was in charge of the program of the evening which proved very interesting and stimulated much discussion. Dr. Quinton Gilbert reported a case of tuberculosis of the mediastinal glands, followed by a generalized tuberculosis. This he illustrated by interesting lantern slides. Dr. Roscoe Van Noys presented some X-ray case reports illustrated by lantern slides. Dr. Edward Von Adelung read a scholarly paper upon lung abscess. Dr. Phillip King Brown gave an outline of the medical program of the State Tuberculosis Society. Dr. Chesley Bush's paper on "Aspects of Treatment of Pulmonary Tuberculosis" was very helpful and based upon a careful review of the literature of the last two years and personal observations.

The following new members were admitted to the Society: Dr. Ruth Burr, Dr. May Walker, Dr. Frank Kelly, Dr. Guy Wallace, Dr. Quinton Gilbert.

Dr. John Snook and Dr. W. S. Taylor resigned. Dr. W. S. Taylor's name was added to the list of honorary members.

Dr. Streitmann spoke in appreciation of the action of the Supervisors in planning and erecting the Highland Hospital upon such a liberal and modern scale. The Society unanimously voted to express to the Supervisors their pleasure and satisfaction in the purpose and progress of the hospital.

The monthly meeting of the Merritt Hospital staff was held on Monday evening, February 7. The following program was presented: Critique on Methods of Treating Hip-joint Fractures, Dr. Geo. Rothganger; Review of Advances made in Radium Therapeutics, Dr. Wm. H. Sargent; Demonstration of the Rieber Fluoroscope, Dr. A. C. Siefert.

Invitations have been received by all physicians of the County to attend the post-graduate instruction in chest diagnosis, to be held on March 11 at the Health Center, under the direction of the California Tuberculosis Society.

Ceremony of Breaking Ground for the Ethel Moore Memorial Children's Building occurred on Sunday, March 6, at 3 o'clock at the New Alameda County Health Center site at 2nd and East Eleventh street, Oakland.

LOS ANGELES COUNTY

Los Angeles County regular meeting, February 3rd, Los Angeles County Medical Association met at the Friday Morning Club on Thursday evening at 8 p. m.

Dr. Fred H. Lithicum read a paper on "Ozena and Its Relation to Tuberculosis," dealing with the subject in an able manner and presenting many new thoughts relative to tuberculosis as a factor.

Dr. E. C. Fishbaugh presented a paper on "Pre-Ataxic Gastric Crisis."

Dr. F. M. Pottenger, in his usual interesting

manner, discussed "Pain as a Symptom in Visceral Disease."

At the regular meeting on February 17th a discussion of the School of Instruction for Diagnosis, under the auspices of the California State Tuberculosis Association, was ably conducted by the President, and much information elicited regarding the aims of the Association, its methods, and the results to be attained, thereby. An exhibition of the Diagnostic Moving Pictures, as prepared by Surgeon-General Ireland of the United States Army, was presented.

Dr. D. F. Harbridge presented "Entente Cordiale."

Dr. Winfred Wylie of Phoenix, Arizona, was invited to address the Society on Medical Defense.

Hospitals

The acute shortage of hospital beds for pay-patients in Los Angeles County is still unrelieved. It is estimated that at least 1000 new beds are required to properly care for the present population. This situation naturally brings about many schemes and plans in the minds of those interested. Of projected plans and architectural dreams, there are no end, many of them unfortunately founded on a basis of subscription from the profession. Fortunately for the community, the Lutheran Hospital Society of Southern California, whose acquisition of the California Hospital at 15th and Hope streets was recently announced in these columns, has definitely decided upon the erection of a six-story and basement, class "A," hospital building, the first unit of which will contain 250 beds, in addition to which a separate unit containing 100 beds for children will be built.

Personals

Dr. Norman Bridge, Dean of Internists, of Southern California, is convalescing with all the vigor of youth from an appendectomy.

Dr. Donald E. Baxter, for several years superintendent of hospitals for the Rockefeller Foundation, who has been in charge of the hospital of the Union Medical College of Peking, China, for the past two years, has returned to his home in Los Angeles.

Deaths

Dr. E. H. Garrett, formerly police surgeon of this city, died on February 18, at his home, 2251 West 20th street. Dr. Garrett was a native son, having been born at Wilmington, and received his degree from the Southern California Medical College. He was only 48 years of age, and his death is a great loss to the medical profession.

Dr. Stanley P. Black, one of the most eminent pathologists of the West, and prominent in Los Angeles and Pasadena Medical Circles for a quarter of a century, died March 5th at his home in Pasadena, of septicemia and pneumonia. For a number of years he was Professor of Pathology in the Southern California Medical College, and may be considered the Nestor of this branch of the profession.

MENDOCINO COUNTY

At our yearly meeting, held February 24 at Fort Bragg, the following officers were elected: President, Homer H. Wolfe, Albion; Vice-President, Lew Knapp Van Allen, Ukiah; Secretary-Treasurer, Oswald H. Beckman, Fort Bragg; Assistant Editor, O. H. Beckman, Fort Bragg; Delegate, Harper Peddicord, Fort Bragg; Alternate, Raymond A. Babcock, Willits.

ORANGE COUNTY

The regular meeting of the Orange County Medical Society was held in the chapel at the County Hospital, Tuesday, March 1. There was a large attendance present.

A paper on "Urethral Stricture" was read by Dr. Lane of Santa Ana. The paper described the modern line of treatment of urethral stricture, and

laid emphasis upon the value of partial urethral resection by the method of Stearns.

The second paper of the evening was read by Dr. J. M. Burlew of Santa Ana and was entitled "Hypothyroidism and Hyperthyroidism." The doctor described the modern methods for determining the existence of the above conditions, giving outlines of treatment. Both papers brought out an interesting general discussion and were very much appreciated by the members of the Society.

There was considerable discussion regarding some of the proposed legislation at Sacramento affecting the medical profession.

SAN DIEGO COUNTY

San Diego Invites the State, Hotel del Coronado, May 10-12.

Recent meetings of the Medical Society have been featured by the following presentations: February 23rd in the society rooms, Dr. Henry W. Hoaglund, consultant in treatment of tuberculosis in the Surgeon-General's office during the war, under the caption, "Some Points in the Treatment of Tuberculosis," discussed in detail the practical dietetic, hygienic and general handling of this ubiquitous scourge. On March 8th Dr. Thos. O. Burger presented an interesting and extremely practical paper on "Acute Brian Injuries," while Dr. Paul Wegeforth discussed "Occipito-atlantoid Ligament Puncture."

On March 22nd, a rich double bill was furnished by Dr. C. M. Fox on "Treatment of Lung Abscess," and Dr. J. F. Churchill on "Angina and Pulmonary Oedema."

San Diego County has lost two valued members by death during the past month, Dr. J. M. Steade, obstetrician, and Dr. H. P. Wilson, pediatrician.

The San Diego Board of Health placed itself on record at a recent meeting as favoring the proposed ordinance providing for a full-time health commissioner for San Diego.

Dr. Robert Smart was elected February 28th to the office of City Health Officer. Vice Dr. E. P. Chartres-Martin resigned.

Recently a comprehensive survey of the San Diego water-sheds and water system was made by an engineer of the State Board of Health. The recommendations made in the report of this engineer are being rapidly given expression by the activity of our county health officer.

SAN FRANCISCO COUNTY

Proceedings of the San Francisco County Medical Society

During the month of February, 1921, the following meetings were held:

Tuesday, February 8, 1921—General Meeting.

1. Accessory pancreatic tissue. Report of two cases. E. J. Horgan.
2. Ovarian auto-transplantation. F. R. Girard.

Tuesday, February 15, 1921—Committee on Industrial Medicine

Symposium on traumatic neuroses following industrial accidents.

1. Diagnosis. M. B. Lennon.
2. Treatment. H. G. Mehrrens.
3. Final disposition. Will J. French.

Wednesday, February 23, 1921—Section on Eye, Ear, Nose and Throat

The Labyrinth and equilibrium. S. S. Maxwell.

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce quarters on Friday night, March 11th, Dr. L. R. Johnson presiding. Those present were: Drs. Margaret Smythe, J. E. Nelson, H. J. Bolin-

ger, F. S. Marnell, Grace McCoskey, Minerva Goodman, J. P. Martin, H. C. Peterson, H. E. Price, J. P. Hull, J. V. Craviotto, A. H. McLeish, C. F. English, B. J. Powell, L. R. Johnson, R. T. McGurk, D. R. Powell, with Dr. William Palmer Lucas of the University of California, as guest and speaker of the evening.

The speaker read a very interesting paper on "Children's Diets in Gastro-Intestinal Disturbances." He emphasized the importance of prevention of these disturbances and stated that only 5 per cent. of mothers were really unable to nurse their babies, 5 per cent. could nurse them partially, and 90 per cent. could nurse them completely if they so desired, and urged that all physicians insist upon the mother nursing the baby when possible. The mortality rate of bottle-fed to breast-fed babies was as 6 to 1. He also emphasized the importance of regularity in diet and advised a four-hour period interval. He emphatically condemned the sweet condensed milk as infant diet as being unbalanced food and warned that the transferring from such a diet to that of modified milk must be a gradual one to prevent severe reaction. He spoke of vomiting, mentioned different causes and remedies. He also spoke of the various types of constipation and how to meet them, and also mentioned diarrhoea in the same systematic manner. Following the paper there was a general discussion, and the doctor very courteously answered numerous questions following which he was given a vote of thanks for his splendid paper.

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce, Friday evening, February 18. The meeting was called to order by President L. R. Johnson. The members present were: Drs. L. R. Johnson, H. J. Bolinger, J. V. Craviotto, C. D. Holliger, H. S. Chapman, L. Dozier, W. F. Priestly, A. H. McLeish, E. A. Arthur, B. J. Powell, H. E. Sanderson, C. R. Harry, J. E. Nelson, J. T. Davison, C. F. English, Margaret Smythe, Grace McCoskey, H. Q. Willis, R. T. McGurk, with Dr. L. Eloesser, Dr. Dudley Smith, and Mr. Celestine J. Sullivan of San Francisco, as guests.

The paper of the evening, "Treatment of Empyema," was read by Dr. Eloesser, the value of whose talk was enhanced by demonstrations by means of X-ray plates and the fluoroscope. The paper was freely discussed, indicating it was well received.

Following Dr. Eloesser's paper, Mr. Celestine J. Sullivan, representing the League for the Conservation of Public Health, addressed the Society in regard to the work of the League, and emphasized the necessity of accumulating more funds for the purpose of organization, if the work which it has done is to be carried out effectively in the future. He recommended an intensive league campaign for contributions and memberships. Dr. Dudley Smith followed Mr. Sullivan and reviewed the accomplishments of the League during the past year.

SISKIYOU COUNTY

At regular meeting held March 1, 1921, the following officers were elected for Siskiyou County Medical Society for 1921: Dr. J. R. Jones, president; Dr. H. S. Warren, vice-president; Dr. Robt. H. Heaney, secretary-treasurer.

VENTURA COUNTY

The officers of the Ventura County Medical Society for the year 1921 are as follows: W. R. Livingston, President; John G. Norman, Secretary.

NOTICE

A Correction

In April, 1919, there was published in the Journal a death notice of a Dr. J. A. Cole, a graduate of the College of the Pacific. We are able to state that this notice was incorrect, and that after six years' absence, Dr. Cole is located in San Diego. A confusion arose from the similar name of a chiropractor in Oakland.

Department of Pharmacy and Chemistry

Edited by FELIX LENGFELD, Ph. D.

Help the propoganda for reform by prescribing official preparations. The committees of the U. S. P. and N. F. are chosen from the very best therapeutists, pharmacologists, pharmacognosists and pharmacists. The formulæ are carefully worked out and the products tested in scientifically equipped laboratories under the very best conditions. Is it not plausible to assume that these preparations are, at least, as good as those evolved with far inferior facilities by the mercenary nostrum maker who claims all the law will allow?

SODIUM CACODYLATE, ARSENIOL, MON-ARSON and other similar organic arsenic preparations have been recommended in Syphilis instead of chemicals of the salvarsan type. However, they seem to have no germicidal effect on spirochete and there is nothing to show that they have any specific action in Syphilis or are of any use excepting as they might be otherwise indicated in the particular case.

SALIGENIN (Salicyl Alcohol) has been recommended as a local anaesthetic efficacious and much less poisonous than cocaine. Benzyl Alcohol which was recommended as a local anaesthetic, does not seem to come up to expectations. Salicyl Alcohol is a simple substituted benzyl alcohol and seems to be much more efficacious and it is probable that other more complicated Benzyl Alcohols may be found to give even better results.

Solutions of Calcium Chloride inhaled as a fine spray has been recommended where there is a lack of calcium in the blood. The Calcium salts seem to be much better absorbed than when taken in the stomach, but there seems to be danger of too great absorption, and, therefore, the drug in this form should be used very carefully until more work can be done on the subject.

The PURE FOOD AND DRUGS ACT requires the percentage of alcohol on the label of all proprietary medicines. In the good old days this was intended as a warning so that teetotalers would not become drunkards through the use of nostrums whose main action is the stimulation of the alcohol. However, what was one man's poison has become another man's meat, and today the market is flooded with preparations containing a large percentage of alcohol and a very small percentage of drug. The percentage of alcohol shown in figures on the label is not as small but as large as the law will allow, and the thirsty individual knows just what he is getting and gets it because it contains alcohol. This sort of thing will probably be stopped before long, but it has already done a great deal of harm. Unfortunately, there are a few people who believe the medicinal claims on the label, and who become addicts to alcohol without knowing it. One is almost tempted to say that the professional bootlegger, outlawed though he may be, is a gentleman compared with the law-abiding citizens who are responsible for these fakes.

DR. WILLIAM F. KOCH'S cancer remedy has been pronounced far from efficacious by the A. M. A., and the Toronto Academy of Medicine has found that Glover's Cancer Serum is not what it claims.

SALICON has been advertised as aspirin deprived of all its bad qualities without injury to any of its good ones, and rendered harmless so

that it does not depress the heart nor upset the stomach. As a matter of fact it seems only to be a mixture of aspirin and magnesia, so that claims advanced for it seem to be absolutely without foundation. Its claim that it was endorsed by the Massachusetts Medical Association seems also to be without foundation.

BOROTETRAMINE has been advertised as a boro-hexamine preparation. It seems to have no advantage over the mixture of boric acid and hexamine.

HELMATOL which was advertised as a preparation of hexamine, efficacious in alkaline as well as acid urine, has been taken out of the N. R. R. because its claims are unjustifiable.

The Dutch Government has officially established an institute for the examination of pharmaceutical preparations which will do the work done in this country by the Council of Pharmacy and Chemistry of the A. M. A. There is also in Germany an institute of this kind partially affiliated with the University of Berlin, and although the work done by the American Council is fully equal to that done either in Germany or Holland, it is apparently difficult to get the entire American medical profession to take the work of the Council seriously and to give it active co-operation. Undoubtedly, many men who pay no attention to the work done by the Council will be quoting that done in Germany and Holland. It is doubtful whether even a considerable proportion of American medical men have read carefully the report of the Council Committee on the use of vaccines and serums. Each pharmaceutical house tries to outdo every other in the potpourri of its shot-gun vaccines and serums. Another strain or another variety is added in the hope that one of the many may do the work. It must not be forgotten that until these preparations have been studied in the laboratory they cannot be used without a certain amount of danger, and that it does not follow that a new strain will do no harm because it does no good. This reasoning doesn't hold any better than in the case of either shot-gun mixtures of chemicals, drugs, etc., etc.

Many physicians insist on double or triple distilled water for intravenous injections. As a matter of fact if water has been properly distilled, a single distillation is as good as a hundred. If it is not properly distilled, it should never be used no matter how many distillations it has undergone. Pure water would need be distilled either in platinum or quartz vessels and be kept in platinum or quartz vessels. This is impracticable, but if, in the distillation of water, care be taken to avoid spattering, and the first and last portions discarded, the water is pure excepting for what it dissolves from the condensing worm and the vessel in which it is kept and for anything that may drop into it from the air. If the worm be of hard glass and the bottles in which the water is kept be of a good quality of glass and thoroughly boiled a number of times before being used, it may be taken for granted that a minimum quantity of inorganic matter will be dissolved, a quantity so small as to be inappreciable and harmless. If the vessel containing the water be of soft glass and not properly prepared, more inorganic matter is dissolved, but it is questionable whether enough is dissolved to do any harm. In any case, most of what is dissolved will be taken up in the first few hours, perhaps the first few minutes, so that freshly-distilled water has no advantage over other distilled water properly conserved excepting that spores etc. which drop in are less liable to develop in a shorter time than in a longer time. But this can be avoided by properly protecting the receiver.

It is to be hoped that the physician, in the interest of accuracy, may ask for properly distilled and properly conserved water instead of double or triple distilled water.

Clinical Department

FILARIASIS

By

By NATHAN G. HALE, M. D., and F. F. GUNDRUM,
M. D., Sacramento

We have thought it worth while to report this case because of (1) its apparent rarity in this vicinity; (2) the sudden onset of symptoms after many years' residence in California; (3) the unusual urological findings (chyluria from the pelves of both kidneys with chylous hydrocele); and (4) the possibility (though remote) of the establishment of an endemic focus of this mosquito-borne disease within the borders of California, such a focus having already been described within the borders of the Continental United States¹.

Case History—

T. O. Japanese, farmer, age 42, married.

F. H. Wife and 4 children, living and well.

P. H. Had severe pain in left hip when nine years old; bed 3 months; complete recovery. Upon arrival U. S. A. in 1906 had beri-beri; no recurrence. Some chronic cough last few years.

P. I. Began Dec. 31, 1920—Dull burning discomfort in epigastrium, not associated with meals, increased by working. Two days later milky urine, swelling of right testicle.

P. E. Head—Not remarkable, except for many infected teeth.

Chest—Slight dullness, both apices; few rales left base.

Radiogram—Shows moderate fibrosis to both apices and left base.

Circulatory System—Not remarkable.

Abdomen—Pain located by patient beneath left rectus, just below costal margin. There is some deep rigidity and tenderness here.

Neuro-muscular

Bones-Joints

Skin

} Not remarkable.

Urological Examination—Ext. Genit.—No enlargement of inguinal nodes, no herniae. Penis—Normal, no scars, no discharge at meatus. Scrotum—Enlarged, globular mass on right, about size and shape of a pear, translucent; does not change with position or coughing. Vas—Palpable above the pear-shaped tumor. There is an increased density in the inferior and posterior portion of the tumor mass, which is no doubt testicle. Needle introduced into the pear-shaped tumor mass, withdraws milky fluid, neutral in reaction and fat-containing. Right testicle, vas, and epididymis, normal.

Urinary Examination—In all three glasses the urine had a milky appearance, specific gravity 1021, neutral reaction, and contained considerable albumin, no sugar, no W. B. C. The stained specimen was negative for bacteria.

Rectal Examination—Few external hemorrhoids. Anal sphincter of good tone. Prostate, normal. Prostatic secretion contained no pus, 70 per cent. lecithin, no R. B. C., no spermatozoa. Seminal vesicles not palpable.

Cystoscopic Examination—Bladder capacity normal; no residual urine. Mucous membrane of the bladder was normal, as were the trigone and ureteral orifices. Catheters were inserted and specimens obtained. Ureteral specimens were collected, the two sides being practically identical and contained microscopically a few R. B. C., few oxalate crystals, epithelial cells, fat globules and no organisms. Cultures did not show growth.

Intravenous Phthalein—22 cc. obtained from the right; appearance time, 2 minutes; 36% phthalein. From the left 16½ cc.; appearance time, 3 minutes; 30% phthalein, making a total of 66% in one-half hour's time.

Intramuscular Phthalein—Given a day or two previously, showed 150 cc. and 70% the first hour, 300 cc. and 10% the second hour. Total, 450 cc. and 80%.

X-ray Examination—Normal outline of kidneys. Iodide solution, 8 cc. injected into the right kidney pelvis, 12 cc. into the left kidney pelvis. Both normal. Right shows 3 major, 8 minor calyces, no blunting or abnormalities of position. Left, 2 major, 7 minor calyces, no blunting or abnormalities as to position.

Laboratory Report—Blood—W. B. C. 8,800. R. B. C., 5,010,000. Hb., 92%. Differential, Polys 75. Small lymphas, 19. Large lymphos, 4. Eosinophile, 1. Transitional, 1. No malaria. Blood Wassermann, negative.

It required the examination of many thick smears made after the method described by Francis¹ and examined both fresh, and after staining with Wrights' stain, before a half dozen larvae were finally located during an intermission of symptoms.

We were unable to find any larvae in the hydrocele fluid, and this is also unusual.

The fat droplets in the urine were extremely small, resembling cocci in size. Ether extraction with later evaporation brought to light convincingly large fat globules.

Treatment—Bed-rest for 24 hours relieved all symptoms, pain, anorexia, and chyluria. They promptly recurred when the patient resumed the upright position.

It would appear that the thoracic duct occlusion is partial in the horizontal, but more or less complete in the vertical position.

Capital National Bank Building.

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. 4, 1914. Male, Italian. Age, 15 months. F. P. No. 8058.

Complaint: He came to the hospital because of bronchitis and lack of development. He was admitted to the hospital first in July and then again in October.

Family History: Father and mother normal Italians. There were 2 brothers and 3 sisters living and well; one brother died at age of 10 months, cause unknown. F. P. was 7 months premature.

Past History: Never been breast-fed and had been fed on many proprietary foods. Before he entered the hospital he was receiving three-fourths whole milk, one-fourth boiled water with a teaspoon of granulated sugar to each bottle. He was receiving 6 ounces of this food whenever he appeared hungry. Bowels had been regular. On entrance he was markedly undernourished. At 14 months he had suffered from a severe attack of measles, following which he had a cough and a purulent discharge from the left ear, and he had had some aphonia.

Physical Examination: Showed a pale, fairly well developed, poorly nourished child with the usual signs of rickets, square head and enlarged epiphyses and rosary. Musculature was flabby. Lungs showed very shallow breathing with some dullness in the upper lobes of both lungs. Breath sounds were clear throughout and there were moist medium coarse rales throughout both front and back. Heart was normal area, and there were no murmurs. Abdomen was large, liver and spleen were not enlarged. Reflexes were normal. He had several furunculi on the sacral region. Von Pirquet reaction was negative as was the blood Wassermann. His blood picture, for which condition we are reporting this case, showed a very low hemoglobin with a high red count and moderate leucocytosis. The blood counts are as follows:

¹ Edward Francis, U. S. P. H. S. Report 1919.

| Date Hb. % (Dare) | Red Cells | White Cells | Neutro philes | Eosin. | Baso- philes | Lymph. | L. Monos. & Transit. | Abnormal Forms |
|----------------------|--------------|----------------|------------------|--------|-----------------|--------|-------------------------------|------------------------|
| First Entry: | | | | | | | | |
| Aug. 15 38 | 5,272,000 | 27,700 | 54.8 | .4 | .4 | 34 | 10.4 | Aniso. Poik. Pallor |
| Aug. 26 32 | 5,208,000 | 19,300 | 56.5 | 1. | 1. | 37.5 | 4. | Aniso. Poik. |
| Second Entry: | | | | | | | | |
| Oct. 11 35 | 4,448,000 | 19,450 | 31 | 4.5 | 2.5 | 54. | 8.0 | .7 Myelo- cytes |
| Oct. 18 32 | 7,832,000 | 19,550 | 35 | 6.5 | 2. | 47. | 9.5 | 3 Myelo- cytes |
| Nov. 4 45 | 5,760,000 | 11,800 | 30 | 0 | 1. | 49. | 19. | 0 |
| Nov. 18 50 | 5,952,000 | 13,000 | 29 | 0 | 0 | 42. | 25. | 0 |
| Nov. 21 70 | 7,040,000 | 9,300 | 50 | 0 | 1 | 9. | 41 | 0 |
| Dec. 23 65 | 6,336,000 | 15,800 | 26 | .9 | 0 | 30. | 43 | 0 |
| Jan. 5 63 | 5,488,000 | 12,960 | 29 | 1 | 0 | 45. | 25 | 0 |

Discussion: This blood picture is rather unusual on account of the high red cell count and low hemoglobin. The differential count was practically normal except for the occasional presence of myelocytes; the moderate change in the size and shape of the red cells and the marked lack of hemoglobin were most interesting. There was marked anisocytosis and poikilocytosis and occasional stipling.

During the past few years a number of cases in infants and young children with this type of blood which resembles closely the blood of chlorosis, found in young adolescent girls, have been reported. Bunge and Abderhalden have shown that a diet containing too little iron can produce in young animals a condition very similar to that of chlorosis. In French literature one finds frequent descriptions of chlorosis in infants. Nonat (Traite de la Chlorose, Paris, 1864) as early as 1864 reported a series of 68 cases with this type of chlorosis. Halle and Jolly (Arch. de Med. des Enfants, 1903) described the blood picture of chlorosis in infants, and Schwarz and Rosenthal (Arch. Ped., 37:1) have collected a series of 40 cases, 29 of which occurred under the first year. This type of anemia shows nothing characteristic in the appearance of the child beyond a marked anemia and diagnosis of the type is not made unless the blood is carefully studied. It is interesting to note that this type of anemia occurs more often in children who were premature or are delicate. It also occurs in twins and those who have had a rather stormy history during the first three months of life. It may occur in the breast-fed as well as in the bottle-fed. It is not limited to girls as is the chlorosis of adolescence, as more cases have been reported as occurring in boys than girls during infancy. The family history often brings out the fact that chlorosis has existed in the family before or that some other type of anemia has been present in other members of the family.

There is usually a loss of appetite, and intestinal derangement associated with this type of anemia during infancy. The mucous membranes are usually pale but not excessively white. Some of the authors speak of a greenish color though this even in the chlorosis of adolescence is not common, at least in the chlorosis that is seen nowadays. The blood examination shows a color index between 0.4 and 0.6; the red blood cells vary between 4,000,000 and 6,000,000; white blood cells may be normal in number, slightly reduced or slightly increased. The platelet count is normal ranging between 200,000 and 300,000. The blood volume is usually normal. Schwarz and Rosenthal estimated that there was a negative balance of iron but a positive balance of nitrogen. Just how much the iron balance has to do with hemoglobin is not known. It is supposed that the premature and weakling has an insufficient amount of iron deposited during foetal life as a greater proportion of the deposit of iron occurs during the last three months of pregnancy. These infants bring into the world a diminished quantity of iron. In older

cases intestinal conditions or dietary errors may be a factor in the production of this type of anemia though it would appear that some other factor in addition to diet must be found to account for these cases.

Treatment: This child responded very rapidly to injections of iron citrate. He received bi-weekly injections of 1 c. c. of the citrate of iron. The dietary treatment is of equal importance as that of the administration of iron. Diet should contain liberal amounts of meat juices for young infants and scraped meat for older infants. If freshly-cooked liver can be given, this adds a very definite stimulus to the red blood-forming tissues, combined with spinach, which also stimulates the formation of red blood tissue, which combination has been found most advantageous in the treatment of these secondary anemias. It usually takes from 3 weeks to 3 months before a normal blood picture is re-established, though as has been pointed out in the other cases of anemia reported, the length of time which it takes to recover from a secondary anemia depends somewhat on how long the anemia has continued. The longer a secondary anemia has persisted the slower usually will be the recovery to normal and in some cases the level of regeneration of the blood-forming organs may be very slow in returning to a normal level. In these cases a subnormal level has apparently been struck, over which it is very difficult to bring the blood.

ACUTE PERFORATION OF DUODENAL ULCER*

With Report of Eight Cases

By FRANK J. GUNDRY, M. D., Bakersfield.

This paper comprises a report of acute perforations of duodenal ulcer operated on by me in the past nine years at the Mercy Hospital, Bakersfield.

Acute perforation of duodenal or gastric ulcer is the most serious upper abdominal catastrophe we are called on to treat. The onset is always sudden, the course rapid, and unless a timely operation is done there is a fatal ending in about 90 per cent., according to Deaver. This is probably somewhat high as we often see cases coming to operation later in which the perforation has been closed off by massive adhesions. A careful anamnesis will nearly always bring out the fact that the patient has had previous gastric symptoms, pain coming on three or four hours after eating, relieved by eating, vomiting or alkalis.

The first symptom of perforation is sudden acute, agonizing unendurable pain. Patient lies absolutely still, refusing to be moved in any position. There may or may not be vomiting. Almost immediately after the perforation the abdominal muscles become intensely rigid and, as Deaver states, there is no condition in the upper abdomen where rigidity is so early and marked as in perforated ulcer. This rigidity usually is most marked in the right upper quadrant where also

* Read before the Kern Co. Med. Society March 18, 1921

pressure elicits the greatest tenderness. After perforation, in a few hours, as a rule the symptoms are those of a general peritonitis, when the diagnosis is then more difficult to make.

Whether it is possible to make a definite pre-operative diagnosis or not it is always apparent that a serious intra-abdominal calamity has occurred and the indications are for an immediate operation.

I would call your attention to the early diagnosis and immediate operation in these cases as the mortality bears a definite relation to the time that elapses between perforation and operation. With the exception of two cases, I operated in from two to six hours following perforation.

In all these cases I closed the perforation and did a primary, posterior, gastroenterostomy, but I feel that in my second case the outcome might have been different had I done only a closure of the perforation. In the future in all late perforations, and condition of patient fair, I would limit myself to only a closure of perforation with drainage.

Only in my first and fifth cases had I seen them previous to operation. In these two cases I had seen them several times previous to perforation. Had diagnosed duodenal ulcer and advised operation, which was refused until perforation. The other cases had been treated from three months to ten years for chronic stomach trouble, no exact diagnosis made or operative procedure advised. I think we should learn from these cases that we have been overlooking the pre-perforative diagnosis of duodenal ulcer.

Case 1. J. B., age 28, male, cook.

History of chronic stomach trouble. Present attack commenced with a sudden, excruciating pain in the epigastric region. Abdomen very rigid, especially in right upper quadrant. Operation showed a perforating ulcer of the duodenum. Perforation sutured. Posterior gastroenterostomy. Convalescence delayed by an attack of lobar pneumonia.

Case 2. Q. H., male, age 46.

Stomach trouble for ten years. Two days before admission to hospital was taken with severe pain in pit of stomach. Examination: Abdomen tense, boardlike. Operation showed perforated duodenal ulcer. Closure of perforation, gastroenterostomy. Patient died following day of general peritonitis.

Case 3. J. C., age 36, oilworker.

Chronic stomach trouble, typical of duodenal ulcer. Was taken with severe pain in upper abdomen three hours before admission to hospital. Abdomen boardlike, especially above. Immediate operation. Perforated duodenal ulcer. Perforation closed. Posterior gastroenterostomy. Uneventful recovery.

Case 4. A. A., age 23, farmer.

History typical of duodenal ulcer. At 12 o'clock at night taken with agonizing unendurable pain in upper abdomen. Abdomen rigid, especially over right rectus, high up. Operation three hours later. Perforated duodenal ulcer. Perforation closed. Posterior gastroenterostomy. Uneventful recovery.

Case 5. G. D., age 25, male, blacksmith.

Chronic stomach trouble, pain coming on four to five hours after eating. Was taken about midnight with severe stabbing pain in epigastrium. On examination boardlike rigidity in upper abdomen. Operated four hours after attack and perforated duodenal ulcer found. Ulcer closed and posterior, gastroenterostomy done. Recovery uneventful.

Case 6. G. C., age 36, male, farmer.

Had had stomach trouble for three months when he was taken with severe pain in upper abdomen, every movement causing pain. Entire abdomen

rigid, most marked over right hypochondrium. Operated two hours afterwards. Perforating duodenal ulcer. Perforation closed. Posterior gastroenterostomy. Convalescence retarded by slight infection in abdominal wall.

Case 7. P. H., age 36, male.

Had chronic stomach trouble for six years. At 4 a. m. was taken with severe pain in upper abdomen. Unable to move, due to great pain, vomited. Abdomen rigid and boardlike. Operation six hours later. Perforated duodenal ulcer. Perforation closed, posterior gastroenterostomy. Uneventful recovery.

Case 8. E. R., age 49.

Chronic stomach trouble for ten years. Typical of duodenal ulcer. Was taken with severe stabbing pain in epigastrium, unable to move. Abdomen boardlike rigidity. Operated two days following attack. Small perforated duodenal ulcer. Perforation closed, posterior gastroenterostomy done. Convalescence slow due to a sloughing of fascia over rectus muscle.

New Members

Baker, Arthur S., Los Angeles; Coyne, Arthur E., Los Angeles; Bigby, Margaret H., Downey; Mueller, Otto H., Los Angeles; Lewis, C. H., Santa Monica; Lewis, Karl, Los Angeles; Pearl, Frank A., Los Angeles; Houghton, Arthur D., Los Angeles; Slemons, J. Morris, Los Angeles; Baumgartner, Otto C., Los Angeles; Bransford, Samuel G., Suisun; Burr, Ruth, Livermore; Walker, May E., Piedmont; Kelly, Frank L., Berkeley; Wallace Guy, Oakland; Gilbert, Quinter O., Oakland; Nagy, Andrew, San Francisco; Denaut, James L., Merced; Cotton, Wm. C., Atwater; Doane, Burt L., Chowchilla; Stagner, Chas. E., Gustine; Bush, Benjamin H., Los Banos; Robbins, B., Hanford; Helsey, G. F., Lompoc; Williams, A. H., Santa Barbara; Williams, Marian, Santa Barbara; Broemser, M. A., Fresno; Byron, W. P., Riverdale; Maggs, F. G., Riverdale; Watters, H. G., Watsonville; Sambuck, Anton J., Watsonville; Fehlmen, W. E., Santa Cruz.

Transferred

Dr. H. J. Willey, from Tulare Co. to Fresno Co.; Dr. H. G. Hummel, from Los Angeles Co. to Imperial Co.; Dr. R. J. Sewall, from San Francisco Co. to Los Angeles Co.; Dr. Edward Brigham, from Kern Co. to Tulare Co.; Dr. Harold P. Hare, from Fresno Co. to Los Angeles Co.; Dr. Nelson W. Janney, from Santa Barbara Co. to Los Angeles Co.; Dr. Clarence E. Ide, from San Bernardino Co. to Los Angeles Co.; Dr. Vard H. Hulén, from San Francisco Co. to Alameda Co.; Dr. A. L. Munger, from Sacramento Co. to San Francisco Co.; Dr. C. B. H. Hanvey, from Sacramento Co. to Alameda Co.; Dr. Roland B. Tupper, from San Francisco Co. to Fresno Co.; Dr. John L. McDaniel, from Los Angeles Co. to Merced Co.; Dr. Carl Weltman, from Los Angeles Co. to Fresno Co.; Dr. N. Fujimori, from Los Angeles Co. to San Francisco Co.

Resigned

Dr. Lillian Magan, Los Angeles Co.; Dr. W. E. Carter, Los Angeles Co.; Dr. W. D. Turner, Los Angeles Co.; Dr. L. G. Avery, Los Angeles Co.; Dr. W. S. Taylor, Alameda Co.; Dr. John Snook, Alameda Co.; Dr. Geo. T. Pomeroy, Alameda Co.

Deaths

- BELL, FRANK, JR.—A graduate of College of Physicians and Surgeons, University of Southern California, 1913. Died February, 1921, in San Diego. Was a member of the San Diego County Medical Society.
- GUINAN, WM. J.—Died in Marysville, California, February, 1921. Was a graduate of the University of Vermont, 1900. Licensed in California 1901.
- GREENE, FRANCES MARX—Died in San Francisco, February 9, 1921. Shock and hemorrhage from fractured skull. Run down by street car. Was a graduate of University of California 1889 and a member of the Medical Society, State of California.
- DILLON, JOHN F.—Died in San Francisco, January 27, 1921. Was a graduate of University of Iowa 1881. Licensed in California 1881.
- HUTCHINSON, GEORGE L.—Died February, 1921. Was a graduate of Long Island College Hospital, New York, 1884. Licensed in California 1885 and a member of the Los Angeles County Medical Society.
- LEIXX, FREDERICK—Died in Los Angeles, January 18, 1921. Was a graduate of the California Eclectic Medical College 1906. Licensed in California, and a member of the Medical Society, State of California.
- STEADE, J. M.—Died in San Diego, California, March 4, 1921. Was a graduate of the Cincinnati College Medicine and Surgery, Ohio, '94. Licensed in California 1895. Was a member of the San Diego County Medical Society.
- WILSON, H. P.—Died in San Diego, March 4, 1921. Was a graduate of Northwestern University Medical School, Chicago, Ill., 1896. Licensed in California 1907. Was a member of the San Diego County Medical Society.
- BLACK, STANLEY P.—Died in Los Angeles, March, 1921. Was a graduate of the Chicago Medical College, Ill., 1885. Licensed in California 1898. Was a member of the Los Angeles County Medical Society.
- BYRON, E. H.—Died in Riverdale, California, February 24, 1921. Was a graduate from the California Medical College, California, 1900.
- CALLINAN, D. F., JR.—Died in the Veterans' Home, California, March 8, 1921. Was a graduate of the Columbus Medical College, Ohio, 1891. Licensed in California 1901.
- DAVIS, THEODORE G.—Died in Redondo, California, February 8, 1921. Was a graduate of the Jefferson Medical College, Philadelphia 1885.
- EGERBERG, JULES C.—Died in San Francisco, March 9, 1921. Was a graduate of Cooper Medical College 1905; also assistant chief surgeon of the Central Emergency Hospital and a member of the San Francisco County Medical Society.
- FOULKES, WM. BRUCE—Died in San Francisco, March 6, 1921. Was a graduate of the Cooper Medical College, California 1894; also a member of the San Francisco County Medical Society.
- GARRETT, E. H.—Died in Los Angeles, February 18, 1921. Was a graduate of the College of Medicine University of Southern California 1899. Was a member of the Medical Society, State of California.
- GREGORY, I. H. B.—Died in Los Angeles, January 30, 1921. Age 66. Was a graduate of the University of Michigan 1876.
- LIVINGSTONE, H. D.—Died in Corcoran, California, December, 1920. Was a graduate of the University of Michigan, Ann Arbor, 1875.
- McGILL, HENRY GORDON—Died in Oakland, Cal., February 3, 1921. Was a graduate of the University City of New York 1892.
- ROCHESTER, HAYDON—Died in Half Moon Bay, Cal., March 13, 1921. Was a graduate of the University and Bellevue Hospital Medical College, New York, 1902. Licensed in California 1911.
- RUDDOCK, EDWARD J.—Died in Santa Rosa, February 7, 1921. Was a graduate of Harvard University Medical School, Boston 1879.
- HOLGATE, CHARLES E.—Died suddenly in his office in Los Angeles. Was 41 years old and a member of the Medical Society State of California. Was a graduate of the College of Physicians and Surgeons, Los Angeles, 1908. Licensed in California 1908.
- JENKS, CLARENCE A.—Died in Los Angeles, January 8, 1921. Was a graduate of the College of Medicine, University of Southern California, 1903. Licensed in California 1903. Was a member of the Medical Society State of California.
- KUROZAWA, KAKNSABURO.—State examination certificate Japanese Government 1888. Licensed in California 1890. Died November 8, 1920, of lobar pneumonia. Age 56. Was a member of the Medical Society State of California.
- MERRELL, CHAS. GOODWIN.—A graduate of Hahnemann Hospital and College, San Francisco, 1886. Died in San Francisco, December 12, 1920. Age 65.
- MORGAN, G. T. G.—A graduate of the Medical College, St. Louis, Mo., 1884. Licensed in California 1884. Died in San Rafael, September 2, 1920. Age 82.
- OLD, FRED'K JAS. T.—A graduate of University of Toronto, Canada, 1891. Licensed in California 1914. Died in Los Angeles, December 31, 1920. Was a member of the Medical Society State of California.
- RADEBAUGH, JOHN M.—Died in Los Angeles, December 18, 1920, from injuries received in automobile wreck. Age 69. Was a graduate of the University of Pennsylvania 1873. Licensed in California 1882.
- SAWYER, SARAH HALL.—A graduate of Starling Medical College, Ohio, 1880. Licensed in California 1889. Died in Los Angeles, November 7, 1920.
- SMITH, CLARK.—Died in Berkeley, Calif., December 3, 1920. Graduated from the Texas Medical Hospital and College 1881. Licensed in California 1884.
- STOUT, JOHN C.—Died in Oakland, Calif., January 17, 1921. Was a graduate of the American Medical College, Mo., 1878. Licensed in California 1882.
- WRENN, JOHN Q.—Died in Placerville, Calif., January 16, 1921. Was a graduate of the Medical College of Ohio 1876. Licensed in California 1881.
- WILLIAMSON, ALONZO.—A graduate of the Hahnemann Medical College, Philadelphia, 1876. Licensed in California 1901. Died in Venice, Calif., October, 1920, from heart disease.
- WORLEY, HARRY FRANCIS.—A graduate of Keokuk Medical College, Iowa, 1896. Licensed in California 1901. Died November 13, 1920, in Pacific Grove, Calif.
- WRIGHT, H. J. B.—Died in San Jose, December 8, 1920. Age 69. Was a graduate of Jefferson Medical College, Pa., 1881. Licensed in California 1889. Was a member of the Medical Society State of California.
- YOUNG, WM. S. S.—Died November 16, 1920. Age 58. Was a graduate of the Hahnemann Medical College and Hospital, Philadelphia, 1888. Licensed in California 1901.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
 BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

| | | |
|-----------------|-----------|-----------------------|
| Secretary | - - - - - | W. E. MUSGRAVE, M. D. |
| Editor | - - - - - | ALFRED C. REED, M. D. |
| Managing Editor | - - - - - | CELESTINE J. SULLIVAN |

COUNTY ASSOCIATE EDITORS:

| | | | |
|--------------------|-----------------------------------|----------------------|---------------------------------------|
| Alameda..... | Dr. Ruby L. Cunningham, Berkeley | San Bernardino..... | Dr. C. L. Curtiss, Redlands |
| Butte..... | Dr. Edward Baumeister, Chico | San Diego..... | Dr. Robt. Pollock, San Diego |
| Contra Costa..... | Dr. P. C. Campbell, Richmond | San Francisco..... | Dr. Le Roy Briggs, San Francisco |
| Fresno..... | Dr. G. L. Long, Fresno | San Joaquin..... | Dr. Dewey R. Powell, Stockton |
| Glenn..... | Dr. W. H. Walker, Willows | San Luis Obispo..... | Dr. Paul K. Jackson, San Luis Obispo |
| Humboldt..... | Dr. L. P. Dorais, Eureka | San Mateo..... | Dr. A. L. Offield, Burlingame |
| Imperial..... | | Santa Barbara..... | Dr. Robert W. Hartwell, Santa Barbara |
| Kern..... | Dr. Edward R. Guinan, Bakersfield | Santa Clara..... | Dr. Chas. Richards, San Jose |
| Lassen-Plumas..... | | Santa Cruz..... | Dr. J. B. Cutter, Watsonville |
| Los Angeles..... | M. Creamer, Los Angeles | Shasta..... | Dr. F. Stabel, Redding |
| Marin..... | Dr. W. F. Jones, San Rafael | Siskiyou..... | |
| Mendocino..... | Dr. O. H. Beckman, Fort Bragg | Solano..... | Dr. A. V. Doran, Vallejo |
| Merced..... | Dr. Brett Davis, Merced | Sonoma..... | Dr. N. Juell, Santa Rosa |
| Monterey..... | Dr. T. C. Edwards, Salinas | Stanislaus..... | Dr. E. F. Reamer, Modesto |
| Napa..... | Dr. Robt. Crees, Napa | Tehama..... | |
| Orange..... | Dr. H. A. Johnston, Anaheim | Tulare..... | Dr. J. T. Melvin, Porterville |
| Placer..... | | Tuolumne..... | |
| Riverside..... | Dr. Paul E. Simonds, Riverside | Ventura..... | Dr. C. A. Jenson, Ventura |
| Sacramento..... | Dr. S. E. Simmons, Sacramento | Yolo..... | Dr. Frances L. Newton, Woodland |
| San Benito..... | | Yuba-Sutter..... | |

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

MAY, 1921

No. 5

FIFTIETH ANNUAL MEETING OF STATE MEDICAL SOCIETY

The convening of the State Medical Society at Hotel Coronado on May 10, 11 and 12, will mark the completion of a half century of work and progress. A notable record has been written, and one of which the makers need not be ashamed. Many of the men prominent in the earlier days of the society are still actively interested in its affairs, and their presence is both an inspiration and an incentive. The society is honored by having them still on its active list, and is to be congratulated on their service. The program in its final form appeared last month in the Journal, and is inducement enough for every member possible to be in attendance. Matters of great moment to the society and to the medical profession are coming up for consideration. Be sure that all of your delegate positions are filled, and instruct your delegates as to what you want before they leave home. The social program will be unusually attractive this year. Altogether, if you have not yet decided to go, make the decision now. It will repay you manyfold.

A STRONG STATE SOCIETY

Do you think it worth while to have a State Medical Society? Honestly, do you? Have you given any personal thought on your own part to the question of what makes a State Society strong, and why you think this State Society should be developed and strengthened? If the State Society is worth something to you, does it meet your ideal now of what it ought to be? Consider for a moment what will best serve to build up your State Society.

First, and above all, is the character of executive secretary it possesses. In your new secretary you have combined in one full-time man the active direction and oversight of all your concerted activities. He is peculiarly fitted to carry this responsibility, and the society is absolutely certain to feel the urge toward strong organiza-

tion and effective scientific and public work as an immediate result. To build the State Society he will build the County Societies.

Then with regard to the Council. A councilor representing a district certainly should be expected to visit his district in all its subdivisions periodically and be in close touch with its needs, its weaknesses and its possibilities of development. It may not be essential for him to submit a written report to the Council of the "state of the union" in his own district, but at least his district should see that it is represented by a man who really represents and knows it. The duties of the councilor certainly are not comprehended alone in attendance on half a dozen council meetings in the calendar year.

Then the president and his official family. Should they, too, not have an active directing function in the affairs of the society? And should their term of office not be measured in its effectiveness by the growth in numbers, in finances, and in power of the State Society?

The legal department is one of which the society may well be proud. It is active, aggressive, forceful, successful. It exemplifies preventive medicine as well as curative medicine. Seldom does it need legal surgery to extricate members from uncomfortable situations.

In each county society there is room for improvement as we one and all come to a realization of the important service in our professional and civic life which is rendered by our membership in the County Society. Surely, local medical societies of all sorts would do well to affiliate as branches of the County Society. We do not need such a multiplicity of organizations. We do need every respectable doctor to be a County Society member, and it were well if all his professional activities could find expression in the branches and subdivisions of the County Society. The County Society ought to be in a position to touch civic life at every point and to keep itself in the forefront of civic progress.

No more vital arm of the profession can be developed than the small hospital, serving the small town and rural communities. Here lies the panacea for many of our medical ills. Here lies the strongest possible means of raising the average of medical practice both within and without the hospital. None but qualified physicians should be allowed to practice in any hospital. By furnishing a social and professional center, central laboratory and library, and a congenial spot for society meetings, the small hospital in town or country can help immeasurably in drawing the profession together, in improving the weak points of each, and can be so developed that any physician not affiliating with it will thereby be stigmatized in the eyes of the community. At such a small hospital can be centered certain facilities for giving medical care to the poor and to those unable to pay regular rates. This can be done economically for the doctor, to the advantage of the hospital and, moreover, affords a valid and compelling reason for asking the public to help carry the overhead burden of the hospital as a civic institution. The physician should not be required by custom or right to carry the entire burden of supplying the non-paying public with medical attention. Society owes it to them and should help the physician in discharging this social duty.

Finally, there must be inculcated in all of us a conviction that it is not necessary or desirable that we should agree in harmony, peace and unity on all points. Divergence of ideas and methods is the life of science, and more especially of our science. Let us remember, however, that on a few essentials we are actually all in unanimous agreement. Let us stick to those essentials in our program, and allow the fullest liberty in all the non-essentials. In the conduct of county and state societies, agree in harmony on the few basic principles, and then practice individuality in all else. Thus will we succeed in building the medical profession into the position of public trust and efficiency, which is necessary if we are to render good public service. Be a soldier. The society is democratic. Select your leaders with care. Then follow them. If you cannot follow them, get new ones. But be agreed on the few vital points, and the rest will take care of themselves.

ARTIFICIAL IMMUNITY IN DIPHTHERIA

The Schick test for natural immunity in diphtheria should precede the employment of any artificial immunizing process. This test is clinically accurate, of easy application, and only when positive, should be followed by active immunization. In the presence of clinical diphtheria, immunization in contacts who are proved by the Schick test to be susceptible, should consist of the injection of antitoxin alone. This gives immediate passive immunity and protects for a few weeks, seldom, if ever, exceeding four weeks. Therefore, at the end of four weeks or more after the administration of antitoxin for immunizing purposes, toxin-antitoxin mixture should be given, in order to secure active and rather permanent immunity.

The toxin-antitoxin mixture is given in three doses at intervals of a week. After the second dose, a Schick test shows whether the third dose is necessary, in some 70 per cent of cases immunity being secured by two inoculations only. This procedure is the recommendation of the New York City Department of Health.

THE GROWING RECOGNITION OF ANESTHESIA

A notable fact in medical progress, during the past few years, has been the increased interest manifested in anesthesia. To the various societies devoted exclusively to this subject, namely, the American Association of Anesthetists, the Interstate, and the numerous state societies—among which are two in California—have recently been added the Canadian Association of Anesthetists and the National Anesthesia Research Society. The latter is being financed by some of the forward looking manufacturers of anesthetics and apparatus, and it is hoped that eventually a foundation may result. The American Year Book of Anesthesia and Analgesia, volume two, just published, having been delayed by the war, is a valuable addition to the literature of anesthesia. Of special interest are the chapters on the pharmacophysio-pathology of general anesthetics and anesthesia in war surgery.

The following resolution authorized by Dr. Hubert Work, president of the American Medical Association, and Dr. Alexander Craig, secretary of the same, is receiving the signatures of a large number of the Fellows of the American Medical Association:

"Whereas the safety of patients, the advancement of surgery and the demands of hospital service require the rapid extension of the specialty of anesthesia,

Therefore, we, the undersigned Fellows of the American Medical Association hereby petition the House of Delegates and the Council on Scientific Assembly to establish a Section on Anesthesia during the Boston meeting, June, 1921."

The American Journal of Surgery is the official organ of the A. A. A., and devotes a quarterly supplement to current literature on this subject.

Among the constructive measures presented to the present California Legislature, the League for the Conservation of Public Health, through its committee on Medical Education, has recommended in an amendment to the Medical Practice Act, the addition of a prescribed number of hours for the study of anesthesia as one of the minimum requirements for physicians' and surgeons' certificates.

These various facts show the trend of development in one of the branches of medicine which must keep pace with the increasing precision of detail in surgical procedure.

CONDUCT AND VALUE OF AUTOPSIES

The opening of a human body for the purpose of an autopsy is no light matter and should be undertaken with a full sense of responsibility and with a clear understanding of the purposes to be accomplished. There is a full unanimity of opinion among pathologists and experts on legal medicine all over the civilized world that in order to arrive at a fair and satisfactory conclusion from any post-mortem examination it is absolutely essential that all internal organs of the body be carefully scrutinized for the existence of lesions in them *by removing them from the body and opening them up freely*. The necessity for this must be obvious to everyone, be he a physician or layman, more especially when he is informed that the manifestations of disease are often scattered all over the body and occur usually in the interior of these organs and may not be visible at all from the surface on casual inspection. In medico-legal work the necessity for such a searching investigation is so great that it is prescribed by law in many countries. In autopsies done for scientific purposes, any pathologist would feel it to be a reflection on the thoroughness and reliability of his work, if it were even suggested, that he had omitted the examination of any important viscus or any of the steps which are usually prescribed in text books on pathology as necessary for a complete examination.

If we occasionally compromise in this matter to humor the sensibilities of relatives, we always do so at the expense of the object to be accomplished. People would not make these requests for incomplete examinations if they knew that by them they are likely to render practically useless a procedure which they consented to only reluctantly but which they did consent to because they realized the great necessity for it.

Fortunately this thorough examination can be made without disfiguring the outside of the body seriously and without interfering in any way with those parts which are exposed after the body has been properly prepared for burial. Pathologists always have been particularly careful in this regard and it should be understood by the laity that an autopsy, in spite of its searching character in this regard is entirely different from a dissection done for anatomical purposes.

It is obvious that it is for the physician to decide what steps have to be taken at an autopsy in order to find the cause of death or clear up the difficulties encountered during the treatment

of the patient, and a layman who volunteers any criticism or information in this regard, even if he be an undertaker, acts contrary to the best interests of all concerned and usually manages merely to expose his own ignorance.

It is also fortunate that a searching pathological investigation, although it naturally renders the embalming of a body more difficult, does not prevent a satisfactory result in the hands of a competent embalmer. All that is required for a good job is ordinary skill and application.

The final point of discussion is that of the removal of organs from the body at the time of the autopsy. It is evident that in any autopsy which is done for medico-legal purposes under the coroner or otherwise, the autopsy surgeon must have the right to remove any and all organs that are necessary for the purposes of his investigation, and in poison cases it often is necessary to remove the majority of the internal organs for this purpose.

A similar condition of affairs exists in the case of autopsies done for scientific purposes. The examination is done with the object of determining certain definite facts and to answer certain definite questions. In this determination it is usually necessary to remove organs or portions of organs for more thorough investigation and study than can be had at the autopsy, when time is naturally limited. Many of these investigations require patient research extending over hours and days, and some of them cannot be performed except within a thoroughly equipped laboratory. It is, therefore, a matter of absolute necessity that organs should be removed for this purpose, and this is common usage wherever scientific autopsies are done.

Pathologists generally, however, have felt that they with propriety could go further than this. It is essential in the teaching of medical students, who are the practitioners of the future, on whose advice and guidance the public will have to depend eventually, that they become thoroughly conversant with the changes which disease brings about in the organs of the body. Unless they have this knowledge they cannot recognize the various diseases nor understand what dangers are connected with them or how to treat them scientifically. It is impossible to have many students at the autopsies, which occur at odd times. It is customary, therefore, in all pathological laboratories here and abroad to gather all the diseased organs from the autopsies which have been held during the week and use them for the instruction of students at stated intervals. Since the removal of the organs relieves the embalmer of an embarrassment in his work, it is often agreed that all organs are to be removed at autopsy. Naturally, as remains of human beings, these organs are treated with care and are properly incinerated when they are no longer required. Some of them are preserved and indefinitely retained in pathological museums, because they serve some permanent useful function for teaching or research.

NEWSPAPER MEDICINE

A splendid example of the crass ignorance and total superficiality of the average newspaper appreciation of scientific medicine is afforded by a recent editorial article in the San Francisco Journal. It would seem that newspapers in general, and especially newspapers which make a particular appeal because of their independent editorial page and their freedom from the smut and sensationalism of too much so-called journalism, would endeavor to familiarize themselves and thereby their readers with the facts of a case before embarking on such a tissue of misstatement and wrong implication as is involved in the article in question. Under the heading of "Scarcity of Doctors" we read as follows: "Matriculation requirements of medical colleges are said to be the cause of the acute shortage of doctors in many parts of the country, and not the retirement of many thousands of them after the extraordinarily prosperous 'flu' years when physicians and undertakers enjoyed unprecedented financial gains." A pity, certainly, that the only basis of fact quoted is in the words "it is said." And it might have been added that "it is said" by the quacks, the low-grade would-be doctors, the commercialized seekers for a shortcut to near-medical education, and all the other ilk who are now prevented in large part by the state law from preying on the public.

There is no shortage of doctors in the United States. This statement is susceptible of abundant proof. Does the S. F. Journal, moreover, know that 26 per cent of the physicians of California were in the medical services of the nation during the "flu" years? Does it appreciate that the brunt of the care of the sick in those black days was borne by the doctors who were left, overworked, carrying their own and their comrades' burdens? Does it know that the death rate among doctors was as high as in any group in the state, and that this death rate was enormously increased because of the extra responsibilities saddled on the doctor by the community? Will the S. F. Journal have the common decency to refute the unwarranted and totally superfluous insult to the medical profession in the implication in the words quoted that "the retirement of many thousands of them" was made possible by the "unprecedented financial gains" from the "extraordinarily prosperous 'flu' years"?

Presumably the non-taxpaying Eddyite practitioners and the law-breaking chiropractors and other quacks are to be put in charge of public health work and are to be considered as having a contribution worth more to the commonwealth than that of modern science. The further argument in the article quoted above, to the effect that high educational requirements are a detriment in medicine and that "good common sense" more than makes up for lack of education and training, is hardly worth noticing, as it falls by its own weight. Common sense is evidently quite as necessary in the practice of medicine as it is in other trades or professions, as, for instance, in newspaper editing. A contradiction of facts by direct statement and by implication is not, in our judgment,

a mark of common sense, and certainly is not an evidence of a well-informed writer.

Newspaper medicine, with all its vagaries and its entire lack of appreciation of the objects, methods and data of scientific medicine, is again exemplified in the last paragraph of the article in question, which reads in part: "But barring surgery, where science is absolutely essential, the common sense country physician does remarkably well with the fevers and other ills which come to his area of practice. If he can recognize a surgical condition and send such cases early to hospital, he can be and is of immense service in checking and curing general disease. He does not require a classical education for that." Such egregious nonsense would not have been written by an author who was on speaking terms with what medical education requires and comprises, or who had the faintest comprehension of what medicine and surgery and preventive medicine really are. The country dweller is entitled to as efficient medical service as the city dweller, and this means infinitely more than "recognizing a surgical condition." Again we affirm that the article in question betrays a complete lack of acquaintance with the fundamentals of efficient medical service, of the medical facts involved and of the achievements and methods of modern science. The class of people who appreciate a clean news journal are not the class who will tolerate inaccuracy in editorial presentation, nor will they condone gratuitous insult to the medical profession.

THE SALVAGING OF CIVILIZATION

Under this pregnant title, is appearing in the Saturday Evening Post a series of articles by H. G. Wells, which is decidedly worth the reading by every physician. We hear on every hand futile and disconnected theories attempting to explain the disorganization of life and thought sequential to the Great War. We hear little constructive effort to explain the motives and deeper causes of disorganization, and still less can we find fruitful suggestions for reconstruction. In medicine we are suffering from this general disorganization also. We have forsaken the old gods and are become dilettants of life. We are in danger of losing the old pride of profession, the noblesse oblige, of the physician. We are threatened with commercialism of so insidious a stripe that we do not ourselves often recognize it. We are astigmatic in our view of public obligation, and our sense of responsibility to our fellows is become atrophic. We are unwilling to assume obligations for fear our personal convenience or interest will thereby be sacrificed. We have ceased to build for the future, and our activities are motivated by our own concerns solely. In all this we are not alone; we are no different from the rest of the world. We follow like sheep in the paths of least resistance and common trend. We are hypnotized by the fad of the hour, whether in pleasure, in therapeutics or in spiritual culture. Yet while we have much company, and the course we follow is the easy course of contemporary humankind, yet is our fault greater, and our blame greater, and our penalty greater, because we have come

from a greater height and a greater opportunity.

How, then, does H. G. Wells analyze the social disorganization with which we are contending? What is his diagnosis, prognosis and, above all, what course of therapy are we to pursue after consultation with him? The answer to these questions at once suggests the statement recently of a leader in the financial world who said that business stability would come only with increased faith, with a return to the values of religion, and the development of the old-time emphasis on the supreme importance to the state as to the individual of loyalty to God, to country and to home. These three are indeed what makes Americanism, both past and present. We, as physicians, need especially to reaffirm this ancient creed. In it is our salvation, and the future of America and of the world.

Once more, to answer the questions as H. G. Wells answers them. It can be done no better than in his own words, and these words are worthy of much pondering. "Our modern communities are no longer cemented; they lack organized solidarity; they are not prepared to stand shocks and strains; they have become dangerously loose, mentally and morally. That, I believe, is the clew to a great proportion of the present social and political troubles of the world. We need to get back to a cement. We want a Bible. We want a Bible so badly that we cannot afford to put the old Bible on a pinnacle out of daily use. We want it readapted for use. If it is true that the old Bible falls short in its history and does not apply closely to many modern problems, then we need a revised and enlarged Bible in our schools and homes to restore a common ground of ideas and interpretations if our civilization is to hold together."

So much for the diagnosis, and here is the remedy. People should "see themselves and the news of today as part of one great development. It would give their lives significance and dignity. It would give the events of the current day significance and dignity. It would lift their imaginations up to a new level. If you look back into the lives of the Pilgrim Fathers, let us say, you will find that these men had a sense of personal significance, a sense of destiny, such as no one in politics or literature seems to possess today. They were still in touch with the old Bible. Today if life seems adventurous and fragmentary, and generally aimless, it is largely because of this one thing. We have lost touch with history. We have ceased to see human affairs as one great epic unfolding. And only by the universal teaching of universal history can that epic quality be restored."

Foremost in the new education and development of the sense of destiny and personal responsibility, Wells places the study of the "rules of life; rules of health. This, also, the modern citizen needs and should have; he and she needs a book of personal wisdom. One of the first duties of a citizen is to keep himself in mental and bodily health in order to be fit for the rest of his duties."

It is a keen analysis by a great thinker. We do need to return to the old gods, the social values of Americanism, the spiritual foundations of our fathers' fathers. As a profession, we must lead in good citizenship, in observance of law, in maintenance of order, in respect for the flag and reverence for the traditions of our country. For God, for country, for home—no motto can go further. No guide can be safer. It is time for us to start.

THE PHYSICIAN AND SOCIAL AGENCIES

Of necessity, the attitude of the physician toward social agencies must be most sympathetic. His work is so intimately related to social service and so admirably conserved and multiplied by the social worker that he cannot but be interested in the conduct and development of the social agencies. He should be anxious to co-operate. He should be willing first to learn from experts in the field of social medicine, sociology and social relief, as to what is needed of him in this new and fast advancing department. Having learned that, he must in his turn teach, advise and contribute of his knowledge and ability. He must face the fact that social workers are the vanguard of an army of laymen, who, with awakened conscience and eyes opened to the possibility of diminishing the enormous losses of disease, are working inevitably toward an era in which preventive, social and group medicine will absorb a large amount of his effort.

He knows all too well the tragedy of long-continued illness and disablement in the poor and middle-class family. And his desire to change these conditions should be so great as to make him willing, if need be, to suffer some inconvenience and financial loss during the transition to a more social type of practice.

The physician must admit that, overworked and engrossed as he is with technical problems, it is the social worker who must do the planning of ways and means. The physician, however, should enter into conference with these workers, not as an obstructionist fearful of change, nor as one selfishly demanding his own rights, but as a sympathetic expert who would have the new era marked by the most extensive use of the latest and best methods of treatment and diagnosis.

Those physicians who work among the poor (and who of us does not?) should know what social agencies are available to help him solve the problems which constantly arise. They must know how and when to call these agencies to their aid. They must realize the importance of the work of the agencies in making the treatment of disease actually effective and often even possible.

Here lies a great department of modern medicine. Its development lies in the hands of the social agencies. These agencies to be fully effective, require the advice and counsel which only the physician can give. Let the relationship be mutually sympathetic, helpful, conciliatory, and it will be mutually efficient and beneficial.

Editorial Comment

Society does not owe a living to any man. But most emphatically, each and every man owes the making of a living to society.

It is not safe to assume that increased basal metabolism is always, or usually, accompanied by a fast pulse rate. There is a connection, but exceptions are not infrequent.

It would doubtless serve a useful purpose if the State Medical Society had available, a circulating library of medical texts for the use of physicians in smaller towns and rural sections.

Do not forget Webster's definition of medicine as the prevention, cure and alleviation of disease. It is a definition which renders ridiculous the claims of the quacks, the cultists, and the faddists, that medicine means nothing but the administration of drugs.

The speed and promptitude which was evinced by many Eddyites this past winter in securing the protection of vaccination, was only exceeded by the silence maintained by others of the same persuasion, who contracted smallpox for lack of vaccination.

"On parent knees, a naked new-born child,
Weeping thou sat'st while all around thee smiled;
So live, that, sinking in thy last long sleep,
Thou then mayst smile, while all around thee weep."

—Calidasa, Sir Wm. Jones' translation.

Now is the time to keep yourself closely informed as to the attitude evinced in the Legislature by your own individual representatives, whom you helped elect to their present office. Let them know that you follow with care their votes on questions affecting the public health and scientific medicine. The number of doctors who pursue this course is rapidly increasing. See whether *you* are being represented or misrepresented.

Only the strongest reprobation can be accorded the use of so-called cancer cures at a high price at the present state of our knowledge. The doctors are being insulted as far as their intelligence is concerned, and impugned as far as their morals are concerned, by certain drug houses which are attempting to exploit cancer cures and commercialize false and misleading claims. The doctor or layman who has a "cancer cure" at a high price is to be looked on with suspicion, and needs to justify his existence in no uncertain language.

One is often tempted to believe that it is in reality a strange perversion of function that of all men, the physician, should have to be the one to watch and protect the public health against the unlicensed and unscrupulous commercialism of chiropractors, and quacks in general, who seek to

fatten off of the health and happiness of the people. One is tempted to wonder why the physician should not step down from his onerous and, too often, thankless post, and let the public have a full tide of quackery turned loose upon itself. The end would possibly justify the means.

The dental magazine, *Oral Hygiene*, is responsible for the following, "A chiropractor breaks loose with this,

"My dear Doctor:—In poisonous dentistry, quicksilver heads the list with about 300 symptoms. Amalgam fillings contain about 40 per cent. of quicksilver combined with tin, silver, copper, zinc, etc., increasing their galvanic and poisonous effects added to their own.

"Many dentists are afraid to handle amalgam as they used to do (mix it in the hollow of the hand) but use one of the various mixers in use and then place in the mouths of their best friends who furnish them with shelter, food, raiment, etc., a poisonous combination of base metals capable of causing their unsuspecting victims to literally rot alive and have the disgrace of having died of syphilis. Pseudotherapy, pseudosurgery, and poisonous dentistry are crippling the world; who will come to the rescue?"

KEEP THE TUBERCULOSIS POOR IN THEIR HOME STATE

The Denver Anti-Tuberculosis Society estimates that several hundred tuberculous persons without funds come to Denver every year. Practically all of them come because they have the mistaken idea that climate will cure tuberculosis.

They arrive, almost penniless, without having made any inquiries, or any provisions for their needs. Since Colorado has no state, and Denver no municipal tuberculosis sanatorium (merely a ward at the County Hospital for thirty-five very sick tuberculous residents), the care of such indigent persons is limited to a few free private sanatoria, which are continuously so overtaxed that admittance is a long and difficult matter. These sanatoria comprise: the two Jewish, which accept only a small number of Gentiles; a tent colony of men with a capacity for seventy "down-and-outers"; and a small home for a dozen destitute tuberculous women.

These tuberculous poor who migrate to Denver, finding no place where they can be cared for, look for light work in order to maintain themselves and often their dependent families; but the demand for such work is far in excess of the supply. Driven to any work they can get, with neither friends nor care, anxious, homesick, hopeless, they rapidly grow worse and usually soon die. They die for lack of proper rest, food, fresh air, and medical attention—those essentials of treatment which many of them could have had at home—or here with sufficient funds for two years' care. Without these essentials climate is of no avail. If it were, Denver would welcome these tragic health-seekers instead of urging them, for their own best chances, to stay at home.

Denver also urges that the states throughout the country plan definite programs to retain their indigent tuberculous, giving them effective treatment in state sanatoria or in their own homes.

In Minnesota a physician has been held liable for the death of a patient through administering impure ether. The Court held that it is the business of a physician to see that the ether used for anesthesia is obtained from a reliable source and is intended for that purpose.

Original Articles

SMALLPOX A QUARANTINABLE DISEASE*

By W. J. HANNA, M. D., Sacramento.

The credit of giving vaccination to the world is due to Jenner, who proved through carefully planned experiments that cowpox protects against smallpox.

Vaccination was the first specific prophylactic measure given to man; it produces an active immunity to smallpox. Much of the anti-vaccination sentiment is due to ignorance, or misconstruction of facts, and a feeling of safety because of quarantine.

The statement of farmers and folk of England, "I cannot take smallpox because I have had cowpox," made a strong impression upon Jenner, who verified the vague tradition which had been in vogue for a long time; by logical and scientific methods proving that a person who has had the mild disease, cowpox, enjoyed protection against the serious and often fatal disease smallpox.

These experiments were made in 1796, when vaccine matter was transferred from the hand of a dairy maid to the arm of a boy about eight years old. The girl had scratched her hand with a thorn and was infected with the cowpox from her master's cows. The transfer of vaccine virus was followed by a typical take. In order to ascertain whether the boy, after feeling so slight an affection of the system from the cowpox virus, was secure from the contagion of the smallpox, he was inoculated with variolous matter immediately taken from a pustule. Several slight punctures and incisions were made on both arms and the matter was carefully inserted, but no disease followed. Several months afterwards he was again inoculated with variolous matter, but no sensible effect was produced on the constitution.

In addition to this direct experimental proof, Jenner inoculated smallpox matter into ten persons, who at some previous time had contracted cowpox, with the result that not a single case produced smallpox.

This proof put a popular belief upon a scientific basis and demonstrated that cowpox is a local and trivial disease in man, and that it might be transferred from man to man, and that it protects against smallpox. In Jenner's own words: "I placed it on a rock where I knew it would be immovable before I invited the public to take a look at it."

Vaccination against smallpox was introduced into America in 1800; and in 1806 Thomas Jefferson, in writing to Jenner, said: "Future Nations will know by history only that the loathsome smallpox has existed, and by you has been extirpated." This prophecy has not yet been fulfilled.

Vaccination must be considered as a surgical operation. No person unfamiliar with surgical cleanliness should be permitted to perform this "little" operation.

During the Spanish-American War the author of this paper was stationed at the outpost of Cavite, P. I., and had 800 men under his care, among which was a battalion of the 51st Iowa

Infantry; the other two battalions being stationed in Cavite, a town some five miles distant. The entire command was vaccinated and revaccinated, with the result that not a single case of smallpox occurred during the six months' service; although the disease was prevalent in the surrounding community. Smallpox broke out in the two battalions of Iowa troops stationed in Cavite, and as a result four soldiers died from the disease.

If there is one fact that has absolutely been demonstrated by the medical profession it is that vaccination prevents smallpox. Vaccination protects not only against smallpox, but also against vaccinia. The degree and length of immunity appear to be greater against smallpox than against itself.

The general health laws of the State of California require that each person who has contact with a case of smallpox, subsequent to the appearance of the smallpox eruption, shall be vaccinated, or put in quarantine for a period of twelve days. Vaccination within three days after exposure to a patient in the eruptive stage of smallpox, will prevent smallpox; vaccination after the third day will modify the onset; and vaccination within the first ten days, after symptoms have appeared, will hasten the recovery. Immediately after vaccination, contacts who are inmates of a quarantined house may be released, and it shall be the duty of the local Health Officer to provide at public expense, free vaccination to all persons who have been exposed to smallpox. Unvaccinated children and persons shall be excluded from attending schools in subdivisions where smallpox exists.

There is no reason why a person who is afflicted with smallpox should be quarantined, except that people who refuse to be vaccinated are protected from the disease. One of the main reasons why anti-vaccination propaganda is spread, is because conscientious objectors feel safe from contracting the disease on account of rigid quarantine.

Smallpox during recent years has been of such a mild character, in the majority of cases, that it has been designated "modified smallpox." The grandparents and parents of the present generation, who have been successfully vaccinated, have caused immunity from the serious forms of the disease, and now is the time for the medical profession to take a stand and preach what they would like to practice, "Vaccination Without Quarantine."

Doctors and nurses, for the sole reason that they are protected by proper vaccination, come in daily contact with smallpox, and there are no cases on record where they have contracted the disease, unless they have neglected the protection of proper vaccination.

If anti-vaccinationists are encouraged in their feeling of safety by the quarantining of smallpox, they will continue to preach and their following will be increased, and when smallpox breaks out in future generations, as it certainly will, the death rate will be appalling.

With these facts before us, it is recommended that free vaccination be offered, and quarantine of smallpox be abolished.

*Read before California Northern District Medical Society, November, 1920, at Sacramento, California.

POISON OAK DERMATITIS (A SPECIFIC TREATMENT.)

By H. E. ALDERSON, M. D., San Francisco, Associate
Clinical Professor of Medicine (Skin Diseases),
Stanford University Medical School.

By H. J. PRUETT, M. D., San Francisco, Assistant in
Skin Diseases, Stanford University Medical School.

The poison oak plant (*rhus diversiloba*) grows extensively along the Pacific Coast where the soil is not too dry, up to elevations of five or six thousand feet. It belongs to the same family as the "poison ivy" plant (*rhus toxicodendron*) and "poison sumac" (*rhus venenata*).

Early investigators thought that the active poison was a micro-organism, and subsequently it was believed for a while to be a volatile acid.

Syme (1) in 1906 concluded that it was a non-volatile glucoside containing rhamnose, fisetin and gallic acid. This is the accepted belief today.

Von Adelung (2) in 1913 proved experimentally that the poisonous agent was non-volatile. Those cases of dermatitis having arisen from being near the plant, but not in direct contact, probably result from transmission of the poison by pollen or leaf hairs which do not contain the same but may take it up by contact with other parts of the plant. Likewise the finely divided toxin may be carried from the burning plant by the heavy smoke. He also demonstrated that in his series there was no such thing as absolute immunity to this poisoning, although some individuals were very resistant.

In 1917, McNair (3) proved that bacteria are not in any way concerned, and that the serum from lesions of this disease will not produce a dermatitis. It was formerly believed that this serum was irritating, but now the appearance of new lesions is explained by the fact that the poison is slowly diffusible and makes its entry through the various glands and follicles in the skin in regions that have come in direct contact with the poison.

McNair (4) in January, 1921, presents evidence proving that poisoning occurs only through actual transference of the active principle to the areas affected. This may be through the medium of a great variety of articles. These papers contain extensive bibliographies and are well worth reviewing. On account of limited space and time, no effort has been made by the writers to review the literature here. The references given below are to articles that contain full bibliographies.

Poison oak dermatitis is a condition with which the laity as well as the medical profession of California have been quite familiar since "pioneer days," and its treatment, consequently, is an old problem. Many are immune to this trouble and remain so for years; but this "natural" immunity often is known to disappear. The writers have never had poison oak dermatitis, although exposed often since infancy; but they fully expect to lose this immunity some day. Here in California one often sees individuals who claim that their immunity was induced by eating the leaves and small twigs of the plant, which procedure made them very sick for a few days. This eating of the leaves is common practice in some localities, the method varying from using the raw plant to drinking a "soup" made from the same. Recently,

our attention was called to the apparently successful use of the latter method by an engineering outfit in the mountains. So numerous were the cases of dermatitis venenata amongst the men that it was feared by the company's surgeon that the work would have to be abandoned, when the men solved the problem themselves by preparing a "soup" from the plant and drinking it ad libitum. Then the number of cases became very greatly reduced, according to the surgeon for the company.

Dr. Strickler's article (5) in which he described work done with extracts of the poison ivy and poison oak plants interested us greatly, and through his kindness we were able to try his poison oak extract on over fifty cases at the Letterman General Hospital (U. S. Army). Owing to great pressure of work, full case records were not kept, but Captain Petch, in whose service these cases were treated, observed almost uniformly good results. Usually the acute symptoms were ameliorated within forty-eight hours after an intramuscular injection of 1 cc. of the solution. Amongst the enlisted men, many of whom were having their first experience with poison oak, this treatment became very popular.

The writers of this paper have used the poison oak extract in thirty-four cases with very interesting and often striking results. As the supply of extract soon was exhausted, George Broemmel (B. S., Ph. G., Ph. C.), prepared a quantity for us. Our dosage has been 1 cc. intragluteally or in the deltoid.

Almost invariably one intramuscular injection is followed by great relief of the local symptoms; swelling and itching particularly begin to subside within twenty-four hours. There is not much local irritation as a rule, but at times where some of the fluid has worked its way along the track of the needle, a painful indurated nodule appears and is slow in subsiding. Occasionally we have felt impelled to give a second and third injection within seventy-two hours and in some of these cases have noticed the occurrence of new lesions on remote parts of the body. We feel that this may have been due to excessive dosage and, if so, is in itself evidence of the specificity of the treatment. Possibly our few unfavorable results have been due largely to this factor. We are now giving only one injection and hope soon to determine the question of dosage.

Naturally, the possible development of immunity to this poison after these inoculations is a matter of great interest. Some of the patients whose records are to follow seem to have become immune. How long this will persist cannot be predicted. Whether or not this immunity would have developed anyway in the natural course of events cannot be said; but these results are certainly suggestive.

Case I. History 3046 (private). A girl fifteen years of age presented acute dermatitis of entire face (with swollen eyelids completely closing the eyes), neck, hands, behind knees, and genitalia. This had existed twelve hours. The patient had been exposed to smoke from burning poison oak plant the day before. She was given 1 cc. of the oak toxine intragluteally and a calamine lotion to apply. After a very uncomfortable night,

the irritation and swelling began to subside rapidly. Within twenty-four hours after the injection, the eyes were wide open and all the areas showed very marked subsidence in the inflammation. From this time on improvement was rapid, and within six days after the injection the patient was well. Besides the calamine lotion, the mother used a witchhazel extract wash, and veronal was given the first night. This local treatment alone has never been observed to produce such marked and rapid improvement. Previous attacks on this girl were very severe and prolonged for several weeks.

Case II. History 4661 (private). A large robust man, twenty-nine years old, presented acute areas on his forearms, thighs, and genitalia of a few days' standing. He was given $\frac{1}{2}$ cc. of the oak toxin diluted with salt solution $\bar{a}\bar{a}$. intragluteally. During the succeeding two days the dermatitis showed great improvement. Then another injection of $\frac{1}{2}$ cc. was given. During the next four days improvement continued. Then suddenly, without a history of fresh exposure, new lesions came on the legs, heels, and forearms. An injection of 1 cc. of the extract was given, and within twenty-four hours the old lesions were drier, but several new ones appeared on the back of the right hand, both outer arms and thighs (just below the original areas). The patient was sent to Stanford University Hospital. For two days, improvement was steady and then a few new acute lesions appeared on various parts of the body. No more injections were given, it being feared that possibly they were producing these several crops of lesions on remote parts of the body. There was no possibility that the patient had been re-exposed to the plant or to contaminated clothing, for due precautions were taken and the patient was in bed in the hospital. Within fifteen days after the first injection, the poison oak dermatitis had cleared up. Locally, in addition to sodium hyposulphite baths, zinc oxide-lime water, calamine, and lead acetate lotions were all used.

The oak extract used in this case was part of the first lot made and contained some sediment. It is possible that recovery would have occurred much earlier (although under ordinary treatment, fifteen days is a rather brief period for severe cases) had a smaller dose been given. Could not these crops of new lesions in remote parts of the body have been due to the injection? Certainly, they were not due to fresh exposure.

Case III. History 6074 (private). A healthy man, age forty, presented acute lesions on forearms, neck, face, and genitalia. Three days previously he was exposed to poison oak, to which he is very sensitive. For years he was subject to very severe attacks, but lately began to feel that he was immune. The writer gave him 1 cc. of the toxine intragluteally in the morning. In the afternoon he felt better, but later that night all of his lesions became much aggravated. He was given a second injection of 1 cc. The next day his lesions looked much better, but the patient said that they felt worse. He had been applying industriously various home remedies, including buttermilk, gun powder, starch, ammonia, "life

root," and "fire weed." On the following day conditions were improved. During the following four days lesions steadily improved, but patient insisted that they felt worse. He did not call again for eleven days, when he presented subacute dermatitis in all the areas originally involved, and stated that he had been using ammonia water freely as "that was the only thing that relieved him." Three days later he was practically well. The writers are inclined to believe that the patient's neurotic condition and his overzealous use of a great variety of unusual "home remedies" were responsible for his dermatitis being unduly prolonged (nineteen days). Possibly too much oak toxine was injected.

Case IV. History 7262. A girl twelve years old had acute dermatitis venenata on her forehead, cheeks, chin, forearms and arms, of eight days' duration. During this time, in spite of local treatment prescribed by competent specialists, the condition had not improved. We gave her 1 cc. of the oak toxine intragluteally, and within forty-eight hours her condition was very decidedly better. This was the first relief she had experienced. Within a week after the injection, her old lesions had rapidly subsided, but in some places the dry skin was peeling and repair of the damaged skin was proceeding. It can be said that the specific poison oak dermatitis subsided within a few days after the injection, and that the exfoliation and accompanying keratoplastic processes were the natural result of the damage done by the dermatitis venenata, and that this phase should not be considered part of the specific dermatitis. At the end of the week, however, a few tiny new vesicles appeared on the hands, although the patient was not exposed. Could this have been due to the dosage injected?

A lime water-zinc oxide lotion was used locally.

Case V. History 7256 (private). A man twenty-seven years old had a few small acute lesions on his forearms, due to exposure to poison oak four days previously. He was given 1 cc. of the toxine intragluteally. No local treatment whatever was given. Within forty-eight hours the lesions were markedly improved, and the relief was complete within four days after the injection. The patient, who has had many attacks of this trouble, states that this time improvement was more rapid than ever before. He is going to rub some leaves into his skin soon to see if he is now immune.

Case VI. History 7124 (private). A young lady who was always very susceptible to the effects of poison oak (having had severe attacks of dermatitis, keeping her in bed for three or four weeks), was exposed to the smoke from the burning plant. The next day she presented a universal dermatitis with considerable \bar{o} edema in places; but no vesiculation. She was given 1 cc. of the toxine intragluteally. The next two days showed no improvement but temporary relief from itching and burning. On the following day, itching was again severe, and a second injection of 1 cc. of the toxine was given. Within forty-eight hours all of the symptoms, objective and subjective) were greatly ameliorated, and four days later (nine days after the first injection and six days

after the second) the skin everywhere had become almost normal but, suddenly, without there having been a fresh exposure, small groups of acute vesicular areas came on the legs. These subsided rapidly. Could these new lesions have been caused by the injection? The patient's old clothing had been properly cleaned and there was no possibility of fresh contamination.

The local treatment consisted of soda baths and a calamine-zinc oxide lotion. The rapid improvement in this case was very striking, compared with her previous experiences with local treatment only.

Case VII. History 7230 (private). A boy eighteen years old was exposed to smoke from a burning poison oak plant, and the following morning presented acute lesions on most of his face, wrists, and genitalia. He was given 1 cc. of the toxine intragluteally. Within twenty-four hours his condition was much improved, and on the following day all of the areas were subsiding. Four days after the injection there was nothing left of the inflammation or œdema, and the skin was dry and desquamating.

Locally, he was given a zinc oxide-lime water lotion and soda baths.

Case VIII. History 2981 (private). A boy, age nine years, had acute dermatitis venenata on his face, neck, and genitalia of a day's duration. An injection of 1 cc. of the toxine was given intragluteally. Within forty-eight hours the inflammation subsided completely, and the skin was dry and desquamating. A lead acetate, zinc oxide, lime water lotion was used locally.

Case IX. History 5812 (private). A young woman had acute dermatitis on her face and extremities of two days' standing caused by exposure to poison oak. The usual 1 cc. dose was injected intragluteally. Next day her condition was somewhat improved. She was then given another injection (1 cc.). Within three days after the first dose all her lesions had subsided to a great extent, and within two more days she was practically well. Locally, a zinc oxide-starch lotion was used.

To test her "immunity," two months later she deliberately rubbed some poison oak leaves into her skin. The results were most favorable—no dermatitis resulted. Always before this experience she was very susceptible to the effects of poison oak. This test seems to prove that immunity has developed.

Case X. History 5350. A young lady presented a moderately severe case of dermatitis venenata due to poison oak, which she had acquired when hiking. Face was in an acute inflammatory condition, and many blebs present on chin and cheeks. Hands and arms also diffusely affected, but less than face. Itching and burning were almost intolerable. This was the repetition of many previous attacks.

One-half cc. extract of poison oak toxine was given intramuscularly (deltoid) together with a soothing lotion. Moderate relief was obtained from the itching and burning. On the following day a second injection of $\frac{1}{2}$ cc. was given and followed by great improvement. The itching and burning were practically entirely relieved and the swelling greatly reduced. Three days later, she

reported that she was so comfortable that she did not feel the need of further treatment. Examination showed a few small itching areas still persisting. In two weeks the patient reported that she had been exposed to poison oak, but suffered no ill-effects. The week following this she reported with a dermatitis venenata which began three days after exposure, but was much less severe than previous attacks. A third injection of 1 cc. was given intramuscularly. Two days later, she reported herself entirely well. This patient promised to report any further recurrence, but has not done so.

Case XI. History 5539 (private). Severe dermatitis venenata on hands and face. Patient had always been very susceptible to poison oak. One cc. alcoholic extract poison oak toxine was given intramuscularly. A second injection was given the following day. No new lesions developed. Improvement was rapid. Two weeks later, the patient returned with a severe dermatitis venenata, and a third injection of 1 cc. was given. Two days later she reported great improvement. In fourteen days, she reported frequent exposures to poison oak, not followed by discomfort. Six weeks following she reported herself free from poison oak infections except for slight lesions on wrists, and a fourth injection of 1 cc. was given. Two weeks later she had a recurrence on cheeks and about eyes, following an exposure, but not as severe as the previous attacks. A fifth injection of 1 cc. of the extract was given. Two weeks later another attack of dermatitis venenata developed, and a sixth injection was given. For a time she seemed much improved and to have developed a partial immunity. This has not been permanent, however, and she has discontinued treatment, and regards herself as no better off than before. We have not had an opportunity to see or talk with her. She lives in a place where the poison oak plant grows thickly.

Case XII. History 5326 (private). A middle-aged lady in good health reported with severe dermatitis venenata involving both eyes, the face in general, arms and thighs. One injection (1 cc.) of the poison oak extract intramuscularly was followed by moderate relief. The following day a second injection (1 cc.) was given and all swelling subsided, practically, in twenty-four hours. The following day a third injection (1 cc.) was given, the patient telephoning the next day that all itching, burning, and swelling had disappeared. She had, however, a moderate dryness of the skin and slight local reaction at the site of the last intramuscular injection. Four days later a dry, burning patch was discovered on one thigh. A fourth injection of 2 cc. was given (and was followed by chilly sensations and nausea), but the burning and swelling were relieved without local applications.

Case XIII. History 5699. An eastern tourist had been in the woods gathering autumn leaves and developed an extensive and severe case of dermatitis venenata. When we first saw the patient, she had been nearly distracted for ten days. Her face was swollen beyond recognition, and the itching and burning were almost unbearable. One

intramuscular injection of 1 cc. of the alcoholic extract brought appreciable reduction of the swelling, and moderate comfort. The following day a second injection was given together with an ointment to relieve the dryness of her skin. She reported the next day much relieved, and was given a third injection. Following this she was practically relieved and needed no further treatment.

Case XIV. History 4483. A healthy middle-aged lady telephoned, saying she was so severely infected with poison oak that she could not call at the office. Her whole face was intensely swollen, when seen, and her hands and arms were also greatly involved. One cc. of the alcoholic extract was given intramuscularly, with moderate relief of itching and some subsidence of the swelling. A second injection was given the following day, and the swelling practically entirely subsided. She had a very severe local reaction at the site of the last injection. During the course of injections, this patient also was provided with a soothing lotion.

Case XV. History 5269. A seven-year-old boy came to the office with edema and extensive inflammatory lesions of the entire face, wrists and forearms. An injection of $\frac{1}{2}$ cc. of the alcoholic extract of poison oak toxine was given intramuscularly, and also a soothing lotion. The next appointment was broken, but his mother telephoned that he was very much improved. One week later, the condition having become stationary, an injection of 1 cc. was given intramuscularly. One week later was reported as well.

Case XVI. History 5832. A nurse from Stanford University Hospital had a dermatitis venenata on her forearms of twenty-four hours' duration. Also marked involvement under the eyes and on the legs. An injection of 1 cc. was given intramuscularly together with a soothing lotion. There was very little improvement. A second injection was given the next day with marked improvement following. A third injection on the third day brought entire relief and comfort. She promised to inform us of any further trouble but has not, as yet.

Case XVII. History 4363 (private). A strong, healthy farmer reported with severe dermatitis venenata of thighs and genitalia, and a few scattered areas on the arms. Itching and burning were very intense and had been so for twenty-four hours. An intramuscular injection of 1 cc. was given together with a soothing lotion. The patient reported next day that the itching and burning had been almost entirely relieved in a few hours, and that he had had a good night's rest. The swelling had been diminished about one-half. A second injection of 1 cc. was given and the patient reported the following day, practically well. One sluggish patch remained on the thigh, however, and a third injection was given (1 cc.). He did not report any further trouble. This is one of the most satisfactory cases we have treated.

Case XVIII. History 5826 (private). A robust lady of middle life reported with mild infection of both wrists, due to exposure to poison oak. One 1 cc. injection, together with a sooth-

ing lotion, was followed by complete relief in forty-eight hours.

Case XIX. History 5711 (private). A lad of nine years presented the fourth attack of dermatitis venenata during the season. His mother stated that he had always been very susceptible to poison oak. An intramuscular injection of $\frac{1}{2}$ cc. alcoholic extract was given, together with a soothing lotion. Great relief followed very shortly. The lesions dried promptly, and practically all discomfort disappeared. One week later he was given an intramuscular injection of 1 cc. in an endeavor to develop an immunity. The mother promised to report any further trouble but has not, as yet.

Case XX. History 5727. An office nurse reported with a dermatitis venenata of four days' duration. Thighs and legs were intensely inflamed, and many acute lesions were present on hands and arms. A mild, soothing lotion was given, together with 1 cc. alcoholic extract intramuscularly. Next day she reported, unimproved. A second injection of 1 cc. was followed by moderate relief of the burning, itching and swelling. A third injection (1 cc.) was given, and patient improved rapidly. No new lesions developed, and the original lesions dried and healed rapidly. There was no local reaction.

Case XXI. (Private.) A middle-aged professional lady reported with probable lesions of dermatitis venenata on both wrists. Many bullae were present, together with much induration and swelling. One-half cc. alcoholic extract poison oak was given intramuscularly, together with a soothing lotion. No improvement followed. A second injection of 1 cc. was given, and the lotion continued. There was no improvement. A third injection of 1.5 cc. was given, but there was a persistent lack of improvement. Four days later the patient telephoned that she was quite ill,—had numbness of extremities, tingling sensations and various nervous symptoms, and that the lesions were unimproved.

Case XXII. (Clinic.) A fourteen-year-old boy reported with an intense dermatitis of face and hands, with the eyes practically closed. He had had no rest for three nights. An injection of 1 cc. alcoholic extract was given intramuscularly, together with a soothing lotion. Next day he reported, and his eyes were much improved and he had had a comfortable night. A second intramuscular injection was given. He called next day, the face looking practically normal, but considerable involvement persisting in the hands and arms. This involvement was not extensive enough, however, to warrant a third injection.

Case XXIII. No. 7383 (private). A young lady reported with an eruption of dermatitis venenata on arms and chest of four days' duration. Lesions were not in the vesicular stage, but were erythematous, very itchy, and caused her a great deal of annoyance, especially when she became warm. One-half cc. poison oak extract was given, together with a soothing lotion. Next day she reported that she was very much relieved. The lesions had subsided so well that a second injection was not necessary, and within a week she was well.

Case XXIII. No. 7391 (private). A young lady reported with a severe dermatitis venenata (bullions) on the body and face. Itching was very intense, and the burning was so severe that the patient could scarcely sleep. One cc. poison oak extract was given, together with a soothing lotion. In twenty-four hours the lesions had subsided markedly and were partially dried. A second cc. of poison oak extract was given, and the local treatment continued. The next day the lesions were very much improved, as were, also, the itching and burning. From that time on the patient improved steadily, and was practically entirely relieved within four days. On the second day following the second injection, the patient developed what appeared to be a slight recrudescence on the chest. This disappeared promptly without further treatment.

Case XXV. No. 7396 (private). A young lady reported with a severe dermatitis venenata on the arms and face. Few small blebs had developed on the arms. Itching and burning were very pronounced. One cc. of the poison oak extract was given intramuscularly, together with a soothing lotion. Twenty-four hours later the patient reported the itching and burning entirely relieved. The local condition remained about as before. A second cc. of poison oak extract was given, and the soothing lotion continued. The next day the lesions were practically quiescent—showing only roughened and scaling spots. The local treatment was continued for two more days, and the patient dismissed as well.

Case XXVI. No. 7399 (private). A young lady reported, stating that she had been exposed to poison oak two days previously. She had been subject to very severe attacks of dermatitis venenata for many years, and had learned that the outbreak was preceded by a feeling of tension, tingling and itching of her skin. Having these symptoms, she sought relief from what she felt was an oncoming attack. One cc. of poison oak extract was injected, and a soothing lotion prescribed. The next day she reported that she was entirely comfortable, and that all the symptoms had disappeared. The next day she telephoned that nothing new had developed, but promised to notify us definitely if such were the case.

Case XXVII. No. 7408 (private). A young man reported with an early eruption of dermatitis venenata on the face and what he feared, from previous experience, was going to be extensive involvement over his body. He had been exposed three days previously. One cc. of poison oak extract was given intramuscularly, together with a soothing lotion. The next day he telephoned that all his symptoms had disappeared, and that the lesions on his face were rapidly abating. The following day, he reported that he was entirely comfortable.

Case XXVIII. No. 7398 (private). A girl, age six years, was brought in with a beginning dermatitis venenata on her forehead and cheeks, hands and thighs. She had been exposed to poison oak a few days previously. The child refused an intramuscular injection, so was given the poison oak extract in five-drop doses, by mouth. She was also given a cleansing and a soothing lotion

to apply. Three days later the lesions were all much improved—no new ones had developed. Two days following, the mother telephoned that the child was practically entirely well.

Case XXIX. No. 93,149 (clinic). A young man called with dermatitis venenata due to poison oak, on both arms and on the face, of about three days' duration. The patient being out of work at the time, was given no local treatment of any kind, in spite of a rather intense burning and very intense itching of the forearms and face. One cc. of poison oak extract was given intramuscularly. Patient reported the next day that he was considerably relieved of the itching and burning, but the lesions themselves showed very little difference in appearance. A second injection was given, with very little change in the appearance of the lesions on the following day. A third injection was then given, and the patient instructed to report the following day. On that day the patient showed a marked improvement. The swelling and edema of the parts had subsided rapidly, and the subjective symptoms were practically nil. His convalescence was uneventful. Thus complete relief was observed within three days after treatment was begun, and no local applications were given.

Case XXX. No. 90,404 (clinic). A young man presented a rather extensive dermatitis venenata on face and hands. No local treatment was given, and the patient given 1 cc. of poison oak extract intramuscularly. Two days later he reported considerable improvement. A second injection was given, but no local treatment administered. Two days later the patient returned with all lesions healed, or rapidly subsiding. No local treatment of any kind was given in this case, and the improvement was rapid.

Case XXXI. (student nurse). A young lady came to the office with dermatitis venenata of two weeks' standing. Skin of arms and hands scaling, reddened and irritated from scratching. One cc. of poison oak extract was given intramuscularly, together with soothing lotion. Next day she reported a gradual reduction in the itching, so that she was very comfortable. No further treatment of any kind. She reported for the two succeeding days, but the lesions remained entirely well.

Case XXXII. (student nurse). A young lady presented a dermatitis venenata of two days' duration, especially on the arms and face. Itching, burning and tingling over body very pronounced. Moderate edema. One cc. of poison oak extract given intramuscularly, together with a soothing lotion. Next day patient reported moderate improvement. No further injections were given. Two days later patient reported herself practically well.

Case XXXIII. No. 7456 (private). A young lady reported a moderate outbreak of dermatitis venenata on arms, neck and chest of one day's duration. Patient felt a sensation of tension and tingling all over body. She stated that she was subject to very severe attacks of dermatitis venenata. One cc. of poison oak extract was given intramuscularly, together with a soothing lotion. In about two hours, and before the lotion was

applied, patient stated that the itching was very much relieved. Next day she reported considerable improvement in local conditions, and no further spreading. A second cc. of poison oak extract was given intramuscularly, and the lotion continued. The following day the patient stated that she was entirely free from all discomfort, the lesions had subsided, and there was no further spreading.

Case XXXVII. No. 5606 (private). A girl, fourteen years of age, had acute dermatitis from poison oak involving the entire face, forearms and legs. She had been exposed three days previously. One cc. of the toxine was injected, and the next morning the inflammation subsided a little. Two days later she telephoned that her condition was much improved. We did not see her again, but her physician subsequently advised us that apparently the injection was not effective. The patient recovered within two weeks.

The poison oak toxine was prepared by George Broemmel, B. S., Ph. G., Ph. C., as follows: "A given weight of fresh crushed leaves of *rhus diversiloba* was covered with absolute alcohol, extracted filtered, and precipitated, and the precipitate dried at low temperature. Given weight of the toxine was dissolved in absolute alcohol and sterile water added. An arbitrary standard was set for the weight of the toxine, volume of absolute alcohol, and the volume of sterile water, but it is hoped to standardize the preparation soon."

To test the toxicity of this poison oak extract experimentally, Wm. W. Crane, a Stanford University senior medical student, recently utilized guinea pigs, rabbits and cats, and found that comparatively large doses were tolerated intramuscularly, intraperitoneally, and intravenously. As much as 3 cc. of this toxine was thus given, so it is evident that for human beings, much more than the 1 cc. of this preparation so far given would be tolerated.

Efforts were also made by Crane to produce poison oak dermatitis experimentally in young rabbits and guinea pigs with tender skin. The abdomens were shaved, and fresh leaves of the *rhus diversiloba* were crushed and rubbed in. No dermatitis resulted in any of the animals, and it was concluded that common laboratory animals probably have a natural or species immunity to this form of poisoning. When Crane's work is finished, it will be made the subject of his medical thesis, which will be published.

The results here observed seem to prove that the injection of this poison oak toxine is attended with no danger to the patient, and that it has a specific therapeutic effect in causing prompt amelioration of the symptoms. As for the question of immunity, this has been observed to follow the injections in some cases; but whether or not this immunity would have developed anyway cannot be decided at this time. It is believed by Strickler that this is a temporary tissue immunity.

Due consideration has been given the fact that any new treatment of any condition may be followed by apparent improvement of the subjective symptoms; but in these cases the patients not only felt better, but their lesions certainly im-

proved in appearance in a very short time. Those cases in which no local treatment was applied also showed prompt rapid improvement. The occurrence of fresh lesions in remote parts of the body after injections of the extract, as observed in some of these cases, seems to indicate that the preparation has "a specific effect" on the patient. This impression is strengthened by the fact that in these cases there was no possibility that recent contamination could have been the cause. As for the behavior of the lesions after the injections, the amelioration of the subjective and objective symptoms was usually very prompt. The exfoliation and keratoplastic processes in the course of repair of the damaged skin should not be counted as part of the disease itself. Our experience has encouraged us to try this toxine out on a larger series of patients without giving any local treatment.

References:

- (1) W. A. Syme, Johns Hopkins University Bulletin, 1906, and American Chemical Journal, 1906 (36), 303, 316.
- (2) E. Von Adelung, Archives Internal Medicine, 1913, Vol. 11, 148.
- (3) J. B. McNair, Journal of Cutaneous Diseases, June, 1918, Vol. 20.
- (4) J. B. McNair, Journal of American Chemical Society, January, 1921.
J. B. McNair, Archives of Dermatology and Syphilology, April, 1921.
- (5) A. Strickler, Journal of Cutaneous Diseases, June, 1918.
240 Stockton Street, San Francisco.

RESULTS OF THE WASSERMANN TEST ON 1518 MEN AT SAN QUENTIN PRISON.

By G. W. NAGEL, Formerly Assistant to Dr. L. L. Stanley, Resident Physician California State Prison, San Quentin, California.

The blood Wassermann test is a part of the routine examination of every man entering San Quentin Prison. Considerable data are thus available from which the following statistical study is made.

The present series is a review of the Wassermann tests performed on 1518 men entering the prison between April, 1918, and June, 1920. The total number showing some luetic involvement as determined by this test, performed at a reliable San Francisco laboratory, was 166 or 10.93 per cent. The details of the cases are as follows:

| | | Percentage of Total Cases | Percentage of Positive Cases |
|--|-----|---------------------------|------------------------------|
| Total number of positive cases | 166 | 10.93 | |
| Total number cases showing an initial triple plus reaction.. | 128 | 8.43 | 77.10 |
| Number of cases which became triple plus after one or two injections of Arsphenamine | 12 | .79 | 7.22 |
| Total triple plus cases. | 140 | 9.22 | 84.33 |
| Number of cases which at no time showed more than two plus.. | 26 | 1.71 | 15.66 |

In the great majority of cases, no physical signs of syphilis were present. One man, however, had many syphilo-dermata, while in another case the development of a characteristic copper-colored eruption was the means of discovering a syphilitic re-

| Note ← = Questionable negative reaction | Number of cases treated | Showed improvement in Wassermann reaction | Percentage showing improvement | Showed no improvement to date | Percentage showing no improvement | Number of injections of Arsenobenzol. The figures in the squares represent the number men receiving the injections. | | | | | | | | | | | | | Totals | Average number injections received |
|---|-------------------------|---|--------------------------------|-------------------------------|-----------------------------------|---|----|----|----|----|----|----|----|---|----|----|----|-----|--------|------------------------------------|
| | | | | | | Number of injections | | | | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | | |
| Number of cases treated | 139 | | | | | | | | | | | | | | | | | | | |
| Wassermann reduced from XXX to - at last report | | 51 | 36.69 | | | | 4 | 4 | 9 | 10 | 11 | 3 | 4 | 2 | 3 | 1 | | 285 | 5.53 | |
| Wassermann reduced from XX or X to - at last report | | 4 | 2.87 | | | 1 | | 1 | 1 | 1 | | | | | | | | 13 | 3.25 | |
| Wassermann reduced from XXX or XX to ← at last report | | 11 | 7.91 | | | | | 2 | 2 | 1 | 1 | 2 | 2 | | 1 | | | 65 | 5.90 | |
| Cases which showed improvement but not yet negative | | 41 | 29.49 | | | 1 | 9 | 5 | 3 | 5 | 4 | 1 | 2 | 2 | 3 | 2 | 3 | 1 | 237 | 5.29 |
| Cases which improved but later became XXX again | | | | 5 | 3.59 | | | | 1 | 1 | | 1 | | | 2 | | | 36 | 6.80 | |
| Cases which remained XXX thruout | | | | 27 | 19.42 | 3 | 5 | 5 | | 2 | 2 | 4 | 4 | | 1 | | 1 | 132 | 4.88 | |
| Totals | 139 | 107 | 77.53 | 32 | 23.02 | 5 | 18 | 17 | 16 | 20 | 18 | 11 | 12 | 4 | 10 | 2 | 5 | 1 | 768 | 5.33 |

action by a second test, the Wassermann test on entrance having been negative.

Of the 166 definite cases of lues, 18 or 10.84 per cent. had committed some sexual crime, while the remainder, or 89.16 per cent., were confined for variable non-sexual offenses; 67 (39.75 per cent.) were married, 99 (60.25 per cent.) single. The youngest man was 18, and the oldest 56 years, the average age being 32.24 years. One hundred and eleven (66.27 per cent.) admitted having had some form of venereal disease, 33.73 per cent. denied having ever suffered from such ailments. Closer study reveals that 54 (32.53 per cent.) had had gonorrhœa only, nine (5.42 per cent.) syphilis alone, while 46 (27.71 per cent.) admitted having had gonorrhœa and syphilis. The total who admitted having had a "chancere" or syphilis was 55, or 33.73 per cent. One hundred and sixty-one (96.99 per cent.) had never received anti-syphilitic treatment previously, while five had had treatments. One had taken mercury rubs, one mercuric injections, while three had received "606" intravenously.

Anti-syphilitic measures are compulsory here, the treatment being as follows: Twenty injections of arsenobenzol (Dermatological Research Laboratories, Philadelphia, Pa.) are given to as many men every Saturday. Owing to the large number of luetics in prison at a given time, each man receives an injection about every four to eight weeks. The interval is somewhat long, but time is not a great factor here as far as the men are concerned, and the ultimate results are in the main satisfactory. In the interim each man receives mercury rubs nightly for six days, followed by a week of rest. This procedure being continued as long as signs of lues are present or until symptoms of mercurialism appear. In giving the injections, two solutions are prepared, each containing 6 grams of arsenobenzol in 600 c.c. of sterile water. After neutralization with 15 per cent. sodium hydroxide 60 c.c. (containing 6 decigrams of the drug) are administered to each man by means of a blood transfusion apparatus

devised by Dr. L. L. Stanley, resident physician, at this prison. This instrument consists simply of a small T-shaped metal tube, which can be attached to a Luer syringe and which contains ball valves so arranged that the fluid can be drawn in one arm of the T and discharged through the other. With this instrument a large series can be given in rapid succession. Before each injection sufficient blood is withdrawn for a Wassermann test, this affording an accurate and recent estimate of each man's condition and the effect of the treatment.

Records are kept in alphabetical order in a loose leaf folder so that the Wassermann reaction, the number of treatments, etc., for any given case can be ascertained at a glance.

The above chart shows in detail the results of treatment and the number of injections required.

One hundred and thirty-nine men in the present series received treatment here. The majority of the 27 receiving no treatment were transferred to some other institution, while a few had pulmonary tuberculosis and were therefore given no injections, previous experience having shown unfavorable results from treatment in such cases. As judged by the Wassermann reaction 107 (77.53 per cent.) have to date shown definite signs of improvement. The figures are specific, but at best they should only convey a general impression. Some of the cases which show improvement now may later become positive again, but on the other hand it is reasonable to assume that many of those which are listed as triple plus throughout will later develop negative reactions, as it may be noted that 13 of the latter have to date received only three or a less number of injections. A few remain "Wassermann fast" in spite of prolonged treatment, no adequate reasons have yet been put forward to explain these cases. In this connection it may be noted that the reliability of the Wassermann test as an indication of the patient's condition has been seriously questioned by some, it being claimed that certain cases though actually cured of their infection will still give a positive reaction. Another

point of interest to be noted is that 31 (22.30 per cent.) of those which showed improvement, first gave a negative reaction followed by a positive one again before a final negative, or at least a reduced Wassermann resulted.

During the administration of more than 768 arsphenamine injections, there were less than 20 untoward reactions. In these cases the patients almost immediately after the injection went into a more or less severe state of collapse or shock, with nausea and vomiting, weak, rapid and irregular pulse, and respiratory difficulty, with a temporary accompanying edema and cyanosis of the face and neck. The most severe case responded almost immediately to strychnin and was discharged from the hospital the next day. There have been four cases of jaundice following the giving of the drug, usually quite marked, but in three instances with no other symptoms beyond vague, slight gastrointestinal disturbances, duration from several weeks to a month or more. One case, however, after one injection developed a gradually increasing jaundice, and after an illness of five weeks died in coma. Autopsy showed marked degenerative changes in the liver.

As judged from the above series, the following conclusions may be made:

1. The Wassermann test should be made a routine procedure in all complete medical examinations.

2. A negative history and physical examination does not preclude the possibility of lues being present.

3. The treatment as outlined above is an effective and practically safe method of bringing about a negative Wassermann reaction.

4. Five or six injections, accompanied by mercury rubs extending over a period of from one to two years are usually sufficient to bring about the desired result.

5. A small percentage of cases show no improvement in spite of prolonged treatment.

ANTE AND POST-OPERATIVE TREATMENT

By C. L. LOWMAN, M. D., Los Angeles.

The last five years has emphasized and disseminated, more than the previous twenty years, many features in surgical treatment which orthopaedic surgeons have been using for a long time. Preventive measures, ante-operative, and post-operative measures, are based on the functional outlook with definite relation to future function and efficiency. Previously there was a general tendency on the part of many surgeons to be so deeply interested in the pathological process and the technic of the surgical procedure to be used in its eradication, that the question of physiological disturbances of function was given little consideration. Without minimizing the value of a thorough knowledge of pathology, it has been very evident that things functional have received comparatively little attention.

The time is coming when all patients with more or less chronic conditions, will receive thorough consideration in respect to both functional and pathological conditions in the sense that active pro-

cedures aimed at correction of both conditions will be instituted. For instance, a woman with uterine prolapse will be examined anatomically for location of static faults, and physiologically for disturbances of organic balance. When this is done, there will be less operating for backaches and neuritic conditions before other obvious faults are corrected. It is a matter of common occurrence in orthopaedic practice to have patients referred, for leg and backache, give a history of one or more pelvic or abdominal operations having been done in an effort to relieve their symptoms, when they have never been stripped and examined to ascertain whether there were faults in their static alignment. Many of these patients give perfectly clear histories which evidence this static strain and the chain of neural changes which often accompany it.

The fact that actual organic disease exists, only emphasizes the fact that every added pound of energy which the patient possesses must be conserved to aid in overcoming it. Consequently, each system of activity in the body must have due consideration: circulatory, respiratory, eliminatory, mental and neural—especially sympathetic—endocrine, muscular, and bony. The last is not the least by any means.

The reason that so many chronic cases stay chronic is largely due to the fact that they are not completely gone over and all the points of nerve leakage ascertained. It is quite common to see patients who are struggling against some infectious or other pathological handicap, carrying a mechanical overload of twenty per cent. due to bad statics. This is frequently seen in bed patients as well as ambulatory cases. It is perfectly feasible not only to maintain proper bed postures, but to keep up muscle tone and nerve tone and aid physiological processes by properly applied physical and therapeutic measures.

I have maintained for years that the time would come when each hospital would have a gymnasium and physical therapy department for use in keeping up the efficiency of the hospital personnel as well as for use as a definite part of the therapeutic equipment. This prophecy bids fair to be realized, for it is reasonable to suppose that the physio-therapeutic departments in military hospitals have come to stay, and already some have been established in civilian hospitals.

Immediate operations are necessary only in acute cases, and consequently there is usually ample time during which to establish a regime of physical supervision, by which I mean attention given to all physical needs, both for correction and prophylaxis. To illustrate: A middle-aged woman, mother of two children, presents herself for pain and neuritic symptoms in the upper back and shoulder regions. She has considerable disturbance at her menses, her back being worse at that time, and she had considerable low-back pain during her last pregnancy. Since nursing the last child, she has not regained weight nor strength, has occasional attacks of insomnia and suffers from indigestion and constipation.

Examination of pelvic viscera discovers a considerable degree of relaxation and prolapse with

bogginess and congestion of uterus. Operation for some form of suspension or fixation is advised. This is obviously necessary, but it is equally obvious that the patient's general condition is not good, and a little reflection will show that the symptoms for which she presented herself may or may not be cleared up by this operation unless proper attention is given to the rest of the faults, such as the neural condition due to bad statics, overstrain and the dysfunction of the abdominal viscerae.

The patient has placed herself in the surgeon's hands to have her health and efficiency restored to normal. After a number of months of dragging around in a semi-invalid condition, should she be subjected to the shock of a major operation, the increased static strain, and the weakening effect of lying in a hospital bed, and be sent home in three weeks with wounds healed? Just this is occurring day after day in all our surgical centers. The patient is often sent home and told to take it easy for a few weeks and report occasionally to the surgeon. Is the patient normal, or has she been restored to her maximum efficiency? Will Nature do for her what the surgeon hopes or expects? Even though the temporary respite of the rest in bed and freedom from household cares has greatly improved her general condition, will she regain the degree of health and efficiency which should be hers?

Just how far should the surgeon's responsibility go? Let us say, for instance, that the surgeon notes such facts as follows:

Static faults: Drooped shoulders, wide prominent scapulae, long relaxed back, pendulous or heavy breasts, lowered abdomen with hollow epigastric area and perhaps some slight pelvic tilt and pronated ankles.

Mental condition: Worried and anxious, disposition changing, periods of depression.

Neural condition: Prickling, tingling, and numbness over shoulders and down the arm, after sewing or reading or on efforts at concentration, arms feel heavy and pain in back increases, periods of insomnia.

Circulatory condition: Feet and hands cold, especially in the morning, efforts at walking fast make her short of breath and heart palpitates; pulse ninety-four, standing.

Digestive condition: Usually constipated, occasionally a dull right-sided pain with soreness over the pit of the stomach, some gas and odor, sensitive to pressure over the epigastric area and in region of pelvic inlet and over the ovarian region.

Endocrine condition: Hair rather dry and brittle, teeth soft during pregnancy, skin dry.

Menstrual condition: Breasts a little sore and heavy, cramp and pain a day or two before flow is established and relieved when flow appears, some low backache at this time aggravated by too much activity, especially continued standing.

Pelvic findings: As stated above.

It is noted also that the patient is wearing a loose, ill-fitting, short-waisted corset, and ordinary conventional shoes with narrow toes, round soles and Cuban heels.

These are, roughly, some of the most salient

symptoms, and the chances are that the case would usually be termed, "An ordinary case of neurasthenia, resulting from overstrain and made worse, if not caused, by the reflex disturbances excited by the pelvic pathology."

Now let us see what ante-operative procedure of, say, two months' duration will do for this case. In the first place, packing and internal support for the pelvic condition to reduce congestion, weight and ligamentous strain, and its incident reflex irritation through the sacro sciatic sympathetic plexus; attention to faulty statics, rebalancing, proper shoes with broad heels not higher than one to one and one-fourth inch, flat soles, inner border of heels raised one-eighth inch to take muscle strain off the tibial group and the external thigh rotators (which fasten in and about the pelvis); a small sitting-pad from one-fourth to one-half inch thick under the low side to correct the lateral pelvic tilt; a proper corset with a high back that comes up over the scapulae, snugly fitted, the flare at the top of the corset being removed, extra darts made under the scapulae and in the pelvic zone, and skirt on either side in front under the abdomen so that when the laces are pulled up behind, the front will give an abdominal lift; gussets inserted under the bust down to and through the waist line, relieving the pressure made by the dart taken up under the scapulae, thus making a point of release opposite the point of pressure; shoulder straps passed through carriers placed beside the eyelets behind and passing under the arm around over the shoulders crossing the scapulae to the opposite side and brought downward and forward across the waist line to fasten to a buckle attached on a level two inches inward from the anterior superior spine.

The crossing of these straps will hold the scapulae inward and backward, relieving the strain on the rhomboidei and trapezii, realigning the shoulder girdle, and probably controlling largely the neuritic symptoms in this area. With the spine straightened the abdominal viscera are lifted, the ribs raised, respiration, circulation, and elimination are all favored, and the ligamentous and muscular overload is placed on the bony framework where it belongs.

This attention to static strain will at once restore ten to twenty per cent. of the nerve energy previously wasted by making muscles and ligaments do the work the bony structure should do, and by removing in part obstacles to proper physiologic functioning of the visceral organs.

Mentally, you have at once gained the patient's confidence and interest by attention to these fundamental things which she can easily see. The immediate response to these measures insures her faith in you and she knows she is going to get well.

A high percentage of such cases get relief from many of these symptoms within a few weeks. They eliminate better and consequently sleep better, their toxic elements are reduced, and the vague neuritic sensations begin to disappear. It must be explained to them, however, that the greatest benefits will come from efforts to work

with Nature, and attention to all hygienic and dietetic laws will bring its reward.

Activity and rest must be prescribed definitely and specifically in accordance with the physical limitations of the individual and in accordance with the stage of the abnormal conditions present.

Naturally, absolutely fixed rest would be indicated in acute and subacute conditions, whereas moderate exercise may be allowed and prescribed in the more chronic cases. The patient must be told that all these procedures are to rest the various structures and to prevent and break the old, bad postural habits; consequently, to begin the building up processes certain exercises to strengthen the weakened structures will be necessary. These need only be simple, slow movements with deep breathing, but should be given lying down.

In this particular type, gentle, resistive exercise, with a rest of from one-half to one minute between every three or four movements, will gain the best results. This will slow the heart rate and increase the muscle metabolism without any production of strain or fatigue. In heavy individuals, shorter, more rapid and more active exercises would be of value, but should also be given lying down.

Rest positions. Preferably the patient should sleep on a hard mattress with only a very small pillow or none at all, and the foot of the bed raised six to eight inches. Two or three times a day the patient should assume the Goldthwaite position, which has all the advantages of the kneechest position and none of its disadvantages. It is assumed as follows: Patient to lie prone with the pelvis and legs supported on bed or couch; upper trunk, head, and arms resting on a chair or box, the level of which should be six to ten inches lower than the level at which the pelvis is held. If the pelvis is not allowed to slip off its support, no strain due to curving forward in lumbar region will result. At the same time the dorsal kyphos will be passively corrected. If it is desired that air enter the vagina in order to allow correction of the pelvic viscera, the legs can be separated without influencing the back position. This position should be maintained for thirty minutes two or three times a day. The patient should refrain as much as possible from all activities which produce strain from concentration, such as watching exciting "movies" or anything requiring fixing of the attention. Such activities produce back strain, especially in the cervical, dorsal, and shoulder girdle area. They must realize that more consideration must be given to preparing themselves to go through the operative procedures, and temporarily the simple life is best.

Next, operation. We will say this is performed with good result. The patient's back has been supported on the operating table and consequently no strain and stretching has occurred. She is placed back in a bed from which the vicious sag has been removed, and later she is not allowed to use, except for very short intervals, the equally vicious back rest which strains all the back and

pelvic muscles and allows the relaxation of the cervical fascia, the mesenteric attachments and the intrapelvic ligaments. The foot of the bed is kept elevated.

As soon as the wound is healed and less sensitive, a soft pad is placed over it and the corrective posture corset which the patient previously wore is put on, supporting the abdominal wall, keeping the spine in proper alignment and preventing the downward pressure of lowered abdominal contents from interfering with or jeopardizing the operative results.

The patient goes home without having experienced much shock. The danger from infection has also been reduced. She has had little or no post-operative backache from sacro lumbar and sacro iliac strain. Her convalescence is shorter and more satisfactory than the average case. As soon as she is strong enough, she begins her exercises again. First in the lying position, later in the sitting position, but not in the standing position. All exercises which would interfere with the operative measures are eliminated, but special attention can be concentrated on the correction of shoulder girdle and upper back, and the foot and leg positions. The patient reports frequently for advice along the lines of physical supervision. She will need to find out about increasing her activity and to have corset inspections and alterations as her body changes take place. The abdominal girth will get smaller, necessitating additional darts in the pelvic zone. The increased depth and width of the upper abdominal region requires enlarging the corset in that area. Improvement in strength of back muscles and better carriage will later allow the removal of the shoulder straps or else a new corset may be worn occasionally for social wear. If the breasts are heavy and tend to drag the shoulder girdle downward and forward, a breast support such as I have described in another article will be of service, both in preventing this dropping of the bust and in holding the scapulae backward in a better position. When this is worn, the high back corset is no longer necessary.

This procedure may have to be carried out over considerable time, possibly for one or two years. That is, there will be occasional consultations for advice along the line suggested. However, this line of follow-up work is as valuable to the surgeon as it is to the patient in that he has an opportunity to watch the results of both the operative and non-operative aspect of the treatment. His reputation is bettered in that he becomes known as one who is thorough, careful, and appreciative of the many minor functional disturbances that the women folk of our times are heir to. It will also suggest another step for him, namely, to begin inspecting the children of these same mothers with an eye to correcting the potential defects and abnormalities which heredity and environment have wished upon them. He will thus be doing more constructive work and preventive surgery than he could possibly accomplish with his knife.

AMEBA-LIKE LEUCOCYTES IN NORMAL BLOOD AND IN PUS

By HERBERT GUNN, M. D., San Francisco

In cases where there is a question as to the character of motility of bodies suspected of being amebæ, the statement is frequently made that pseudopodia are never seen excepting in amebæ. That such a belief is incorrect, and may under certain conditions lead to error, the following observations tend to show.

The finding of a small motile ameba in the urine of a patient, recently apparently cleared of an intestinal amebiasis, who suddenly had an attack which resembled a liver abscess, suggested the search for amebæ in the blood stream. This patient had no symptoms referable to the amebæ in the bladder and nothing in the lower abdomen to suggest a direct infection.

The examination of the fresh blood on a warm stage showed cells exhibiting all of the characteristics morphologically of amebæ. The picture was so striking that I was able to demonstrate it as a blood infection with amebæ to Dr. P. K. Gilman, who has had years of residence in Manila and who is thoroughly familiar with intestinal amebæ, and to Dr. Alfred C. Reed, for years a practitioner in China and now lecturer on tropical diseases in Stanford University.

An immediate examination of controls, dysentery cases and normal persons, showed the same cells present in all. The blood was obtained by the ordinary method used when examining unstained specimens for malaria—a small drop on a slide covered with a cover slip, the edges of which were sealed with vaseline. The smear should be thin so that the central portion appears as a single layer of red cells and the examination made on a warm stage with a one-sixth or oil immersion lens. The examination may be made immediately but more characteristic forms and greater motility may be demonstrated after an hour or two has elapsed.

Sluggish motility has been observed after seven-teen hours. Changes in shape with the flowing of the granules and the progression of the cell may be seen in many cells. In individual cells distinct clear hyaline pseudopodia may be observed, broad or fingerlike and assuming all of the shapes seen in amebæ in the stool. The pseudopods may protrude slowly or shoot out suddenly at one or several points.

In many cells there is no definite ectoplasm to be seen while others show a distinct endo and ectoplasm. In many cells there appears to be a clear ectoplasm but with progression of the cell in the opposite direction.

The clear hyaline pseudopods are sometimes very indistinct and readily overlooked. The endoplasm may be finely or coarsely granular but nuclei are not clearly in evidence.

There is considerable difference in the activity of cells from different persons, some being much more active than others. Smears from the blood of some of these cases stained with Wright's stain

showed the normal picture and it was impossible to stain any cells in the odd shapes assumed while active.

No. 1—Changes in shape of a leucocyte during ten minutes.

No. 2—Showing clear ectoplasm, pseudopodia and changes in form.

No. 3—Actively motile vacuolated forms.



No. 4—Fantastic shapes assumed over period of ten minutes.

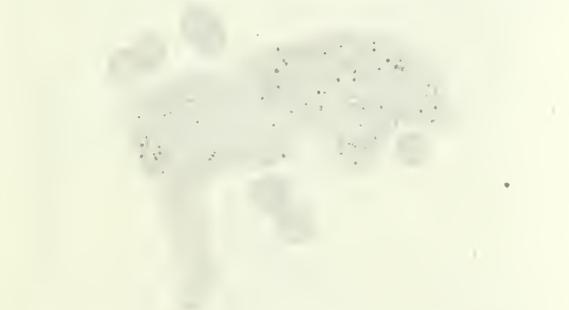
appeared to be a change in shape but no flowing of the granules could be made out and there was no progression. A close scrutiny of these motile cells showed an occasional one extruding a distinct hyaline pseudopod. The nuclei were invisible in some of the motile pus cells and apparently they were polymorphonuclears.

The question naturally arises is it possible for the leucocyte under favorable conditions to show all of its characteristic motility after it has left the blood. If so it might explain many peculiar findings reported in the past, similar to the above mentioned bladder infection.

The probabilities are that sluggishly motile leucocytes, assuming as they do at times, bizarre forms are accountable for some of the reports of amebæ or ameboid bodies found in unusual locations.

The drawings were made by Mr. Sweet, medical artist, and are all from the blood.

350 Post street.



No. 5—Very active leucocyte. Note size compared with red cell.

PLASTER CAST IMMOBILIZATION OF FRACTURES PRIOR TO OPEN OPERATION FOR REDUCTION OF SAME.

BY NEWTON T. ENLOE, M.D., Chico, Cal.

The object of this paper is to state briefly the advantage of immobilizing fractures in plaster casts a week before attempting the open operation for the reduction of same, and to give the technic of preparing the field of operation which has to date given 100 per cent. clean wounds.

1. A great many fractures reduced by open operation can not be held in proper position after being reduced while the plaster Paris is being applied and allowed to harden, except when held together by some foreign material.

If we operate through a window of an already hardened cast the fracture, when reduced, will usually remain in position without the introduction of plates, screws, wire or other non-absorbable foreign material. This is a very great advantage. Any surgeon doing bone work knows well the disadvantage of using any of the many foreign materials and would prefer to leave them out when apposition can be maintained by any other means.

2. After the fracture is exposed we find the limb (or site of the fracture) is held firm by the cast extending above and below the joints nearest the fracture. This enables the surgeon to apply the lion-jaw forceps, or any other instrument he may choose, to reduce the fracture with very slight effort. The lower edge of the window through which the operation is being performed is a fulcrum upon which to rest the forceps. If extension be necessary and can not be given by an assistant by traction on the limb, an instrument can be placed between the forceps about three inches from the bone (the best instrument being a double end automobile wrench) and by bringing the handles of the forceps together the ends of the bones will separate; and by rocking in any direction desired on the lower edge of the window



No. 6—A minute leucocyte, very active.

In pus cells obtained from various sources, intestinal tract, arm, etc., it was possible to demonstrate motility in a few cells but of a different character entirely from that seen in the leucocytes from the blood. In the pus cell there



1. Closed cast showing window in position ready for operation.



2. Window removed showing gauze saturated with benzoin.



3. Rubber dam applied and held in position with adhesive plaster.



4. Benzoin dressings removed.



5. Shows ulna in position without use of any foreign material.



6. Operation in progress showing both ulna and radius exposed with ample room for work.

(fulcrum) there is practically no effort in placing the ends of the bones in perfect position. In the majority of cases they will remain so without internal fixation by any foreign material.

There is far less danger of injuring the bones or soft tissues with the forceps, for the reason that at all times one has complete control over the instrument instead of endeavoring to set the bone in midair with the flimsy support of assistants or the Hawley table.

I do not wish to give the impression that the Hawley table or assistants are not useful, since both are indispensable in the application of the cast preparatory to operation. Having the field of operation supported in plaster and the cast resting on a firm support, changes a very difficult task to a relatively simple procedure.

3. No surgeon, however skilled and experienced, can be sure that the cast he applies immediately after operation will not be so uncomfortable as to require readjustment such as may endanger his result. The application of the cast long enough before operation to permit it to dry thoroughly insures that immobilization will not have to be interfered with after operation on account of an uncomfortable cast. When our plan is followed the patient has had time to get over the initial period of discomfort during the first four or five days after the application of the cast before he comes to operation. If there should be anything wrong with the first cast applied, its removal and the application of another is a simple matter before operation,—not so afterward. Restlessness of the patient, due to cast discomfort, is a menace to the operative result, and this is avoided where the cast has been applied long enough before the operation for the patient to become accustomed to it. This is especially true when a body cast is used.

4. Probably the greatest advantage of applying the cast before operation is that it lessens the liability of infecting the field of operation. Anyone doing bone work knows how difficult it is to hold the towels and sheets in position when operating upon a fractured femur or humerus—in fact, any of the bones. The surgeon holds the fractured ends in midair with whatever clamps or forceps he prefers, and while the assistants hold the limb as steady as human help can, the surgeon just about gets the bones in position when some wave or motion (not the fault of anyone in particular) causes the bones to slip and drop out of position, probably just opposite to where they were originally. Every time they slip they wound tissue, sometimes injuring important vessels. During this strain the sterile dressings and sheets which once protected the field of operation, slip out of position and often unnoticed by the surgeon who is using all his energy, both mental and physical, to reduce and retain in position a fracture which, if operated through a window, would entail small effort.

The slipping of the sterile sheets is often the cause of infection; these sterile dressings can be sewed or clamped to the skin surrounding the field, but the extreme exertion required to reduce the fracture sometimes tears them loose.

5. Contrary to the first impression every sur-

geon seems to get, there is ample room in all cases to operate through a window. The limb is held firm in the cast and does not roll to and from the operator. Consequently, when working through a window there seems to be about twice as much room as in *the same sized incision* where no cast is used.

6. Just as soon as the operation is completed the anesthetic can be discontinued, the patient placed in bed without fear of undoing the surgeon's work or breaking the cast before it becomes firm.

THE TECHNIC EMPLOYED IN PREPARING THE FIELD OF OPERATION

The field is cleansed with soap and water and shaved. It is then thoroughly dried and covered with sterile gauze the size and shape of the proposed window. The gauze is then saturated with comp. tr. benzoin; sheet cotton is applied over the surface to be covered with the cast, and the cast applied, the limb being held in as nearly a normal position as possible. While the cast is hardening the window is cut but is allowed to remain in place. On the morning of the operation the window is removed, cotton cut away and pulled from the edges. Dental rubber dam is tucked under the cast on all four sides, stretched over the cast and held in place with adhesive strips. The benzoin-saturated gauze is removed and the field painted with tr. iodine and alcohol, equal parts. This is removed with 95 per cent. alcohol and sterile towels are tucked under the edges of the window and turned back over the cast. The other operating sheets are placed over the patient; the incision is made through the skin and superficial fascia and the towels sewed in to protect the wound from possible skin infection. The operation is then continued in the usual way.

Before beginning to close the wound tr. iodine and sterile water (10 per cent.) are used to cleanse the wound. It is then thoroughly dried and closed; comp. tr. benzoin dressing is used, the window replaced and held in place with bandages of adhesive plaster. If the wound be previously infected, it is first cleansed with tr. iodine and alcohol, equal parts, followed by alcohol and then sterile water. The wound is dried, filled with comp. tr. benzoin and closed, leaving a small opening for drainage, but no drains are used.

As a rule, the wound is not dressed for ten or twelve days, even though it has previously been necessary to dress it daily, provided of course that all points of infection have been reached by the solution.

In the last six months the author has had three cases of infected wounds with non-union of bones that have resulted favorably with the employment of the above technic. No case required more than three dressings, in spite of the fact that all of them had required dressings every other day for a month prior to operation.

SUMMARY

The advantages claimed for the above described method are:

1. Easy reduction during operation. (The cast provides a fulcrum for leverage.)
2. Danger of wounding the tissues by slipping of unsupported fragments is done away with.

3. The introduction of non-absorbable fixation materials is made unnecessary.

4. The danger of infection of the field by the slipping of dressings during operation is much diminished.

5. Postoperative comfort and quiet are assured.

6. The surgeon is saved much agony of spirit and waste of physical energy.

P. S.—Since writing this article I have dispensed with the sewing in of towels after making incision through skin and fascia, but instead paint with Tr. Benzoin Comp. with equally good results.

TRAUMA—ITS RELATION TO NERVOUS DISEASES OF UNDETERMINED PATHOLOGY*

By JOSEPH CATTON, M. D., San Francisco.

In assigning to trauma a causal place in relation to diseased conditions, it has too often been a fact that medical men have dealt with the subject with absolute empiricism. What has been true in this connection, as regards medicine in general, has been true, likewise, as regards neurological medicine. Physicians who are scientific, those who demand pathologic cause for symptomatic effect, must satisfy certain definite criteria in their minds before calling trauma a factor in the production of a given disease. This paper will consider but one of the class of nervous diseases, whose pathology has not yet been definitely and finally determined. Such consideration as is given to this particular disease and its relation to trauma, may be applied, in toto, to the other neurological conditions of undetermined pathology.

This communication concerns itself with the syndrome of tremor-rigidity-paralysis occurring in persons who present, neither clinically nor pathologically, lesions of the cortico-pyramidal or peripheral nervous mechanisms. This syndrome is seen most frequently, and reported as Paralysis Agitans, but it also forms the nucleus of the picture of Juvenile Paralysis Agitans, of progressive lenticular degeneration (Wilson) and of progressive atrophy of the globus pallidus (Hunt); and it may be added at times to certain other neurological pictures. The relation of trauma to these disease pictures will be considered. Further, trauma will be thought of in a narrow sense in order that there may be more of definiteness to the consideration and a greater possibility of agreement as to certain of the relationships.

Trauma, then, will refer to physical injury rather than to either psychical shock or any one of the unlimited number of generalized diseased conditions which might be included in a more comprehensive idea of trauma. While neurologists are interested in the relation of trauma to neurological conditions, including Paralysis Agitans, from the academic and the scientific standpoints only, they may be satisfied with slow progress and withhold opinion indefinitely about these relationships. However, in certain instances, for example when a case is to come before an Industrial Accident Commission or a court, if physicians do not have definite opinions, or if their opinions are at variance, then the lay judge, jury

or board can, and will decide that trauma did or did not cause the Parkinson, or other neurological pictures, as the case may be. It would seem, therefore, very proper to check up the scientific data on such relations as are under consideration. Industrial medicine makes these problems immediate; medical men should solve them. Two cases are presented for discussion this evening.

Case A. Male, age 51, white, American; lumberman. Family and past history not remarkable. Cut his middle and ring fingers, right, with a circular saw, March 6, 1920. On March 8, 1920, he was given general ether anesthetic, and fingers amputated. It was reported that he came out of the anesthetic poorly, and had Cheyne-Stokes breathing and was semi-conscious for some time; that during the next day it was possible to arouse him, but if he were left alone he would lapse into a comatose state. On the second day he became entirely conscious, but was noted to be stupid, and to have had a marked slowing of all his mental processes. His blood pressure was found to be low, but there were no other remarkable findings. Soon there came a weakness of his right arm, and then of his left arm and the lower extremities. The weakened members began to show some rigidity. One examiner reported on April 30, 1920, positive Wassermann in blood serum, and that the spinal fluid showed pressure of 400, 54 cells and positive Nonne, Noguchi and Ross Jones tests, and positive Wassermann. He administered a few doses of salvarsan. He felt the case was one of early paresis. On May 21, 1920, another examiner found the symptoms to be due to organic brain disease, but could not confirm paresis. He reported negative Wassermann in the blood serum, and spinal fluid negative to all tests. He was seen first by present examiner on August 24, 1920. He complained of the slowing of his mental processes, of occasional night sweats, hot feelings, slight deafness in right ear, stiffness of legs and dragging of feet, stiffness in arms, difficulty to start or to stop walking, had early repeated incontinence of urine; has become constive; had crying spells; did not speak much; a nocturea of i to ii increased to iii after the accident and operation; there had been some oedema of feet during two months. He denied having had any of the muscular symptoms before. Likewise, he denied at time of examination that he had any other remarkable symptoms. Physical examination showed him to look six years older than the stated age, fifty-one; greasy skin on face, losing hair, almost all teeth missing, accentuated second aortic heart sound, B. Pr. 123-83, partial amputation of middle and ring fingers, right, and no other findings. He showed some deafness in both ears, mainly right. Mask face, generalized muscular weakness, very slow voluntary movements, generalized rigidity of musculature of extremities, trunk and neck, the rigidity being most marked in the order, right arm, left arm and left leg. There was a slight increase in muscular irritability. No tremor was present, but at times the patient moved his thumb right across his index finger in a manner not unlike the excursion of the paralysis agitans tremor. At other times he drummed with his index and middle fingers of each hand. There was some slight swaying on testing Romberg, but no other changes in sensory examinations. His achilles jerks were not gotten, otherwise all reflexes were present and normal, and there were no pathological pyramidal tract signs. The psychiatric studies brought out the marked slowing of cerebral processes, especially of motor initiation. His wife stated that he had grown childish; there was some dysarthria. The urine at times has shown small amount of albumin. The other laboratory findings have already been mentioned.

The case has been seen at intervals since; the condition has been practically stationary, but the

* Read before the San Francisco Neurological Society, April 1, 1921. From the Department of Neurology, Stanford University Medical School.

mental condition and the gait have improved slightly, and at times coarser motions of the right thumb are replaced by pill-rolling tremors.

Case B. Male, white, German, age 57; lumberman. With a family and past history which is not remarkable. States that he was entirely well until August 10, 1920, when he fell from a pile of lumber about eighteen feet high, striking his right shoulder, both hands, left foot, right arm and back of neck. He was bruised in these locations, but denies having had any other symptoms. He was not unconscious. Head X-rays were negative, and no remarkable pathology was demonstrated by physicians. Soon thereafter he was noted to have become quiet, slow and stupid, whereas formerly he had been jolly and active. He developed a muscular weakness, generalized, but more marked in extremities, and more so in the right arm. Then came rigidity in arms and legs, most marked in right arm, and a tremor so that his thumbs were rolled persistently across the palmar surfaces of his fingers; a shaking of his arms and legs and sometimes generally; a shaking of his mouth and head; occasional headaches; pains across lumbar regions and in lower neck; generalized aches and occasional paraesthesiae in right hand; qualitative changes in taste, smell, hearing and sight. Appetite has increased, but thirst is normal. More constive since accident. He has had nocturea iii to iv for past several months, and sometimes oedema of feet. He denies having had any of these symptoms before the accident; neither has he any other symptoms than those that have been mentioned at this time. Physical examination showed some pallor, dry skin on upper posterior arms, poor teeth. B. P. systolic 160-100, puffy hands, and no other remarkable findings. Eye examinations were negative. There is some disturbance of hearing, smell and taste. He walks with lack of co-ordinated arm swinging, and with the whole body held somewhat rigid. No propulsions present in any direction. Face was mask-like, but at times he smiled; no laughing. He showed tremor of eyelids and mouth; and rocking of head; and typical pill-rolling tremor of hands. There was a rocking of the lower jaw on the upper. There was weakness and rigidity of all four extremities and of the back musculature, these findings being more marked in the right arm. Sensory examinations were entirely negative. There was slight increase in intensity of deep reflexes; all others present and normal; no pathological reflexes. Says he has sweat less since the accident. Psychiatric survey developed no remarkable findings. Urine, Wassermann, and complete spinal fluid examinations were negative.

It is not claimed that either of these cases fits the classical picture of Paralysis Agitans, either as regards development or in symptoms presented. It is claimed, however, that the nucleus of the syndrome is there in conjunction with other symptoms. And there are specific questions to be answered concerning the cases. Did the accident to the fingers, the anesthetic or the amputation in Case A, initiate or make worse such pathology as is, at the basis of the symptoms presented? In Case B, did the fall and general bruising of the right side of the body produce or exaggerate the picture seen?

Attention need only be directed to the lack of confirmation of various alleged pathological bases of the shaking palsies to place them outside of serious consideration. The seat of the disease has been placed in various portions of the brain, cerebellum, spinal cord, peripheral nerves and muscles; the parathyroids have been claimed to be related. The pathology alleged has included hemorrhages, small aneurisms, perivascular infiltrations of a vas-

cular or gliomatous sort and senile changes and others. Sufficient careful work would seem to have been done by Jelgersma, Lewy, Manschot, Auer, McGouch, Hunt, Wilson, and others, to indicate that the basal nuclei, and especially the lenticular nucleus when the seat of pathology, may give rise to the syndromes under consideration.

Before proceeding with a determination of the relationship of trauma to the tremor-rigidity-paralysis group, one must accept either the position that the pathology is unknown, or that it has a definite localization, e. g., in the basal nuclei. It would seem that to hold, at this time, that its localization elsewhere than in the basal nuclei has been demonstrated, would be impossible; it would seem that either the corpus striatum pathology or the absence of any demonstrated pathology would be the only alternative positions, with such data as are available.

The two positions will be applied to the cases presented. These cases are similar to those which have gotten into the literature and have resulted in there being a relation alleged as between paralysis agitans and trauma. The disease has been alleged to have developed immediately after falls, injuries to nerves, stabs, contusions and fractures. Usually, a connection between the part injured and the earliest symptoms has been reported. Trauma has been alleged to speed up the progress of a paralysis agitans, once begun. There has been a consensus of authoritative opinion that the disease, even following trauma, has appeared only in an already diseased nervous system.

Bailey has said, in effect, that with the data at hand it is impossible to explain the genesis of Paralysis Agitans of a traumatic type further than to note the sequence of events, and to infer that the injury stands in some causal relation to the disease. The writer has found no recorded case in which trauma has been alleged to be the cause of the disease and in which post-mortem findings have shown that trauma was actually the cause, or even a contributing factor. Trauma has not been reported as an etiological factor in any of the cases of primary degenerations in the region of the corpus striatum.

If the pathology is non-localizable, if it is to be considered a vague and general something or a systemic condition, then medical men may state that cardiac and nephritic cases and others are seen to progress more rapidly after injury. Or, such experiments as those of Ehrnzoeth may be quoted, in which animals with head injury are reported to be more susceptible, both locally and generally, to the injection of pathogenic bacteria. Statements are made that local, or rather general, trauma may be followed by circulatory and nutritional changes, and that in turn there may come toxemia and elective degenerations of certain portions of the nervous apparatus, and that these degenerative processes are the basis for some of the chronic and progressive neurological syndromes. No report is found which ascribes to trauma the role of being a necessary or even the sole factor in the production of tremor-rigidity-paralysis pictures. When physicians cannot state that trauma has caused a condition, they should be careful that their

answer "No" to the question, "Can you deny that trauma could cause this condition?" does not lead to an opinion by laymen that trauma did in fact cause the syndrome. Then, in unscientific fashion, one more case may find its way into the books where trauma and paralysis agitans have had an alleged relationship.

When one accepts the tremor-rigidity-paralysis syndrome as due to pathology in or about the corpus striatum, reasoning may be much more clear on the relationship under consideration. Essential and primary degeneration of the lenticular nucleus has been associated with the Wilson syndrome; similar degenerations of the globus pallidus (Hunt) have accompanied paralysis agitans pictures, especially in the juvenile type of the disease, and Hunt, Wilson and others have pointed out that in this region varying pathologies may give varying symptom pictures with tremor-rigidity-paralysis as the nucleus.

With definite pathology location, more definite relations have been and can be worked out. Trauma has been apparently demonstrated as an exciting cause in paresis, tabes and progressive muscular atrophy. It has been considered even more determining in traumatic types of meningitis, brain abscess, epilepsies and psychoses. And, lastly, and not without great importance, trauma has been definitely proven to cause intercranial hemorrhages with or without brain lacerations, and these hemorrhages have been found within the brain substance as well as extra- and sub-durally. Studies on brains, the seat of injury, should be made to determine whether trauma to the head may be the exciting cause of hemorrhage into the basal nuclei, especially where there was pre-existing vascular disease. Further, it should be determined whether trauma might influence in the direction of progression, new growths, inflammatory and degenerative processes in the same regions. Naturally, before opinion of this sort could be countenanced, there should be satisfaction of certain scientific criteria. How a trauma to the arm could cause the appearance of tremor-rigidity-paralysis in that member, and later the same syndrome rather generalized, is not at all clear to the writer.

In assigning to trauma a place in the etiology of paralysis agitans, the following criteria should be satisfied. In infectious medicine Koch's postulates are demanded, and nothing short of their satisfaction will place a given bacteria in causal relation to a given pathological condition. In neurological medicine, likewise, associations of this sort should be more than beliefs.

These are suggested criteria:

1. The syndrome must be demonstrated.
2. The occurrence of trauma, and of sufficient trauma must be established.
3. The pathology which is the basis of the disease must be shown to be capable of resulting from the trauma received.
4. There must be demonstrated a bridge of pathology with or without symptomatology from accident to the picture presented—a time relation.

5. Other causes must be negated as having occurred in the interval between the accident and the first appearance of symptoms.

6. It must be demonstrated within reason that the syndrome was not present before the accident. The possibility of the syndrome itself causing the injury must be borne in mind. (Photographs, handwriting and the wearing out of shoes, at different periods before and after the accident, may help in placing the date of beginning of symptoms.) This criterion is a difficult one to satisfy, but it must be satisfied if a scientific proof of the causal relation of trauma to paralysis agitans is to be furnished.

"AN ESSENTIAL IN RECONSTRUCTIVE SURGERY—'ATRAUMATIC' TECHNIQUE"

By STERLING BUNNELL, M. D., San Francisco

Reconstructive surgery has been confronted by two great obstacles, infection and fibrosis. In order to overcome these, the following methods have been formulated into what I have termed "atraumatic" technique.

Through the impetus of the industrial accident compensation laws, and lately through the necessity of reconstruction of the injuries sustained during the war, many surgeons have turned their attention to this line of endeavor.

Experience teaches us that ordinary surgical procedure is not sufficient for success, and we have been brought to the realization that a new surgical technique must be developed in order to achieve results in reconstructive surgery. Unlike most surgery, which consists in opening infected areas and in removing diseased tissues, reconstructive surgery consists in building up parts, so that motion and function will result. The difference is like that between katabolism and anabolism, and the technique which has been adequate for one has proven inadequate for the other.

Returning to our obstacles, let us assume that a long and careful operation has been done. Grafts have been put in and movable parts have been rebuilt, so that they are mechanically right for function. All too probable is it that suppuration will set in, sloughing away our seeming results and making fruitless our well-meant efforts. Perhaps infection will be avoided, but in the wake of the surgeon is scar tissue. We will find that our whole operative idea becomes congealed into a hard, fibrous, immovable cicatrix functionally useless.

If we are to succeed in reconstructive surgery, we must develop super-asepsis and atraumatic technique. We cannot indulge in slips of asepsis, as in abdominal surgery, for there the ever kindly peritoneum stands ready to make amends for slight infection, nor can we indulge in the usual amount of trauma.

By super-asepsis, I mean a degree of asepsis rarely seen in the operating-rooms of today. It must be stated, however, that infection is caused by many other factors than slips in asepsis. The very same factors that cause fibrosis also cause infection. With the best asepsis, the surgical

wound is not bacteriologically clean. Trauma applied to tissues will, in a percentage of cases, furnish the necessary conditions for the few unavoidable germs present to cause infection. Aside from trauma, some other factors that determine infection are: dead spaces, tension of the sutures, large sizes of catgut, large knots, long free ends of ligature, too many stitches, too small an amount of tissue encircled by suture, excessive amount of tissue beyond ligature, mass ligation, tension in fat, foreign bodies in fat, too close proximity of skin suture line to tissue grafts, buried foreign bodies, including ligature and suture material, closure with insufficient hemostasis, excessive separation of tissue layers, drying of tissues, use of hot sponges, and the time factor in long exposure of tissues.

Assuming that asepsis has been perfected, and that the above breaks in general surgical principles have been avoided, let us now turn our attention to the factor of trauma in causing infection and fibrosis.

The trauma commonly seen in surgical operations is as follows: Tissue is torn, pinched, crushed, twisted, pulled, rubbed, scraped and picked to shreds, with a gross disregard for not only its microscopic structure, but even for its macroscopic structure, and also with a disregard to the amount of physiological tissue reaction that will result from the trauma. It is common to see an operative wound so traumatized that at the time of closure the tissue is ragged, shreddy and hemorrhagic. It is red and oozing, the anatomic parts are no longer differentiated, and the tissue has lost its consistency and is flabby and shapeless. How different in appearance such a wound is from one which has been atraumatically handled. Here we find a clean, dry wound, with pale, smooth, glistening tissues still in their natural colors and with their anatomy clearly differentiated. Its histological structure has not been damaged, and in the healing there will be but little tissue reaction.

If our conception of the tissues be a histological one, we will appreciate them as being made up of a mass of succulent cells, held to each other by a delicate mesh-work of white fibrous and elastic tissue, nerve fibrils, lymphatic and blood capillaries. Let us pull or crush this tissue to the degree of tissue strain. What happens—the cells are ruptured and their protoplasm escapes, the fibers of connective tissue and the nerve fibrils are fragmented, and the blood and lymph capillaries are ruptured. Protoplasm, lymph and blood escape into and balloon out the interstices of the tissues, and the histological structure of the tissue has been reduced to a pulp. Animal cells have the characteristic of irritability and react greatly to such trauma. This physiological reaction leads to cicatrization throughout the damaged block of tissue, and its normal consistence will never be regained.

With this microscopic conception of the tissues let us think of what can be seen daily in almost every operating-room, and acknowledge to ourselves that there is far too much trauma. The eye specialist handles the eye carefully, and the

brain specialist handles the brain carefully, but the general surgeon often works away with an apparent oblivion to the fact that he is inflicting irremediable injury to the delicate live tissues in his grasp. One often forgets to gauge carefully the degree of force used in retracting or pulling tissues, and pulls even to the degree of macroscopic laceration. Gauze is harsh on tissues, and when we rub with it unlimited times in an effort to wipe up the blood, are we not unmindful that each time the tissue is sponged, trauma is inflicted? With blunt dissection, tissue is microscopically torn in a wide zone and is often picked and shredded to raggedness, even to the naked eye. Dull needles necessitate the use of an undue degree of pinching with forceps in order to hold the tissue for sewing. Dull knives and dull scissors do more damage than sharp ones, and call for more strokes. Hemostats are often used to grasp living tissues, and even skin. When we use hot sponges to stop hemorrhage, we are unmindful of the fact that tissues react to an excessive amount of heat. By poor team work, puttering and unskillful handling, the time of an operation may be so prolonged that the tissues are dried and suffer a long duration of trauma and exposure. Tremor makes trauma, and the trauma makes fibrosis. Tremor on the part of the assistant or operator, prevents accuracy and leads to a nervously moving field, loss of composure and repeated inaccurate strokes of the instrument. Last, but not least, much trauma is caused by repeated motions when one motion should accomplish the purpose. Fussy, aimless and ineffectual manipulations of the tissues result in countless repeated motions, and every impact means a traumatism. It is common to catch one's self groping for an idea by manipulating the tissues by letting the fingers precede the thought instead of the thought pre-planning the movements of the fingers.

Let us now consider ways and means of preventing trauma, so that infection may be lessened, so that fibrosis may be reduced to a minimum, so that the wounds will heal with the least amount of tissue reaction, and so that we will succeed in reconstructive surgery. All tissue, even if of such low dignity as skin, tendon or muscle, should be handled with as great an amount of gentleness and delicacy as practicable, even as one would handle a brain. Let the degree of force used be cultured and always below the degree that would cause microscopic tissue strain for that particular tissue. This necessitates a nice conception of the histological strength of the tissues. We should maintain a veneration for the tissues and keep our mind always on their post-operative reaction. In order to avoid the trauma of sponging a blood-pressure band should be used as a tourniquet in operations on the extremities, so as to have a bloodless field. It should be removed before closing and then after pausing long enough for clotting to occur in the small vessels, the remaining bleeders should be tied with double or triple 0 catgut. Scissors, knives and needles should not be boiled, as boiling dulls their edge. Tissue forceps should hold more by retracting than by pinching. Unless for special purpose, only pointed hemostats

should be used, so that the vessel itself will be caught, and not the surrounding tissue. Except for catching vessels hemostats should not be used to grasp tissue that is expected to live.

It is important to arrange the light to the best advantage, to make an adequate incision, so the work will not be hampered, and to make the complete length of the incision at the beginning of the operation, so as to have the maximum benefit of exposure. Time used in arranging parts for ease of work is well spent. The part operated on should be held in a plane perpendicular to the operative line of vision. Organs should be delivered, if possible, for greater ease of work.

The time of an operation should be reduced to a minimum. This can be done by developing team work, as the many tiny pauses caused by an assistant being just slightly behind, by his slow reflexes, and by the lack of anticipation, count up very appreciably. Hemorrhage causes much delay, but this can be more quickly controlled by remembering that exposure is the secret of catching a bleeding vessel. Knowledge of anatomy, the use of simple methods, and the avoidance of being dependent on assistants and the development of skill will help to shorten the time of operations.

One of the most important factors in atraumatic technique is conservation of movements. Let each movement be studied, pre-planned, purposeful, accomplishing its purpose in the single action, and not be repeated. There will then be the one impact, or traumatism, instead of many. All movements should be direct and to the point. In order to reduce the time, the excursion of the hand from one place to another should be rapid, but at the end of the motion, where the tissue is acted upon, the motion should be slower and under control. The motion should be cultured and with the maximum degree of gentleness that will accomplish the act. Thought should always precede the motion, and even go far enough ahead to anticipate the next motion. False motions are of no avail and only complicate a procedure and upset composure. Contrast the old-time pianist, who swayed his head and body and let his hands fly high in the air, with one of modern teaching, who sits balanced erect and stationary, and concentrates his whole attention on his only moving parts—his fingers. Watch a skillful mechanic at his work. He wastes no motions, and each one accomplishes what it attempts. How far behind the mechanics we surgeons are in this aspect of our work. In factories efficiency experts, in order to demonstrate the value of trained movements, have attached electric lights to the hands of an unskilled workman while he did his particular job, such as folding handkerchiefs. A moving picture was then taken and a manikin of wire was constructed, showing the actual excursion of the lights. After training the man to do the same job with the fewest and most direct motions, a similar manikin was made for comparison. Its simplicity and shortness of wire compared with the first manikin was, of course, a contrast, and the man could then turn out much more work in the same length of time and with greater ease. In order for us to master conservation of movements

in operating, we should practice it in everything we do in daily life, such as dressing and undressing, or working with our car. Why should we cultivate conservation of movement? It diminishes trauma, it reduces the time of operation, and this reduces the duration of tissue abuse. It allows one to complete more difficult and extensive operations than we otherwise could. It develops skill. The habit formed allows the mind to think on the more important aspects of the operation. It makes for composure; it allows slower and more accurate movements.

If each movement accomplishes something, and the movements follow each other in rapid succession, our operation will be finished in a very short time.

Another very important factor in atraumatic technique is to maintain a stationary field. This means the control of tremor, both on the part of the operator and the assistant. Some assistants are very nervous and impart a nervous tremor, choreiform in nature, to the field. When they move one hand they must move the other, or even their head and feet. They fairly gesticulate with the operative field. This uncertain jogging, or vibrating of the field, makes it impossible to do accurate work. One never knows where the knife edge, hemostat or needle will meet the tissue. If the amplitude of the vibration be three mm, how impossible it is to be accurate within one mm. The miss of the instrument is equal to the amplitude of the jog. He is trying to do the impossible. Uncertainty is brought in. His composure is upset, and soon all in the room become irritated. Usually, the operator is not aware that it is the moving field that is causing the trouble. When two objects are moving, accurate connections cannot be made. Let a person attempt free-handedly to pass thread through the eye of a needle that another person holds also free-handedly. Their combined tremors make it impossible. In operating, if one is moving, the other should remain motionless. To test one's tremor, hold free-armed before one a pin in each hand, so that the points remain one mm apart and the two pins form a straight line. To record a tremor, let one with a braced ruler slowly rule a line across a piece of cardboard held free-handedly by the person to be tested. The deviation of the line from a straight line will give a record of the tremor. Tremor and a moving field account for many an inaccurate and repeated motion in surgery, thus adding materially to the trauma. Tremor may be controlled by bracing, relaxation and poise.

In order to see how the jeweler does his fine work I went through one of their manufacturing houses, and what I saw can be applied to surgery. The jeweler sits balanced on a stool. He wraps his legs about the stool. With this foundation he braces his elbows against his body, or his bench, and rests his forearms on two rollers which project five inches from the edge of the bench. There is out-jutting from the edge of the bench a piece of wood on which his hands are braced. The piece of jewelry is steadied in a notch in the wood. He eliminates tremor by this elaborate system of bracing. He magnifies his

accuracy through lever action. Using his braced fingers as the fulcrum, the point of his instrument can be very accurately controlled by concentrating on the movement of the end of the long lever arm, his elbow or shoulder. Similarly the artist uses his mallet stick. With these principles, the surgeon in using such as scissors or hemostat may brace, with an extended finger, with his forearm, with his other hand, and etc.

The basic thing in the art of movements of skill is relaxation. The whole body is put in relaxation, and the only part that moves is that part required to execute the movement. In addition to relaxation the whole body is also put in poise. This is balance. Motion with the hands loses its refinement if the back is off balance, with the consequent strain on the back muscles subconsciously diverting our attention or effort. With the body in relaxation and poise, our attention to it is then relieved, and 100 per cent of our attention or effort can be concentrated on the movement of the hand. If now we brace down on some of the fingers our whole amount of effort and attention is concentrated to just that part which is distal to the last brace. In this way we can use the maximum amount of refinement in the motion, and the tremor can be avoided.

If a Wolfe graft is not handled atraumatically, that part of it which has been abused, turns black with necrosis towards the end of the first week. If the delicate membrane (epitenon) about a tendon becomes scratched, an adhesion between the tendon and its sheath forms at this point, preventing function. If nerve suture is not done atraumatically, fibrous tissue will form between the two ends and around the junction tightly encircling it and preventing regeneration. If trauma is used where grafts are placed, serum forms about the grafts. This becomes infected and the grafts slough out. If infection does not occur, the tissue reaction replaces much of the graft with scar tissue and binds it tightly. Many more disasters due to trauma can be cited, but suffice it to again state that unless we use an atraumatic technique, the higher surgery of reconstruction cannot be accomplished. If mastered, it will greatly facilitate the simpler forms of surgery and give not only an easier convalescence, but very little local reaction. The reduction in the amount of local reaction is surprising.

Atraumatic technique not only does much of what is claimed in anoci association, but has the advantage of insuring an approximation to reactionless healing and in reducing infection. We refer to the art of surgery, so why not make it an art, and, like the artist, be engrossed in its handicraft?

516 Sutter St., San Francisco.

ACUTE BRAIN INJURIES

By THOS. O. BURGER, M. D., F. A. C. S., San Diego.

Injuries of the head do not decrease perceptibly in spite of the "safety first" propaganda. There has also been an alarmingly high death rate until the past few years, but improved diagnostic methods, better judgment as to what cases are operable, and still better technique have reduced the

mortality from 53 per cent to 15 per cent or 28 per cent, depending on clinics.

The *acute abdomen* is probably considered the field of medicine where most skill, the application of more auxiliary methods in diagnosis, the most needed place for the use of surgical judgment, and often the occasion where real courage in certain forms of treatment is demanded. I feel that the *acute head injury* is a close competitor to the *acute abdomen*, if it does not surpass it, in its need of all the essentials mentioned for the former, to make life-saving and the future normality of the patient.

The reason for the high mortality and poor functional results have been, that many cases were operated unnecessarily, others have been operated at the wrong time, and there have been failures to operate still others that could have been saved by surgery.

Therefore, the three factors that are responsible for the great reduction of mortality and the giving of more nearly normal patients following these injuries, are as follows:

1. Determination of whether the patient should be operated or treated expectantly.
2. If there is surgical intervention—the selection of the proper time.
3. The type and technique of the procedure.

We know that a large group of these injuries recover under proper medical observation and treatment. Also a smaller group will die whether operated on or not. A third moderately large group will be saved by operating on them at the proper time and manner, or lost by letting that opportunity pass, or else having a recovery with a patient who has headaches, mental and emotional disturbances or psycho-neurosis.

Therefore, it is seen that it is in this latter group where preventing deaths and securing future normality is to be obtained.

These cases are the ones that demand the most skill and closest observation by the doctor as well as an intelligent nurse to determine the condition or stage of the patient. I will enumerate the symptoms and signs of "Acute Brain Injury," emphasizing and dwelling on those of proven value. Those to watch—and it is best to instruct the nurse as to their meaning and value—are:

1. General symptoms: Headache, nausea and vomiting.
2. Local signs: Ecchymosis, bleeding from eyes, nose, throat and ears.
3. Local signs: Shock, temperature, pulse rate, and quality, respiration, blood pressure, paralysis, impaired sensations, unconsciousness, restlessness, convulsions, reflexes, pupillary changes and urinalysis.

Special study of the following will be dwelt on, viz.: First, X-ray findings of the bony injury of the skull. No doubt much unnecessary surgery and vice versa, the failure to operate is due to the X-ray report. Many cases are frantically rushed to the operating-room for trephine because of a report of vault fracture, without regard to the question of shock or whether the important member, the brain itself, is being damaged. The skull is not the object here, but the

result of the fracture on the brain as regards direct trauma or its effect on intracranial pressure. The X-ray of the skull is of value, but is secondary to the structure it houses.

The second of the special studies of signs is a competent ophthalmoscopic report of the fundus. Beginning papiladema, if studied carefully and frequently, is a very accurate estimation of the beginning and increasing intracranial pressure and should never be omitted in studying these cases.

The third, and probably most important of all findings, is the spinal puncture which may be of value in discovering blood in the cerebro-spinal fluid, and the pathologist may make other tests, such as cell counts, etc., that are of determining value. The one most crucial test is the estimation of the increased intracranial pressure. This may be estimated by the rapidity with which the fluid spurts out, but is best and most accurately measured by the spinal mercurial manometer. (Instrument exhibited.) It has been found that an adult patient, reclining, has a normal pressure of from 5 to 9 m.m. of mercury, and pressure above that means increase of the intracranial pressure, especially if it shows 12 m.m., or more.

While considering spinal puncture, it is well to add that there is a real danger of compression of the medulla in the foramen, although it is only in a very small per cent and usually in those with very high pressure, and particularly in the cases with subtentorial pressure. There have been a number of necropsies showing a "collar" of the medulla from this source. This should always be thought of, and if there is a high pressure the tube may be compressed and the fluid allowed to flow out very gradually, and in that way the danger is avoided.

The neurologist should always be an important member of frequent consultations in these cases, especially the ones in the questionable class.

The increase in our knowledge in the past few years of what goes on in the brain has much improved our results in treatment, and a few words as to the increase of intracranial pressure is permissible. We know that many cases of head injury without bone fracture are as serious as if a fracture existed, as when due to concussion or a hemorrhage which may occur either epidurally and cause serious conditions. There may be no demonstrable damage to any structure, and yet a wet brain with its increase of pressure may cause death by medullary compression and edema. Or, we may have prolonged increased pressure that so damages the brain tissue that connective tissue is developed and the patient is the typical post-traumatic psycho-neurotic, with the headaches and emotional and mental symptoms that are so frightful. Many of these may be saved, and death prevented by proper treatment at the proper time. We must also keep in mind the fact that some of the supposedly slight concussions may develop any or all of the above conditions, just as some apparently very serious cases may clear up rapidly and permanently.

TREATMENT

First remember that about 60 per cent of serious head injuries have shock, also that about 10

per cent of them will die in shock, so that proper early treatment of the patient may do much in lowering mortality.

Quiet and *heat* are our best remedies—which means that if the patient can be put easily in a warm place and not molested, he is better off than if he is madly rushed to the hospital without consideration of his bodily temperature, shaking up and, etc. Stimulants, camphor in oil, etc., may be used, and morphine is often excellent as in any kind of shock and is not contra-indicated as was once thought. Hot coffee per rectum is also good, but do not over-stimulate as the patient comes out of shock for fear of increasing an intracranial hemorrhage.

Later we may use catharsis and an ice cap with absolute quiet. Some think that atropine in large doses prevents pulmonary edema, and sedatives for restlessness are, of course, desirable.

Aseptic care of any wounds is imperative, though sterile gauze over the ears is often less mischievous than efforts at cleansing the canal when cerebro-spinal fluid has shown that an injury there connects with the cranial cavity.

Lumbar puncture has a place in reducing pressure of the brain, and may be repeated a reasonable number of times.

A trephine to elevate or remove a depressed vault fracture may be demanded, but should often be secondary to a subtemporal decompression, especially if the fracture is over an important area of the brain and if there is, or is likely to be, increased intracranial tension. Rapid herniation of brain substances may mean disaster, and later herniation with the horrible fungus growth is a calamity the surgeon wants to avoid.

Subtemporal decompression is the greatest boon to this class of cases, and has become in the past few years so perfected and standardized that it is safe and of inestimable worth. Some of its advantages I will quote from "Sharpe's Brain Injuries."

1. "It exposes as widely as necessary, a comparatively 'silent' area of the brain, the temporo-sphenoidal lobe and, therefore, any operative damage to the exposed cortex will not appear clinically; also, in patients having a high intracranial pressure the danger of a hernial protrusion of a highly-developed area of the brain with resulting paralysis, etc., cannot occur.

2. "Being situated midway between the frontal and occipital lobes, it permits the careful exploration of all parts of the ipsilateral hemisphere and ventricular puncture, as well as permanent drainage, is also possible.

3. "It exposes the area of the middle meningeal artery, so frequently injured in the traumatic cases, and also affords excellent drainage to the middle cranial fossa at its lowest point—a very important factor in the treatment of brain injuries.

4. "A firm closure of the decompression opening is obtained by means of the strong temporal muscle and its overlying fascia with its strong attachment to the parietal crest intact—a most important requisite in patients having a high intracranial pressure. Hernial protrusions with their frightful fungi are most rare.

5. "Technically, the operation is less difficult than other cranial operations in that the skull opening is made through the thinnest area of the vault—the squamous portion of the temporal bone.

6. "The vertical incision is preferable to the former curved one in that it renders more possible a careful hemostasis of the scalp by means of the method of bi-manual pressure-traction and the clamping of the main branch of the temporal artery at the very beginning of the operation, whereas the curved incision passes through the various branches of the vessel in the scalp, and they must be clamped individually. Again, the vertical incision not only permits drainage at the lowest point of the skull, but it makes possible a large subtemporal bony opening without risk of loosening the attachment of the temporal muscle and fascia to the parietal crest, insuring a firm closure with no danger of cerebral hernia.

7. "The great frequency of temporo-sphenoidal lesions such as tumors, abscesses, and brain injuries make this routine exposure of the subtemporal decompression a most important aid in the treatment of underlying intracranial lesions."

SOME PRACTICAL POINTS IN RESUME

In the past, and even now, in many places, a suspected head injury is treated only from the standpoint of skull fracture. If an injury to the bony vault is demonstrable, surgery is at once resorted to, whereas if no fracture is found, or if there is a basal fracture, the case is often hopelessly abandoned.

In these injuries about 60 per cent are in shock, and about 10 per cent will die while in shock.

Study of the eye grounds and spinal puncture, with determination of the increased intracranial pressure, are the two crucial tests in determining the condition of patient.

Kocher, many years ago, made observations and recognized four stages from treatment standpoints.

First stage of compression—Medical expectant treatment.

Second stage of compression—Ideal operative stage.

Third stage of compression—Imperative operative stage of medullary compression.

Fourth stage of compression—Non-operative or hopeless stage of medullary edema.

It is imperative not to operate in shock or in the late stage of medullary edema.

Vault fractures often are best done secondary to a subtemporal decompression.

Increased intracranial pressure is the principal criterion as to the necessity for surgery.

Subtemporal decompression should be more frequently done.

Read March 8, 1921.

THE NEUROLOGICAL ASPECTS OF VISCEROPTOSIS.*

By THOMAS G. INMAN, M. D., San Francisco.

Visceroptosis, not infrequently discovered accidentally in the course of the routine examination, may be present in a marked degree without, apparently, causing a single subjective symptom. Attention is attracted to the alimentary canal be-

cause of the presence of other local conditions such as constipation, indigestion, meteorism or mucous colitis and it has been customary to associate with the visceral ptosis certain distant symptoms, referable especially to the nervous system. Of these, weakness, nervousness, vertigo, syncope and insomnia are said to be the most frequent. It is extremely doubtful, however, if any one of these symptoms may truthfully be said to be due to the ptosis alone. Undoubtedly the whole question has been somewhat clouded by a lack of appreciation of the fact that the individual of the so-called enteroptotic habitus and the otherwise normal individual with more or less visceral ptosis belong in two widely separated groups. In the former or congenital type there is especially noted the long, narrow thorax, the small, central heart, small lungs, pouching of the lower abdomen and faulty station. The respiratory excursion is shallow and costal in type and sudden calls for exertion are attended by an abnormal increase in the pulse rate. Yet, these individuals, in the absence of the interpolation of local or general disease, may go through life without suffering in the least from any symptom referable to their physical defect other than a somewhat limited supply of reserve energy. They early learn to adapt themselves to their capabilities and thus escape that extreme exhaustion which is often the starting point of the train of symptoms which makes these cases familiar to us all.

Individuals in the other group, in which visceral ptosis is to a greater or less extent acquired, always present concomitant disease. These are the cases with relaxation of the abdominal walls, lacerated perineal, lowered position of the hollow viscera as a result of adhesions following inflammatory conditions of the lower abdomen and diminution of visceral and somatic muscle tone following local or general diseases of a toxic nature. It is in this type that recognition of the true clinical picture is attended with difficulty and the real condition is often overlooked because the attention is directed to the accompanying pathology. Too, these patients, habituated to other conditions of health, cannot accept their disability as the natural consequence of an inherent physical trait and there arise abnormal mental attitudes which add to the difficulties of diagnosis and treatment.

Some twelve years ago my attention was drawn to this subject following the description in the literature of a number of operations for the relief of ptosis and excessive mobility of one or another of the abdominal organs. Experience showed that the mere elevation and fixation of a viscus seldom relieved the patient of the symptoms which led to the performance of the operation. Some investigations were undertaken at that time in collaboration with the late Dr. Fayette Watt Birch to determine if other factors were not essential to the syndrome credited to visceroptosis. The results were collected and published in 1912 under the title, "Blood Pressure Observations on Patients with Relaxed Abdominal Musculature."¹ The conclusions arrived at were briefly as follows:

* Read before the San Francisco County Medical Society, April 12, 1921.

¹ The Journal of the American Medical Association, January 27, 1912; vol. 58, pages 265-268.

1. Uncomplicated visceroptosis causes no symptoms.

2. Nervous symptoms such as weakness, dizziness and fainting are the result of cerebral anemia brought about chiefly by interference with venous return from the abdomen and lower extremities, a condition depending, in part at least, upon a disturbance in the normal reciprocal action of the diaphragm and abdominal muscles.

3. Observations of the blood pressure in cases without symptoms may show an abnormal drop in the systolic reading on standing after lying.

4. In cases with cerebral symptoms there will be found a fall in the diastolic as well as the systolic pressure on standing after lying.

Among medical men it is generally believed that these patients rather tend toward the neurotic type and that nervous symptoms are frequent accompaniments of the disorder. In my own mind the impression has grown that there was an enteroptotic syndrome. It seemed that there were frequent complaints of inability to stand well; that in the inactive vertical position there was likely to be an intrusion of subjective sensations of weakness, dizziness and faintness. Many of these patients state that they cannot watch parades, visit exhibitions or stand while having a dress fitted without being threatened with a fainting spell. A reference to the recorded complaints in large groups of cases, however, does not aid materially in the building up of a constant syndrome.

Certain complaints referable to the nervous system recur frequently in the histories of all chronic cases regardless of whether the nervous system is or is not affected to an extent recognizable by ordinary methods of examination. Thus in one thousand cases examined by the Diagnostic Group at St. Luke's Hospital of four frequently occurring complaints nervousness was given in 51 per cent, depression in 20 per cent, weakness in 17 per cent and sleeplessness in 7 per cent of all cases. In the same group a diagnosis of visceroptosis was made 151 times, in forty-two cases this was the primary diagnosis and together with closely associated conditions was assumed to explain the major complaint. Of the forty-two cases the primary complaint was directed to the stomach in 48 per cent, to the intestines in 31 per cent, to nervousness in 12 per cent, to weakness in 12 per cent, to fainting 4.5 per cent and to dizziness 2.5 per cent. In the secondary complaints nervousness occurred in 80 per cent, weakness in 38 per cent, depression in 31 per cent, sleeplessness in 26 per cent. Comparing these figures directly for four complaints will show some variation though perhaps an immaterial one.

For example: Nervousness was recorded in 80 per cent of the Ptosis cases and in 51 per cent of all cases. Weakness, 20 per cent of the Ptosis cases, 17 per cent of all cases. Depression, 45 per cent of the Ptosis cases, 20 per cent of all cases. Sleeplessness, 8 per cent of the Ptosis cases, 7 per cent of all cases.

Fainting was recorded eleven times in the 151 patients. There were thirty-four females in the forty-two cases and eight males, the youngest was

twenty-two years of age and the oldest sixty-nine; average age, forty years four months.

In a condition where disturbances in the circulation are charged with bearing some of the burden of the symptomatology, it would seem that there might be something of interest in an examination of the blood pressure determinations. In forty-two cases the lowest pressure was 90/40 and the highest 178/86. The average systolic was 113, the average diastolic 72.4. Certainly, in the type of case here presented with an average age of forty years and with arterio-sclerosis occurring as a secondary diagnosis thirteen times these pressures are notably low.

Support of the statement that the visceroptotic seldom seeks medical relief until some other pathological condition becomes an added factor will be seen by reference to the diagnoses. Of the forty-two cases in which ptosis was the primary diagnosis and was believed to best explain the major complaint, in only two cases was the visceroptosis the only reported finding. But there were an additional seven cases in which there were no other findings referable to the alimentary canal. Associated conditions directly affecting the digestive apparatus occurred as follows—mucus colitis in 40 per cent, spastic colon in 36 per cent, constipation in 36 per cent and hemorrhoids in 12 per cent. Sources of focal infection occur frequently. Thus the teeth were involved in 45 per cent, the tonsils in 38 per cent and the prostate in two cases. Other diagnoses included pulmonary tuberculosis seven times, arterio-sclerosis thirteen times, arthritis seven times, lacerated perineum seven times. Toxic cardiopathy, neurasthenic state, vasomotor instability and poly-glandular dystrophy were diagnosed each three times.

With several of these pathological conditions existing in the same individual it may appear as if assuming too much to place the burden of the major diagnosis upon visceroptosis, but this has always been done with due respect to the mildness of the associated conditions, to the grouping of the symptoms about the gastro-intestinal tract and an accompanying lack of abdominal muscle support to the splanchnic circulation.

It is undoubtedly true that nervous symptoms frequently depend upon the type of individual concerned and that somatic pathology produces reactions in the psychic sphere in accordance with the already existing mental content. The constant inflowing of abnormal sensory impressions from the great gastro-intestinal field, the subjective sensations of weakness and depression, due on the one hand, to faulty nutrition and on the other hand to an inadequate blood supply to the brain, may be said to account in large part for the mental symptoms so frequently complained of by these patients and which causes them so often to be classed with the neurasthenics. But in the proper interpretation of the whole clinical picture the neurological aspect cannot be separated either in diagnosis or in treatment and for complete results in therapy care of the nervous symptoms must go hand in hand with the treatment of the somatic pathology.

1168 Flood Building.

Book Reviews

The Roentgen Diagnosis of Diseases of the Alimentary Canal. By Russell D. Carman, M. D., head of Section of Roentgenology in the Division of Medicine, Mayo Clinic, and Professor of Roentgenology (Mayo Foundation), Graduate School of Medicine, University of Minnesota. Second edition thoroughly revised. Octavo of 676 pages with 626 original illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$8.50 net.

This book is a complete and exhaustive study of gastro-intestinal diseases from the viewpoint of the roentgenologist.

Not only are the various diseases treated in full, but a great deal of attention is paid to the variation in the position, size, and shape of normal stomachs. It contains all the good features of the first edition and, in addition, has been brought strictly up to date. There is an addition of two new chapters, one on hour-glass stomachs, in which a careful differentiation is made between spasmodic and organic hour-glass stomachs, and the second on pneumoperitoneal diagnosis of the abdominal region. In this latter chapter, the author has carefully pointed out the dangers and contra-indications, and sounds a note of warning that it should be used only as a last resort.

The author, perhaps, has a better opportunity of checking his roentgen diagnosis in the operating-room and at post mortem than most roentgen-ray workers. He is frank in calling attention to his mistakes as well as mentioning his confirmed diagnosis.

Certainly, no one should attempt to make roentgen diagnoses of gastro-intestinal lesions without the aid of this very excellent book.

L. B.

A Text-book of the Practice of Medicine, by James M. Anders, M. D., Ph. D., LL. D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Fourteenth Edition. Thoroughly Revised with the Assistance of John H. Musser, Jr., M. D., Associate in Medicine, University of Pennsylvania. Octavo of 1284 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1920, Cloth, \$10 net.

The steady progress of its editions indicates the deserved popularity of this text-book. Such books, even with the skilled condensation of the present volume, must increase in bulk, so wide is their range. Here the compression is judiciously done, the student will find all essentials of practice, and the index is good.

Much recent work is reviewed, and due importance given to new work and its bearing on scientific medicine; sections on treatment are brought up to date and adjusted to present knowledge. Room has been made for a fuller discussion of diseases such as typhus, cerebrospinal meningitis, etc., that have acquired more importance during the world war, and there is a careful appreciation of the relation of asthma, etc., to foreign protein. Other sections have been rewritten, and there are new articles on botulism, streptococci (hemolytic) pneumonia, trench nephritis, wood alcohol poisoning, etc., etc. It will be seen, therefore, that the work is maintaining its well-known standards, and that it offers to the student and practitioner a very complete resumé of our present knowledge of medicine.

H. A.

Psycho-Pathology, by E. J. Kempf, M. D., St. Louis: C. V. Mosby Company, pp. 762, 87 illustrations. 1920.

"Ceci est un livre de haute digestion, pour l'estomac des Pantagruelistes et non autres."

The unrest and the rebellion of the times show themselves in divers ways. As there are Bolsheviks in Politics, Vers libristes in Poetry, and Tactilists in Art, so there are Freudians and Ultra-Freudians in Psychiatry. The curious amateur is captured by the apparent simplicity of the fundamental idea. All one has to do is to refer all the psychoses and neuroses to a sexual basis. It's as easy as vers libres or a cubistic bust.

But in spite of this apparent simplicity, there seems to be great difficulty in making one's self clear. The reader plows through pages and pages, emerging finally so obfuscated that he wonders if he is afoot or a-horseback. Ideas there are in plenty, and some of them good ones. One cannot but admire the time and labor that has been spent on the work and the keenness with which certain traits in the individual or points in the history have been seized upon, but the jumbled-upness and the truly Teutonic muddiness of expression leave one bewildered at the end.

There are some remarkable interpretations of ancient and modern works of art. In Boeklin's Todesinsel, for example, the masses of rock on either side the cove symbolize the thighs, the cypresses, the pubic hair, and the gateway the vaginal opening. There is also the striking discovery that Darwin's lifelong ill health was traceable to masturbation, probably aggravated by that five-year voyage in the Beagle. Even to one long-used to Freudian Deutungen, there is a kick coming in the pages of Kempf.

E. W. T.

The Anatomy of the Nervous System, from the standpoint of development and function. By Stephen W. Ranson, M. D., Ph. D., Professor of Anatomy in Northwestern University Medical School, Chicago. Octavo volume of 395 pages with 260 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$6.50 net.

This is a text-book presenting the anatomy of the nervous system from the developmental and functional point of view. Students find a study of structural details by themselves difficult; but when considered in connection with physiology they become interesting. The subject matter is well arranged for the medical student. Difficult conceptions are made clearer by numerous diagrams.

The conduction pathways, so difficult for students to visualize, are shown in numerous drawings. The illustrations are well made and carefully labeled. In fact, every device is employed, which will give the student a mental picture of the subject. A carefully selected bibliography adds much to the value of this work as a text-book.

The author presents his evidence in favor of the unmyelinated fibers of the spinal nerves and dorsal roots as the pain fibers. This is a new conception of the mechanism of pain conduction. The sympathetic system is treated in conformity with the newer ideas based upon its relations to the cerebrospinal system, particularly the vagus nerve. The autonomic nervous system as a functional division of the nervous system is treated in detail, and its important conduction paths outlined. An innovation in a work of this nature is a consideration of important reflex mechanisms, as, for example, in respiration and coughing and vomiting; these reflex arcs are well diagrammed.

The book, on the whole, is an up-to-date exposition of a very difficult subject in medicine, and it should facilitate for students visualized anatomy.

Correspondence

THE AIRPLANE WAITS

April 9, 1921.

Dr. Harlan Shoemaker, Sec.-Treas.,
Los Angeles County Medical Association,
Marsh-Strong Building,
Los Angeles, California.

Dear Sir:

Pursuant to our telephone conversation, I am writing you the arrangement I made with Henry Fisher, Jr., of the Mercury Aviation Co., Crescent and Wilshire blvds., telephone 567363.

That their five-passenger, all-metal monoplane, with two pilots, make the following schedule, daily, May 10, 11 and 12, 1921:

Lv. L. Angeles 7:00 a. m. Ar. S. Diego 8:30 a. m.
Lv. L. Angeles 12:00 a. m. Ar. S. Diego 1:30 p. m.
Lv. S. Diego 9:30 a. m. Ar. L. Angeles 11:00 a. m.
Lv. S. Diego 4:30 p. m. Ar. L. Angeles 6:00 p. m.

The fare one way will be \$20, round trip \$35. The plane leaves Mercury Field, Crescent and Wilshire blvds., Los Angeles, and arrives at North Island, San Diego, the Government permitting us to land on its field, which is close to the Coronado Hotel.

I have been riding in this plane considerably the last six months and know that it is not only a first-class ship, but also that it is well handled, absolutely no stunts are allowed. I feel that the words, "Medical Society," should be painted on the lower side of the wings as large as the space will permit.

Seats not taken by the doctors after May 8 will be offered to the public; naturally the doctors will not wish to return the first day, nor leave on the last day.

The little flying I have done has made me an enthusiast on civil or commercial flying; also brought me to the realization that we in Los Angeles who, because of our climate, should lead the world, are way behind the Europeans, where they have already aeroplane strap-hangers. If you will refer the doctors to me I will be glad to explain anything I can, also receive their reservations for the proposed trips. I am satisfied it is safer than by auto and more comfortable.

Yours by way of the air,

P. C. H. PAHL, M. D.

County Societies

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held at the Alameda County Health Center on the evening of March 21. Dr. Frank Baxter arranged a very interesting program upon subjects relative to the eye, and lead the discussion of the following papers: "The Relation of the Eye to General Practice," presented by Dr. R. J. Nutting; "A Case Report of Detached Retina," read by Dr. J. W. Calkins, and "The Treatment of Cataract by Radium," read by Dr. Wm. H. Sargent.

On April 12 the Alameda County Medical Association will entertain at luncheon at Hotel Oakland as their guest of honor, General John M. T. Finney, Clinical Professor of Medicine of John Hopkins University, and Chief Surgical Officer of the A. E. F. in France during the war. This promises to be a very interesting meeting, and more than usual interest is manifest by the fact that already one hundred and fifteen favorable answers have been received to the invitations.

Dr. John L. Lapp, LL. D., managing editor of Modern Medicine, is to speak upon "Industrial Medicine," following a dinner at Hotel Oakland on the evening of April 14, given by the Alameda County Health Center.

The March meeting of the staff of Merritt Hospital occurred on the evening of Monday the 7th. Dr. James Adams, late of the Boston Psychopathic Hospital, spoke upon "Differential Diagnosis in Psychiatry." Dr. Stewart Irwin spoke on "Disease of the Thyroid Gland." The meeting was followed by a very enjoyable buffet luncheon.

The annual staff banquet of Merritt Hospital was held at Hotel Oakland on the evening of March 24. Dr. H. N. Rowell presided as toastmaster, and introduced the following speakers: John S. Chambers, chairman of the State Board of Control; Joseph H. King, president of the Oakland Chamber of Commerce, and Fred Emerson Brooks, the California poet. A most enjoyable musical program was furnished by some members of the Bohemian Club.

On April 2, Dr. R. T. Legge responded to an invitation from the Southern California Medical Society to speak at their meeting in Santa Ana, upon the subject of "Socialized Medicine and Its Relation to the General Practitioner."

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held Tuesday evening at Hanford, as guests of Dr. C. T. Rosson, who entertained the society at a banquet at the Kings Hotel. The speaker of the evening was Dr. W. J. Stone, who spoke on the cause of death in pneumonia, with remarks on treatment.

CONTRA COSTA COUNTY

The meeting was called to order by Vice-President M. L. Fernandez at Richmond, Calif.

The minutes of the previous meeting were read and approved.

The resignation of Dr. O'Malley as president of the society was read and accepted by unanimous vote.

Applications for membership were received from Dr. W. S. George, of Antioch, and Dr. J. B. Blackshaw, of Pittsburg.

Owing to the resignation of Dr. O'Malley as president, Dr. Fernandez' name was proposed, and it was moved and seconded that the secretary cast the ballot.

The names of Doctors Peters, Coats, Finney and McKenzie were presented, who were unanimously elected to membership.

Clinical cases of trichiniasis were reported by Dr. Fernandez and Dr. Wetmore.

The paper of the evening was read by Dr. J. Marion Read, of San Francisco, on "Fundamentals of Clinical Calorimetry with Illustrations of Its Application." The author gave briefly the history of calorimetry, explained graphically the principals of the instrument used, and then showed the value of its use in differential diagnosis and in determining the progress of cases under treatment for hyperthyroidism.

LOS ANGELES COUNTY

The society has leased quarters in the Union League Club for the ensuing year, and the regular scientific meetings will be held there.

Dr. Edwin O. Jordan, of the Department of Hygiene and Bacteriology of the University of Chicago, addressed the society, his subject being, "Observations on the Epidemiology of Influenza." This was followed by an exhibition of diagnostic moving pictures, prepared under direction of Surgeon-General Merritt W. Ireland.

Dr. A. B. Cecil reviewed a series of one hundred consecutive perineal proctectomies, and in connection with this, favored the society with a preview of what is perhaps the most perfect cinema production of an operative procedure ever made. It is to be regretted that the length of

this report, and the time necessary for production of the moving pictures, prevent its presentation before the State Medical Society. An additional section of the society, to be known as the Trudeau Tuberculosis Section, has been admitted to membership. The officers for the ensuing year are Dr. Charles C. Browning, chairman; Dr. Leon Schulman, vice-chairman; Dr. William C. Finch, secretary-treasurer.

The uneasy head which wears the crown of Surgeon of the Receiving Hospital has again been laid low. Dr. Stadfield, who has merited much praise during the past three years for his capable service and devotion to duty, was relieved of his position by the City Council, and Dr. Goodrich, who has been serving as an assistant surgeon, was appointed chief of the service. It is understood that the latter appointment is a temporary one, and that a movement is on foot to place the Receiving Hospital under the charge and supervision of the City Health Commission. A solution of the problem in this way seems logical, and would probably result in much benefit to the community and satisfaction to the medical profession.

Marking the culmination of five years' devoted service on the part of its President, Maud Wilde, the Association of Mothers' Educational Centers held its annual Baby Week Program on March 28 to April 1. During the past year, twelve thousand mothers and their children have availed themselves of the free service so willingly extended by these centers. Dr. Wilde has been chiefly instrumental in establishing twenty-four branches in Southern California, and the benefits to be derived by the future generation are incalculable. This work has the unqualified support of the medical profession.

MENDOCINO COUNTY

A regular meeting was held at Fort Bragg on April 8, 1921. Present: Dr. H. H. Wolfe, president, and Drs. Royal Scudder, Raymond Babcock, Harper Peddicord, C. L. Sweet, P. J. Bowman, and O. H. Beckman, members.

Minutes of the yearly meeting were read and approved, as were also those of the special held at Fort Bragg on March 26.

The special was called to act upon several communications from the State Secretary's office, and which could not wait. At that special a resolution was passed that, if approved by the State Secretary, Drs. Paul J. Bowman and Royal Scudder would be declared members on payment of their dues.

A motion by Dr. H. Peddicord, and seconded by Dr. F. McL. Campbell, that a committee be appointed to take up with the supervisors about the care of tuberculosis in this county, carried.

Program—Dr. Bowman reported an interesting case of hydrocephalocele, at birth. Parturition occurred on February 6, 1921. Breech presenting. Delivery difficult; child otherwise normal. Tumor was connected by a fibrous peduncle of $3\frac{1}{2}$ c. m., just below the external occipital protuberance. On February 11, it was tapped and 650 c. c. of a sero-sanguinous fluid let out. On February 28, the child being otherwise normal, the tumor was again tapped and yielded 450 c. c. of fluid similar to first tapping; then it was amputated near its base.

Its wall consisted of skin, fascia and pia, but no dura-mater. From a 2 c. m. opening in the skull, a typical embryonic brain tissue, the size of a hen's egg, was protruding. After amputating this mass, the child's condition became grave. It never rallied, and died one hour after operation.

Dr. Babcock exhibited X-ray burns of both hands, and gave a very interesting talk on the subject.

Dr. Scudder reported a case of paralysis of the lower extremities following childbirth. The doctor gave a very interesting description and talk on it.

The next meeting will be held at Ukiah in June.

SAN DIEGO COUNTY

Everything is set for the best State medical meeting California has ever held. Let the Golden Poppy Jubilee be something to be remembered by all. The local committee of arrangements consisting of L. C. Kinney, M. D., chairman, P. M. Carrington, M. D., and Paul Wegeforth, M. D., ably assisted by a corps of lieutenants, have planned and worked unceasingly through the past few months to make this event a social as well as a scientific success.

The San Diego County Hospital, accredited as a standardized hospital by the American College of Surgeons, extends an invitation to visiting doctors to inspect its equipment and workings. This included the Vauclain Hospital for the tuberculous in the immediate vicinity of the general hospital.

A well-managed training school for nurses is conducted in connection with the hospital. Applications for the nursing course should be made to Mrs. L. E. Jackson, superintendent of nurses.

A new horizontal fluoroscopic table was recently purchased for the X-ray department.

About fifteen members of the county society motored to Santa Ana to attend the Southern California Society meeting, April 1 and 2. They were awarded by a program of unusual excellence and breath of interest.

St. Joseph's Hospital is steadily advancing in its standardization program, the staff having established monthly meetings for routine business and the discussion of interesting cases occurring in the wards. Dr. O'Neill, as head of the executive council of the medical staff, makes a capable and energetic officer.

Recent meetings of the society have furnished some excellent discussions of papers well meriting the same by their able presentations. We mention the following as being particularly practical: Dr. J. F. Churchill's paper of March 22, on "Angina Pectoris and Pulmonary Edema"; and Dr. C. M. Fox, on the same date, on the "Treatment of Lung Abscess"; Dr. T. F. Weir, on April 12, "Induction of Labor at Term," and Dr. V. G. Clark, on the same date, "Post Operative Abdominal Pain." The system of printing a synopsis of the papers in advance of the meeting is proving distinctly stimulating to the discussion.

SAN FRANCISCO COUNTY

During the month of March, 1921, the following meetings were held:

Tuesday, March 8, 1921—General Meeting.

1. Smallpox situation. Wm. C. Hassler.
2. Diagnosis and treatment of smallpox. R. W. Burlingame.
3. Diphtheria. E. C. Fleischner.

Tuesday, March 15, 1921—Section on Surgery.

1. The question of immediate trachelorrhaphy. L. A. Emge.
2. Skin grafting by some of the new methods. G. W. Pierce.

Tuesday, March 22, 1921—Section on Eye, Ear, Nose and Throat.

1. Cosmetic surgery of the nose and ears. Grant Selfridge.
2. Plastic operations on the eyelids and mouth cavity. G. W. Pierce.

With the aid of a gift from Dr. Adolph Barkan, emeritus professor of the Stanford Medical School, Stanford University is gathering in the Lane Library of the Medical School in San Francisco, a collection on the history of medicine that will be equaled by no other western institution.

Dr. Barkan will give \$1000 a year for the next three years, to which the university will be able to add from the income from certain Lane Library Foundations \$1500 a year, making a total fund of

\$7500, all of which will be expended on books concerning the history of medicine.

Dr. Barkan, himself, is now in Europe, and he has employed an expert and has also gained the assistance of one of the most celebrated professors in Europe to aid him in getting together this collection.

Dr. Barkan was professor of structure and diseases of the eye, ear, and larynx, in the Medical School, and retired from active teaching in 1911. He has before this been a liberal benefactor of the Medical School Library, having given his own library dealing with the subjects in his own special field, together with \$10,000 as a fund for the purchase of other books on these subjects.

PLACER COUNTY

The Placer County Medical Society held its regular meeting at the Colfax Hospital, Saturday evening, April 2, 1921. The program consisted of a pneumothorax clinic. The operation of pneumothorax was performed on two patients, and several cases illustrating partial and complete pneumothorax, hydrothorax and hydropneumothorax were exhibited on the fluoroscopic screen for the benefit of the visiting physicians.

Following the clinic, the regular business of the society was transacted and the meeting was adjourned.

SONOMA COUNTY

At the March meeting, a new constitution and by-laws for the society were adopted; the principle change being the establishment of an executive committee consisting of the president, secretary, and three members appointed by the president so as to represent the different sections of the county, and having the power to act for the society when expediency requires.

The society was invited to the home of Dr. J. W. Cline to celebrate his fortieth anniversary as a doctor. As a token of esteem the doctor was presented with a silver cup.

Immunity

The Journal will express no opinion of and assume no responsibility for the views of "Immunity" correspondents. They must win or lose on their own merits by abounding in their own wisdom, and each reader must appraise each communication for what it is worth and take it for better or worse.

Communications will not be signed when published, but the author must be known to the editor. Send on your complaints, your kicks, your knocks, your boosts. We want constructive and destructive criticism. Air your pet hobbies. You are not limited to your own town or the medical profession.

WHY! OH! WHY!

To the Editor: Two queries have been propounded in the surgeons' dressing rooms of the Hospital of late.

(1) Why, or what has discouraged the appearance of the free lunch-stand at the County Medical meetings? With the lunch we were always sure of having an evening not entirely wasted.

(2) Does the hospital pay rent for the lounging-room of the County Medical Society, to be employed by its lethargic nurses?

I, with others, would be pleased to hear the answers.

Sincerely,
San Francisco, April 9, 1921. X. Y. Z.

St. Joseph's Hospital, San Diego

By C. E. REES, M.D.

St. Joseph's Sanitarium has been operated as a general hospital by the Sisters of Mercy since 1890, and has gradually been enlarged from an institution accommodating thirty-five patients to one accommodating one hundred and fifty.

The present hospital consists of three buildings. The main hospital building, comprising four stories, is the one in which all patients are cared for. The annex is a two-story building, the lower portion of which contains nurses' lecture hall and X-ray department; the upper floor contains the operating

rooms. This annex is connected with the main building by a corridor. The third building, a modern home for nurses, is situated about one-half block from the hospital.

The nurses' training school has at present about forty pupil nurses, under the direction of one of the sisters, who is hospital superintendent. The regulation three-year course is given and all sisters doing nursing duties are either pupils or graduate nurses. At the present time there are eighteen sisters who are registered graduate nurses of this hospital.

The main part of the hospital is segregated into three departments—the surgical, occupying two floors; medical, one floor, and obstetrical, one floor. Each floor is in charge of a graduate sister, and the general nursing is done by pupils.

The obstetrical department is very complete. The delivery room and nursery are each in charge of a sister and are well separated from the rest of the hospital. The delivery rooms will accommodate three labor patients at one time, and contain quarters for physicians.

The nursery maintains very complete records of infants; the foot-print identification method is used; one print being taken at delivery, and the second when the infant leaves the hospital.

The surgery unit is separated from the main building and is very completely equipped, having two large major operating rooms; two minor operating rooms; one dark specialty room, in addition to sterilizing room, nurses' room, doctors' room and quarters. The operating department is in charge of a specially trained surgical nurse, who has two graduate sisters as assistants. The last three months of the pupil nurse's course are spent in this department.

The laboratory is in charge of two pathologists who alternate services and who are employed by the hospital. The pathologist has two assistants—one a trained full-time technician, and the other a sister who is a graduate nurse—so that a laboratory assistant is always available for emergency work.

A two-dollar laboratory fee is charged each patient on admission; this fee covers charges on following laboratory work:

1st—Complete blood count and urinalysis, which is done on every patient as soon as admitted;

2nd—Any smears and culture which may be necessary;

3rd—Gross and microscopic examination on all tissues removed.

This is a routine procedure, and all tissue removed in surgery is sectioned. All other laboratory work is done at moderate fees, which are waived when necessary.

The X-ray department is operated by a Roentgenologist who has as his assistant a sister nurse who is available at all times. Fees for this work are at a moderate schedule, but are reduced or waived as the case demands.

All necessary work in this hospital is so arranged that the patient after admission may receive all of the benefits of the institution, regardless of his financial condition.

The record department is in charge of a specially trained sister, and all records are completed, filed and indexed according to name and disease.

The hospital requires of the attending physician a complete history and physical examination record of each patient within twenty-four hours after admission, and all surgical patients must have a written pre-operative diagnosis on their charts before they are anaesthetized.

The hospital has a regularly appointed staff, and any member of the medical profession who is in good standing is eligible to apply for appointment.

Staff appointment requires a pledge of members to observe rules and regulations of the hospital, which rules are essentially those established in the minimum standard of the American College of Surgeons.

BLOOD

| Date | Hb. % Dare | Red Cells | White Cells | Neutrophiles | Basophiles | Small lymphocytes | Large Monos and Transits. | Myelocytes |
|---------------|------------|-----------|-------------|-----------------------|------------|-------------------|---------------------------|------------|
| Mar. 29 | 70 | 3,456,000 | 74,000 | 3 | 0 | 96 | 1 | 0 |
| Mar. 31 ..... | .. | ..... | 69,000 | 2 | 1 | 65 | 30 | 1 |
| Apr. 2 ..... | .. | ..... | 2,400 | 5 | 0 | 84 | 10 | 1 |
| Apr. 3 | .. | 3,600,000 | 2,000 | Only lymphocytes seen | | | | |
| Apr. 4 | 45 | 2,810,000 | 600 | | | | | |

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series, Case No. 5, March 29, 1917. Male, American; age, nine years. No. 13,597. L. J.

Family History: Negative. Father and mother living and well. There are five other children living and well. One brother died; cause unknown.

Past History: He had most of the diseases of childhood. Since having measles, six months previous to entry he had been weak, and four months before entering hospital he had enlargement of the glands of the neck, which was accompanied by increased malaise. Blood examination at this time, done in the city in which he lived, showed increase in the total white count with a high percentage of lymphocytes. He was given X-ray treatments at this time with apparent improvement. However, six weeks after these treatments a swelling appeared on the left side of his neck accompanied by considerable temperature. This swelling became semi-fluctuant, and was opened and discharged a sero-sanguinous material. Following this he was slightly improved, but two weeks before entrance to hospital he began to lose strength rapidly. When he entered the hospital he was running a temperature of 38.8°C.

Physical Examination: Showed a poorly nourished, very pale, waxy colored boy. His head was held forward in a peculiar manner as if he were having difficulty in breathing. His voice was nasal and slurred; breath was foul, and breathing was entirely through his mouth. His mouth could not be opened very well because of marked enlargement of the cervical glands. His tongue was markedly coated. His whole posterior nasal pharynx was filled with putrefying material. Tonsils and pharynx showed ulcerated areas and the glands of all the superficial groups were enlarged, cervical, inguinal and axillary, discrete, firm and tender. His lungs showed slight apical dullness, with signs of enlargement of the bronchial glands. Breath sounds were harsh and there were many coarse, bubbling rales. The heart area was normal; the sounds were of very poor quality; there was definite hemic murmur. The abdomen was full, the liver outline was 10 cm. below the costal margin and extended across the epigastrium, and the edge was firm and slightly tender. The spleen extended in the line of the ninth and tenth rib, 9 cm. below the costal margin. The outline of the spleen could easily be made out; notch was distinct, spleen was firm but slightly tender. No other masses were felt in the abdomen. There was no free fluid in the abdomen. His skin was rather dry. Tissue turgor was poor, and there were numerous small petechiae over the lower extremities and back. Von Pirquet and Wassermann reactions were negative. Blood culture was sterile. The blood picture is the typical one of lymphatic leukemia, as follows:

Temperature during the week he was in the hospital, ranged between 39° and 41° C. He became gradually more toxic, and died a week after entrance.

Autopsy: Showed the usual findings of lymphatic

leukemia, with lymphocytic hyperplasia of the spleen and fatty degeneration of the kidneys, petechial hemorrhages beneath the pericardium and in the endocardium and ulcerative pharyngitis.

Discussion: This case illustrates three very important phases of lymphatic leukemia. First, the value of X-ray treatment: During the past few years X-ray treatment for lymphatic leukemia has developed to the point where it has become one of the most recognized forms of treatment. Either X-ray treatment, or better, radium treatment, where that is available, has a definite effect on the lymphoid tissue, and if applied early in lymphatic leukemia, will very often produce successful remission. In children the remissions are usually not very long, though in adults this form of treatment may be able to hold the condition in abeyance for months or even years if properly used. The X-ray treatment and blood picture should be paralleled, and undoubtedly, during the early stages of the disease such treatment will show a definite effect. In the later stages it has no effect and may, in fact, hasten the process.

Second, this case illustrates the final leucopenia, which at times develops in the course of the acute leukemia. This is to be interpreted as a failure of the blood-forming organs, a terminal aplasia developing.

Third, the septic appearance of lymphatic leukemia in its terminal stages: In the late stage there is no definite treatment. In this case indirect transfusions were given without any benefit either on the course of the disease or the blood picture. In the septic stage, X-ray or radium treatment are not indicated.

Prognosis: The prognosis in lymphatic leukemia in childhood is practically always fatal. The only hope in these cases is early recognition of the disease, and proper application of X-ray or radium treatment.

Proctologic Society

The American Proctologic Society announces the Twenty-second Annual Meeting, to be held in Boston, Mass., on June 3, 4 and 6, 1921. The profession is cordially invited to attend the public sessions. The meeting place will be the Boston Medical Library.

WISCONSIN HOME-COMING

The State Medical Society of Wisconsin will celebrate its seventy-fifth birthday by holding a "Home-Coming" meeting in Milwaukee, September 7, 8, and 9, 1921. All former Wisconsin men, whether they have practiced there or left Wisconsin to study medicine, practicing elsewhere after graduating, are invited to this home-coming.

The officers of the society are anxious to secure at this time for mailing purposes the names of all former Wisconsin men. They will confer a favor by sending their names and addresses to Dr. Rock Sleyster, Secretary, Wauwatosa, Wis.

Obituary



DR. STANLEY P. BLACK,
Los Angeles

Stanley P. Black, A. B., M. D., patriot, physician, pathologist, humanitarian, is dead. Perhaps no member of the profession in the last decade has left so indelible an imprint on the lives of the community in which he lived and worked as this earnest, hard-working physician.

Born in Omaha, Nebraska, August 21, 1859, he graduated from the Northwestern University in 1885, and after spending three years in Europe, he returned to take his degree in Medicine from the same institution. As an interne in Cook County Hospital, he came under the influence of Dr. Fenger, an association which was probably the determining factor in his life work.

He taught pathology, bacteriology in the medical school of Northwestern and in Mercy Hospital in Chicago. Coming to California in 1897, he immediately became a leader in the medical life of southern California. He served as health officer of Pasadena, California, for many years. Was professor of pathology of the University of Southern California Medical College during the entire period of his residence here.

Active always in professional and community service, he was one of the founders of the Clinical and Pathological Society, and was instrumental in the advancement of the Barlow Medical Library.

As teacher, consultant, adviser and friend, he lived up to the standard he set for himself. He will live long in the memories of his students, his associates, and his confreres in the profession.

Notices

IN HONOR OF MME. CURIE

The June issue of the Medical Review of Reviews will be a special radium number, dedicated to Mme. Curie. The issue will consist exclusively of articles on radium and its uses, written by the most prominent radiologists in the United States and Canada.

Copies will be sent complimentary to every physician interested in the uses of radium, and any readers of this item who desire that issue may have it by asking for it from the Medical Review of Reviews, 51 East Fifty-ninth street, New York.

International Union Against Tuberculosis Conference in London, July, 1921, Under the Auspices of the National Association for the Prevention of Tuberculosis.

The next International Conference will be held in London from July 26, to July 28, inclusive.

The conference will be open to members of the International Union against tuberculosis, and to delegates from countries within the League of Nations, and by the United States of America.

SPECIAL ATTENTION

The following communication has been received from John L. Flynn, Acting Collector of Internal Revenue:

Doctors, hospitals, and others required to register under the Harrison Narcotic Law have been under the impression that they have the months of June and July to register and pay narcotic tax. Such is not the fact. You must register in the month of June, or as the law states, on or before July 1, 1921, to avoid penalty. Doctors contemplating being out of the State during the month of June, communicate with the Narcotic Division of the Internal Revenue. Full information in reference to registration will appear in the June Journal.

JOHN L. FLYNN,

Acting Collector Internal Revenue, Custom House, San Francisco.

Beechler, James. Died in San Francisco March 22, 1921. Age 80 years. Was a graduate of the Eclectic Medical College, Pa., 1879. Licensed in California, 1895.

Case, Chas. Elijah. Died in Tacoma, Washington. Was a graduate of the California Medical College 1880, also College of Physicians and Surgeons, Chicago, 1886. Licensed in California, 1880.

Ferguson, Walter Perry. Died in Santa Ana, California. Age 79. Was a graduate of the Eclectic Medical Institute, Ohio, 1883. Licensed in California 1892.

Hensel, Eugene A. Died in San Diego March 17, 1921. Was a graduate of Rush Medical College, 1895; licensed in 1901.

Hughes, John Harrison. Died March 15, 1921. Was a graduate of the California Medical College, 1887. Licensed in California, 1887.

Kelsey, John Edson. Died in Berkeley, California, March 24, 1921. Was a graduate of Cooper Medical College, 1894. Licensed in California, 1894.

Wilson, Henry Benjamin. Died in San Diego February 27, 1921. Was a graduate of Bellevue Hospital Medical College, 1887. Licensed in California, 1914.

Woodworth, John Bennett. Died March 16, 1921, in Redlands, California. Was a graduate of the Starling Medical College Columbus, Ohio, 1896. Licensed in California, 1915.

CORRECTION

The announcement of the death of Dr. H. P. Wilson in the California State Journal of Medicine of April 1921 was an error. Dr. Wilson is in San Diego, California.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO
Editor and Secretary - - - - - W. E. MUSGRAVE, M. D.
Managing Editor - - - - - CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

| | | | |
|--------------------|-----------------------------------|----------------------|---------------------------------------|
| Alameda..... | Dr. Ruby L. Cunningham, Berkeley | San Bernardino..... | Dr. C. L. Curtiss, Redlands |
| Butte..... | Dr. Edward Baumeister, Chico | San Diego..... | Dr. Robt. Pollock, San Diego |
| Contra Costa..... | Dr. P. C. Campbell, Richmond | San Francisco..... | Dr. Le Roy Briggs, San Francisco |
| Fresno..... | Dr. G. L. Long, Fresno | San Joaquin..... | Dr. Dewey R. Powell, Stockton |
| Glenn..... | Dr. W. H. Walker, Willows | San Luis Obispo..... | Dr. Paul K. Jackson, San Luis Obispo |
| Humboldt..... | Dr. L. P. Dorais, Eureka | San Mateo..... | Dr. A. L. Offield, Burlingame |
| Imperial..... | | Santa Barbara..... | Dr. Robert W. Hartwell, Santa Barbara |
| Kern..... | Dr. Edward R. Guinan, Bakersfield | Santa Clara..... | Dr. Chas. Richards, San Jose |
| Lassen-Plumas..... | | Santa Cruz..... | Dr. J. B. Cutter, Watsonville |
| Los Angeles..... | M. Creamer, Los Angeles | Shasta..... | Dr. F. Stabel, Redding |
| Marin..... | Dr. W. F. Jones, San Rafael | Siskiyou..... | |
| Mendocino..... | Dr. O. H. Beckman, Fort Bragg | Solano..... | Dr. A. V. Doran, Vallejo |
| Merced..... | Dr. Brett Davis, Merced | Sonoma..... | Dr. N. Juell, Santa Rosa |
| Monterey..... | Dr. T. C. Edwards, Salinas | Stanislaus..... | Dr. E. F. Reamer, Modesto |
| Napa..... | Dr. Robt. Crees, Napa | Tehama..... | |
| Orange..... | C. R. Lane, Santa Ana | Tulare..... | Dr. J. T. Melvin, Porterville |
| Placer..... | | Tuolumne..... | |
| Riverside..... | Dr. Paul E. Simonds, Riverside | Ventura..... | Dr. C. A. Jenson, Ventura |
| Sacramento..... | Dr. S. E. Simmons, Sacramento | Yolo..... | Dr. Frances L. Newton, Woodland |
| San Benito..... | | Yuba-Sutter..... | |

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

JUNE, 1921

No. 6

EDITORIAL POLICY

The editorials appearing in this Journal, as in all other official organs, are intended to reflect the policy and program of the organization. The original article department is to a limited extent interpreted as an Open Forum. The editorial policy toward articles of this character will be very liberal. The responsibility for the language, method of presentation and the statements made in each article rests with the author and not with the State Medical Society. Brief comments and constructive criticism on original articles are invited.

THE SEMI-CENTENNIAL OF THE STATE SOCIETY

The fiftieth annual session of the Medical Society of the State of California, held in San Diego on May 10-12, was notable in many respects. The session was the culmination of the year's administration of the retiring president, Dr. John C. Yates, of San Diego, and the wonderful reception accorded the Society by its president and the San Diego County Society was a matter of frequent comment. The association of three such men as Dr. Yates, the retiring president, Dr. John H. Graves, the incoming president, and Dr. Henry H. Brainerd, the president-elect, is a matter for congratulation. Never were the affairs of the State Society in better hands, and never was the prestige and the influence of the State Society at so high a point. In this connection must be noted, too, the election by the Society of Dr. W. E. Musgrave as full-time secretary, an election fraught with the promise of great progress and of great unification and strengthening of the work of the State Society.

With some seven hundred members in attendance, and the presence of nearly an equal number of ladies, it was a foregone conclusion that the

social program of the session would be notable, and such was the case. The entertainment provided by the San Diego County Society was heartily appreciated and enjoyed by the entire convention. The hospitable and cordial program carried through by the ladies of San Diego was one of the most charming and noteworthy features of the week. No effort was spared to please and instruct the doctors and their ladies, and in stating that these efforts were deeply appreciated and will not soon be forgotten, we are but voicing the unanimous conviction of the seven hundred members in attendance.

A visitor from an Eastern state who had attended several state society meetings in various parts of the country during the past year called particular attention to the uniformly high-class programs and snappy discussions heard in all of the sections. The character of these programs will be reflected in the papers to appear in the Journal in the next few months.

The House of Delegates decided to extend the time of the annual session to four days, and the next meeting in May, 1922, was set for the Yosemite. With better than one in five of the membership in attendance this year, at San Diego, and with a growing recognition on the part of everyone of the value and pleasure of these conventions, a record-breaking attendance can be confidently predicted for next year. Detailed reports of the fiftieth annual session, together with the minutes of the House of Delegates, will appear in the July issue of the Journal. Once more attention of authors is called to the fact that all papers presented at the State Society session thereby become the property of the Journal and cannot be published elsewhere without permission from the Journal. Those papers which are not accepted for publication by the Journal will be returned to the writers promptly.

LEAGUE LUNCHEON AT CORONADO

The San Diego Union of May 12, in a lengthy article, describes the League Luncheon as the outstanding feature of the Fiftieth Annual Convention of the State Medical Society. "More than one thousand medical men and their wives packed the dining-room of the Hotel Del Coronado at the meeting of the League for the Conservation of Public Health, and noted speakers vigorously attacked 'quackery' in all its forms, and urged continuous progressive effort on the part of the medical profession to protect the sick and infirm from imposition by incompetent pretentious cultists."

Even to those who have contributed largely to the phenomenal progress of the League and kept in constant touch with its many activities, the remarkable review of the League's performances by Dr. Dudley Smith, the president of the organization, was full of inspiring information. As Dr. Smith said, "There is no one prominently engaged in promoting public welfare work in California today; there is no one worthily holding important public office in this state today that is not aware of the effective and salutary work which the League is doing."

The League is no longer regarded as an experiment, but is recognized as an important fact and factor in the field which it so uniquely fills. Beginning with its first test in 1918, down to the present hour, it has furnished and delivered the goods. In supporting or opposing issues it has not been governed like some transient organizations by what seemed to be at the moment popular. It has taken a positive stand on the side of a question not because it was popular or unpopular, but because it believed it to be right. In every instance the right has prevailed.

Dr. Smith reviewed the successful work of the League against Social Health Insurance in the 1918 campaign, the legislative battles of 1919, the state-wide campaign of 1920, and the recent contests at Sacramento, during which the League decisively defeated the formidable forces arrayed against modern medicine. As Dr. Smith's address will be published in an early issue of the Journal, further comment is unnecessary at this time.

Dr. Smith was followed by Mr. H. F. McInturff, the executive secretary of the Oregon unit of the League for the Conservation of Public Health. The performances of the League in Oregon, as eloquently presented by the executive secretary, demonstrated, as he said, "That the plan of the League is practical and effective, and with personnel of competent caliber can be applied anywhere to solve the present and future problems that confront the medical profession."

Dr. W. E. Musgrave, chairman of the League's section on Advancement of Medical Education and Science, gave an interesting summary of the varied work of the major function of the League—"Hospital Betterment." This important paper will also appear in a future issue of the Journal.

Dr. Donald Jackson Frick gave an impressive address upon "The Civic Responsibility of the Medical Profession," in which he pointed out

how futile a thing individual effort is and how present problems can only be met by a united medical profession. The conclusion that he reached was applauded by all—"It is the duty of each and everyone of us to give the best that is in him to the League for the Conservation of Public Health. It is founded on right principles; it is guided by the men of ideals who have forgotten they owned coats or gloves—follow their lead, believe in them and take orders like a soldier. Write or talk direct if you have complaints. Get into the spirit of this great movement, and be assured that you are showing the highest type of patriotism in shouldering the whole of your civic responsibility."

The surprise feature of the League luncheon was the presentation of a beautiful silver fruit and flower bowl to Mr. and Mrs. Hartley F. Peart, by the combined membership of the League and the State Medical Society. Presentation speeches were made by President Dr. John C. Yates, for the Medical Society, and Dr. Dudley Smith, for the League, in which both emphasized the valuable services rendered by Mr. Peart in advancing and protecting the interests of the medical profession.

When Mr. Peart was called to the platform to receive the gift he received an ovation.

The attitude of those who were fortunate enough to be present may be summed up in the concluding words of Dr. Smith, "Only those physicians and surgeons who are ineligible or who are wholly indifferent to the fact that an increasing number of sick people are being treated, or rather maltreated, by the unqualified and by ignorant hostile cultists can consistently refuse to join the League."

STATE LECTURE BUREAU

Attention of county societies is called to the fact that the State Society has prepared a list of lecturers and subjects available for any county society in the state which desires to secure them. Ask the secretary for this list.

PACIFIC COAST MEDICINE

In the medical history of the United States we have been awakened by the great war to a realization that, in the words of Emerson, "We have listened too long to the courtly muses of Europe." "Our day of dependence, our long apprenticeship to the learning of other lands, draws to a close." We have found that American medicine does not need to sit at the feet of foreign instructors. We have demonstrated, and the demonstration is continuing, that originality and progress are characteristic of American medicine. The tradition of European leadership is broken and may never again be re-established.

There is an instinctive feeling among us, on the Pacific Coast, in turn, that our medical thought and interest center on the Atlantic seaboard. To a great extent that is true and will remain true for a considerable time. And yet the time is at hand in which we must recognize that medical science on the Pacific Coast is abreast with

the best and is forging ahead to a position of leadership. Not that we would decry the leadership of the east. But that we would stand on our own scientific feet and no longer say, "All good is from abroad." We must not forget that "Wherever MacDonald sits, there is the head of the table."

Medical science on the Pacific Coast is turning out work of which it need not be ashamed. In quantity and in quality it bears analysis. It is setting a pace in economics and sociology that is second to none in the country. Let us realize that we have something of value here and let us build up a Pacific school of scientific medicine which shall put us at the head of the scientific table.

MINERS' CONSUMPTION

Fibroid phthisis, or miners' consumption, is not infrequently observed in California, either in men engaged at the time in hard rock mining operations, or in those who formerly have followed this trade elsewhere. Until the last few years the condition received but scant attention and was but poorly understood. As the result of an investigation covering three years in the Butte district, and conducted by A. J. Lanza, of the Federal Public Health Service, and Daniel Harrington, of the Bureau of Mines, miners' consumption is now better understood and its hazards more easily avoided.

Lanza and Harrington summarize our knowledge of the disease somewhat as follows: Lung disease among workers in hard-rock mines has been recognized as extremely prevalent. Miners' phthisis is caused by the mechanical irritation of particles of rock dust containing free silica. This dust is dangerous in proportion to the amount of free silica or other hard, sharp, insoluble matter in it. Particles of such dust small enough to enter and remain in the lungs measure less than ten microns in longest dimension. The disease is strictly of mechanical irritative production, and represents an extensive scarring of the lungs, slow in development, and neither contagious nor infectious. The time necessary for the development of the pathologic lesions is dependent on the amount of dust exposure, the length and steadiness of such exposure, and to other concomitant surroundings in the working conditions.

Miners' consumption itself may be the direct cause of disability and death, but more often it predisposes to secondary infections of all sorts, and few escape such infection in the long run. Tuberculosis is not infrequently a sequel, and is more apt to develop where housing and living conditions are favorable to its spread in the soil already prepared. Pneumonia, too, is common.

The danger from tuberculosis is always present, and a tuberculous miner is, of course, a menace to his family and associates. If the victim of miners' phthisis leaves his underground employment, the disease tends to recovery if the process is not too advanced, but the hazard from inter-current tuberculosis or pneumonia is very great even from the first.

Proper protection against the irritative forms of hard-rock dust will prevent this disease. Its treatment naturally consists of removal from the dust hazard to open air occupation, and beyond this is purely symptomatic.

COMMERCIAL VITAMIN PREPARATIONS

It seems necessary to call attention to the considerable number of commercial preparations of vitamins now being advertised, and with reference to which doctors are being extensively circularized. Vitamins are necessary articles of diet. Deprivation of vitamins leads to disturbed physiology and, if continued, to definite disease. At least three types of vitamins are recognized and few, if any, single preparations or foods contain all of them. But we must not forget that vitamins are unstable, illy-defined chemical substances of still doubtful nature and properties, and that their isolation is attended with difficulty, and their standardization is thus far unsatisfactory, to say the least. Moreover, under ordinary conditions an abundant supply of vitamins is secured from a usual dietary, and no specific addition is necessary. Apply all of these facts to the widely-advertised preparations now being exploited, and then see if you are helping the cause of science or the interests of your patient by prescribing indiscriminately substances which are lauded by commercial interests. As was said in these columns recently in regard to commercial claims for emetin preparations, we do not want or relish having our therapeutic science served up to us by drug houses. We want to get our knowledge from unprejudiced scientific sources. We insist that drug houses shall be guarantors of quality alone, and that they shall not be advocates of their preparations to the extent of supplying us with pseudo-scientific literature, which too often leads the unwary doctor astray. Be circumspect in your use of vitamin preparations, and do not allow yourself to be capitalized through a popular fad for the benefit of the seller of doubtful preparations.

DEATH NOTICE INCORRECT

The Journal recently published a death notice which, like one of Mark Twain, was evidently "greatly exaggerated." In the San Diego County Bulletin for March 4, 1921, occurred this paragraph, "Dr. H. P. Wilson . . . has also joined the great majority." It seems, however, that the good doctor is very much alive, and we are delighted to learn that the "great majority" must refer to our friends in San Diego County. May the doctor live to serve for many a long year yet.

THE CALL OF SERVICE

Once more it is a pleasure to quote from an editorial article in the Saturday Evening Post. "None but a fool will decry the importance of religion and education. There are young men whose one idea is to accumulate enough money to enjoy themselves. But as men penetrate further into modern business life they find that it is not simply trading for dollars. Whatever motive leads the young man into business, he is soon caught up in the whirl of the mighty enginery of service, which is just as real if at times it is not wholly conscious. Surely all men recognize that business must be and is being increasingly shot through with the sense of duty, responsibility and service. Its task is too great, too vital, to be animated by any other spirit." These words are just as true of the practice of medicine as ever they were of business. Religion and education are absolute essentials for the real physician, and on them he builds his ideal of service. When any other ideal dominates the profession of medicine, then is it no longer a profession but pure quackery, with all the commercialism that always attends quackery.

DIET AND HEALTH WITH KEY TO THE CALORIES

The fifth edition of the little book under this title bears stalwart witness to the fact that Dr. Lulu Hunt Peters, of Los Angeles, has struck a note of popular demand and scientific value. It has been stated often in these columns that one of the greatest duties and opportunities of the medical profession today was to interpret the great truths of medicine in intelligible terms to the non-medical public. Insofar as this is done, the medical profession is fulfilling its mission. This little book admirably serves to interest, entertain and instruct, and one cannot lay it down until it has been read through. It is the sort of thing we need for our patients; it is full of human interest, clever illustrations, arresting statements, and withal is clothed in sound scientific fact without misstatement or wrong implication. Its definition of "Medical Trust" and "League for Medical Ignorance" are worthy of repetition. It combines in a rare degree scientific accuracy, common sense, and attractive presentation for the lay reader, and we surmise many physicians will find instruction as well as entertainment in its pages. Not the least interesting fact about it is that its already large circulation is largest in Boston, the very home of Eddyism.

NARCOTIC LAW INSTRUCTIONS

Register and pay tax on or before July 1, 1921, and avoid paying penalty.

Forms will be received by you on the first day of June, with instructions for filling them out, and an addressed envelope to return to Narcotic Division by affixing a 2-cent stamp.

Your registry number, the period you are to register for, has already been filled in on the forms, so only use the forms sent you.

If you have narcotics on hand or order forms in your possession, or intend to prescribe them during the next year, by all means register in the month of June, and do it in the early part of June, for you can get service and information if you desire it during the first three weeks in June, and avoid the crush and confusion during the last week.

As this notice is mostly read by doctors, the tax rate is \$3 per annum, which also applies to hospitals, sanatoriums. It is called Class 4, and also gives you the privileges of narcotic preparations under Section 6 of the law called Exempt Preparations, a great many which can be purchased without a prescription.

Stenographers, secretaries and nurses employed in doctors' offices who after June 1, 1921, find a Government addressed envelope with Narcotic Division, Room 107, stamped on the outside, kindly forward immediately to the doctor who employs you if he is away on a vacation, whether or not he has instructed you that he does not wish to be disturbed while away from the office. If you do not send him the forms, and he returns to his office after July 1, 1921, without registering, the excuse of being away on a vacation will not be sufficient to avoid paying penalty.

He can fill his forms out at whatever destination he is staying and have them sworn to. A suggestion that some one connected with the office make out his inventory if he has any narcotics in the office before forwarding it to him.

Notaries who call on doctors to register them in many cases have called on the Narcotic Department and received full information how to make out the forms, and in years passed they have brought the forms in correctly with the proper remittance.

When a notary hands you back your original inventory (Form 713), which you are required to keep, you have his seal and signature on that form as a receipt, and you can hold him liable if he does not turn in your forms and have your tax stamp issued on time.

The rates that the notaries charge for their services is no affair of this office; we are only making this suggestion for busy doctors who have not the time to call at the Narcotic Division of the Internal Revenue. Stamps will be sent to taxpayers from five to ten days after receipt of forms and remittance.

Register by all means on or before July 1, 1921, and avoid penalty.

More servants wait on man
Than he'll take notice of. In every path,
He treads down that which doth befriend him
When sickness makes him pale and wan.
Oh mighty love! Man is one world, and hath
Another to attend him.

—George Herbert.

Special Articles

ANNUAL HOSPITAL CONFERENCE

To be held in the Palace Hotel, San Francisco,
June 24 and 25, 1921

The League for the Conservation of Public Health is inviting three representatives from each hospital in the State to meet in annual conference at the Palace Hotel, June 24 and 25.

The purposes of this convention are to bring together for discussion subjects of mutual interest to representatives of the directing boards, administrative officers and staff members of all hospitals interested in the Hospital Betterment Movement.

Physicians, dentists, physiotherapists, public health nurses, nurses, medical social workers, dietitians, radiographers, laboratory technicians and other persons interested in the Hospital Betterment Movement are especially urged to attend these meetings.

Any information regarding the convention or any assistance relating to hotel reservations or other matters may be obtained by addressing Mr. Celestine J. Sullivan, Convention Manager, at 903 Butler Building, San Francisco, telephone Sutter 1688.

The following provisional program has been arranged:

PROVISIONAL PROGRAM

All Meetings Will Be Held in the Palace Hotel.

1. First Meeting—Friday, June 24, 10 a. m.
Opening Address—Dr. Dudley Smith, President of the League for the Conservation of Public Health.
The League and the Medical Profession, by Dr. John H. Graves, President, State Medical Society.
The Hospital and the Public, by Celestine J. Sullivan, Executive Secretary, League for Conservation of Public Health.
2. Second Meeting—Friday, June 24, 3 p. m.
 - a. The Location and Construction of the Hospital.
Discussion opened by Dr. S. G. Brodwick.
Discussants: Dr. D. H. Trowbridge, Dr. H. C. Oatman, Dr. Williams.
 - b. Government and Management of Hospitals.
Discussion opened by Dr. G. B. Somers.
Discussants: Dr. T. J. Cox, Dr. Lyell C. Kinney, Dr. A. S. Keenan.
 - c. Principles of Hospital Accounting and Office Management.
Discussion opened by Mr. J. J. O'Connor.
Discussants: Miss Alta Bates, Mr. G. W. Curtis.
3. Third Meeting—Friday, June 24, 8 p. m.
 - a. Medico-legal Problems of Hospitals.
Discussion opened by Mr. Hartley F. Peart.
Discussants: Dr. Enloe, Dr. J. D. Dameron.
 - b. Hospital Ethics.
Discussion opened by Dr. Hamlin.
Discussants: Sister Mary Malachi, Dr. Hirschberg, Dr. Guy Cochran.

- c. Financing Hospitals.
Discussion opened by Dr. Rex Brown.
Discussants: Dr. Van Zwalenburg, Dr. Magan, Dr. Coblentz.

4. Fourth Meeting—Saturday, June 25, 10 a. m.
 - a. The School of Nursing and Its Relation to the Hospital.
Discussion opened by Miss Anna C. Jamme.
Discussants: Dr. Emma K. Willits, Miss I. N. Rood, Miss Lilla V. Swift, Miss Cole.
 - b. Roentgenology and Radium Therapy.
Discussion opened by Dr. Burnham.
Discussants: Dr. Rex Duncan, Dr. Lawrence Taussig.
 - c. Physiotherapy.
Discussion opened by Dr. E. W. Cleary, Dr. Gilbert Barrett.
Discussants: Dr. Morton Gibbons, Dr. Langnecker, Miss Hazel Furchgott.
 - d. Pathology and Clinical Laboratories.
Discussion opened by Dr. Walter Brem.
Discussant: Dr. Wm. Ophuls.
5. Fifth Meeting—Saturday, June 25, 12:30, luncheon (\$1 per plate).
Speakers to be announced later.
6. Sixth Meeting—Saturday, June 25, 3 p. m.
 - a. Clinical Records.
Discussion opened by Dr. Dudley Fulton.
Discussant: Dr. Percy T. Phillips.
 - b. Staff Organization and Functions.
Discussion opened by Dr. Buteau, Dr. John Gallwey.
Discussants: Dr. Daniel Crosby, Dr. Frank Nuzum.
 - c. The Clinic—Its Relation to the Hospital, the Profession and the Public.
Discussion opened by Dr. A. C. Reed.
 - d. Business Meeting.
Dr. Charles D. McGettigan, Chairman
Executive Committee, Presiding.

MEDICAL ASPECTS OF VISCEROPTOSIS

By GEORGE E. EBRIGHT, M. D., Assistant Professor of Clinical Medicine, University of California Medical School.

Visceroptosis is a pathological condition and is not to be considered in any sense a disease entity. By ptosis is meant a downward displacement of an organ. One or several or all of the viscera may be affected by this condition. As a general rule it is safe to say that visceroptosis is secondary to some primary pathology. It is conveniently classified as hereditary and acquired. Just as an individual may be born with a deficient mental capital, so from birth others are predisposed to a relaxed condition of the abdominal content. It is not difficult to recognize the type, but it is equally important for the patient's future well-being that an early recognition of this tendency be made. Stigmata of degeneration are usually concomitant evidences, and especially to be recognized is a tendency to general muscular atrophy or atony as effectively seen, for example in the eye muscles, general circulation, the somatic system, as in the intestinal tract. There is a general constitutional predisposition involving practically

all of the smooth muscles. Such patients have a more or less characteristic habitus—long, flat thorax, unattached ninth and tenth ribs, unstable or relaxed vaso-motor system, low blood pressure, and in general present a picture of the antithesis of an athlete. Exceptionally, the condition occurs in those of apparently good physique.

The acquired type is to be seen among those debilitated by chronic wasting disease, such as syphilis, tuberculosis, alcoholism, chronic intestinal infections, chronic endocervicitis and metritis. It is especially common in women after pregnancy, and in those of improper habits of diet and exercise. Visceroptosis may also be brought about by pressure from above the diaphragm, or by the removal of abdominal pressure as in post-operative states following removal of large tumor masses, ascites and the reduction of great overweight as in emaciation following obesity. One sees frequently visceroptosis in patients who have strenuously reduced overweight by starvation without proper attention to restoration of proper tone of the abdominal and general musculature.

Symptomatology—Just as it is wrong to speak of visceroptosis as a disease so it may be seriously doubted whether or not one may speak of the symptoms of gastropoptosis or visceroptosis or colopoptosis without the risk of overemphasizing this feature of the patient's condition. The symptoms as a rule are general symptoms, and are those of the condition or conditions which bring about the relaxed abdominal states. It is true, however, that gastric symptoms follow chronic dilatation of the stomach; that Dietl's crisis occurs in movable kidneys; that constipation and chronic intestinal disturbances are present in enteroptosis. It is also especially true that a lowered resistance to general infections is a very prominent characteristic of those suffering from the general condition of relaxed abdominal organs. Whether or not this lowered resistance may be considered due entirely to the lowered state of nutrition brought about by deficient abdominal functions, or whether more properly those who are born with hereditary tendencies in this direction are not also endowed, unfortunately, with a deficient immunity to disease may be very properly considered. Certain it is, however, that inasmuch as impaired alimentary physiology must result in a lowered state of nutrition, it must also result in a diminished protective power of the individual against infections. At any rate, visceroptotics are especially prone to upper respiratory tract diseases—sinus, antrum, post-nasal infections, chronic pharyngitis, tonsillitis, pyorrhea, tooth abscesses, tubercular adenitis, bronchitis, pulmonary tuberculosis, gall-bladder infections, chronic enteritis, colitis, chronic appendicitis, specially that form associated with a tendency to acquired bands of adhesions from traction of the elongated pelvic or iliac colon, the cæcum, ascending colon resulting in acquired bands of adhesions as described by Lane.

Treatment—Under certain and limited conditions, surgical treatment becomes a part of the treatment of visceroptosis, but there is no doubt that the value of surgery in this connection rests nearly entirely in attention to causative factors. For example, in a woman suffering from chronic endocervicitis, whose general state of nutrition is interfered with, who is thin, undernourished, a chronic semi-invalid, and whose condition of relaxed abdominal organs was due to very definite pathology in the pelvis, such a person is usually cured by surgery, directed, however, only to the improvement of the uterine condition. Again, a woman of thirty was sent to California for pulmonary tuberculosis. She endeavored to mend her health for two years, all the while suffering from recurrent fever, headaches, indigestion and pronounced emaciation associated with a very relaxed condition of all of her abdominal organs. Upon examination at the end of this time she was found to be suffering from chronic suppurating ethmoiditis; was operated upon for that. Her general state of nutrition, of course, rapidly improved, and her visceroptosis was cured. So much to indicate the necessity for the removal of the debilitating cause and the upbuilding of the patient's general health. A much more difficult problem lies in the treatment of those patients whose habitus predisposes them by heredity to this condition. The logical treatment of such individuals should have been instituted several generations back. In a given case, of course, that is impossible, but nevertheless the prevention of this class of the disease as a type means all that is comprised in the word "eugenics." For an individual himself, it means intelligent care of the weak child, and especially the guiding of the physical habits of adolescence. A great responsibility rests upon the family physician, and an equally great responsibility rests upon those who have the supervision of children during the school age. In our present civilization our educational systems make very strongly toward mental development at the expense of physical development—long hours of study and short hours of healthful play are bad for any child, but are especially fatal to the future happiness and well-being of the child with deficient musculature and improper bone and joint development, and a tendency to detrimental postures. It is impossible to dilate sufficiently upon this aspect of the subject in the time allotted to this paper.

While the use of supporting bandages properly adjusted is of value in some cases, they are usually unsatisfactory. The most important consideration is the development of the strength and tone of the abdominal muscles as shown by Mankell and Koenig (Mankell, N. K., and Koenig, E. C., N. Y. Med Jour., 1916, CIV. 934). If one bears in mind the military setting-up exercises, simple satisfactory directions are readily formulated for the patient's guidance. The object should be to elevate the viscera by habitual and conscious drawing in of the abdominal muscles. This has a tendency to elevate the viscera and to dilate the lower portion of the thoracic

basket. In itself also it constitutes continual exercising of the musculature of the abdominal wall, thereby strengthening it. The disadvantage of supporting bandages is the diametrical opposite of this procedure with a tendency to atrophy the muscles so that, although in some instances bandaging may for a time be used, their employment should be considered as far as possible, temporary.

Massage, hydrotherapy have a twofold usefulness in the treatment of this condition, that is they are useful in improving the patient's general state of nutrition, and have specific application to the abdominal region. The general principles of psychotherapy are to be borne in mind in the treatment of neurotics, among whom this condition is very frequent.

The dietary treatment consists essentially in small frequent meals in order not to overload the stomach and intestines. Fats in many cases are poorly tolerated, but carbohydrates may be used freely. I have found it of advantage to give very little fluid during meals, nor for two hours thereafter.

If the objective is to increase the weight of the patient, as a matter of fact it usually is, that diet of from 3000 to 4500 calories should be used.

Medical treatment—bitters such as nux vomica, gentian, quassia, condurango are of advantage from time to time.

In summing up the treatment, not to dwell too greatly upon any one phase, the objective of building up the patient's general health and general state of nutrition, the increasing of the tone of all the muscles as well as the abdominal muscles, the lifting up thereby of the viscera should be borne clearly in mind to successfully treat the sufferer from visceroptosis.

209 Post Street, San Francisco.

Original Articles

ANOTHER PROBLEM IN SURGERY*

By W. A. CLARK, M. D., Oakland

"Doctor, I should think the medical society would do something to prevent Dr. Blank from operating," or, "Doctor, the medical society should establish some rule allowing only those to operate who are competent." These remarks or something similar in character we have often heard from some patient or friend after detailing to us the condition in which some one of his acquaintance has been left after being subjected to some particularly obnoxious piece of surgery by some incompetent operator.

Our usual answer is that "the medical society cannot do anything." He may then further remark that they should do something.

Remarks such as these are not idle, but are too often based upon a large amount of truth and should spur us to remove the cause of such unfavorable criticism.

If these conditions exist in our profession in its relation to the public, why do they exist? Why

has nothing of real present value been done to obviate them? What is being done or can be done for the future? Is there any method which may promise some amelioration of these conditions in the immediate future?

After graduation from Medical College not so many years ago (more for some of us) by application in due form and the payment of a stipulated fee, a license was issued us by the State to practice medicine and surgery. Looking back over the years which have elapsed since we thus became the proud possessors of a diploma and a license, how many will now assert that at that time we were competent to practice the healing art, much less to do surgery. I felt at that time I was, I know now that I was not, and I have since then wondered why my Alma Mater graduated me, unless, possibly to be rid of me.

But fortunately, as in other lines of progress, medical education has advanced, and our colleges and various medical and surgical societies are diligently endeavoring, as far as possible, to better equip the recent graduate so that even if he may not be of a great deal of immediate value to the public whom he seeks to serve, he will at least be safe. This, in spite of the State Legislature.

We are not concerned with the trained surgeon whose training was so ably presented last year to this section by its chairman. This surgeon, by his work and his rugged honesty to himself and his patients, has done more than almost anyone else to establish our own self-respect and gain the esteem of those we are serving.

We are concerned, however, with the untrained operator whom you know and I know exists, and I am afraid is rather numerous.

Pardon me if I draw a picture rather familiar to us all.

This untrained operator in his care of a patient becomes convinced that an operation is necessary or advisable. It is quite likely his consultant will be equally proficient. He is not apt to call a surgeon because he may lose the operation, the stronger and better man being so obvious at the consultation, and, furthermore, such a consultant may possibly advise against operating. He has a book or two on surgery with many clear and simplified illustrations, and he becomes convinced he can easily do it. He may not try very hard to make a surgical diagnosis, but will know more about it as the operation proceeds. This latter circumstance does often happen to the trained surgeon who has found it impossible to make an accurate pre-operative diagnosis, but who is able to handle with comfort to himself and the patient the difficult and unusual conditions revealed.

Now, the condition found at operation may fortunately quite closely resemble the pictures in the book. The work is done in a way we can well imagine and, after the lapse of a considerable length of time, the patient is returned to bed; thanks to the anesthetizer. The patient eventually gets well, and to the operator and not the surgeon is paid the fee.

Soon the patient's relatives and friends begin to talk about the wonderful operation Dr. Blank performed, and what a great surgeon he is. Soon

* Chairman's Address, Surgical Section, Medical Society, State of California, at Coronado, Calif., May, 1921.

another operation is performed, and in like manner he is complimented on all sides in his circle, and he is spoken of as a very clever and rising surgeon. With a few repeated successes he believes it himself. Possibly a fond parent (you can hardly blame him) may in a burst of enthusiasm and paternal pride remark: "He is as good as a Mayo." I have heard it.

Not being familiar with the pathology of the living he sometimes removes the normal, as instanced in our meeting so many of our patients, young women, who have had their ovaries removed with a history which failed to indicate pathology. But there comes an operation, and after the exposure is made things are not as they were in the book, nor has he seen anything like it before. By the distortion of pathology he possibly has cut the facial nerve, or the musculospiral, or one or both ureters or removes an appendix, when he should have removed a stone in the ureter or kidney; or did not know how to control the hemorrhage from a tubal pregnancy; or has removed a breast for cancer and not attempted the radical removal, or during the radical removal has injured the axillary vein. Then after floundering around, as one might say, the patient is returned to bed not improved but probably made worse, and, possibly to die.

Then the question which has occasioned these remarks is asked us by our friend or patient. I do not think this picture is much overdrawn, as you know and I know such an event has happened more than once in our several communities.

The surgeon relies in selling his invaluable services by giving to his patient all the resources of his surgical training, by calling in counsel men who are of equal or better training and of more experience, and also modestly presenting to the various medical societies the results of his efforts. He will not hesitate to record his failures. He very properly expects that his honest consistent efforts will be recognized by his co-workers and the public. We expect the public in times of trouble to exercise care and discrimination in their selection of a surgeon. We know they do not. Any method whereby we may assist them in wisely making this selection seems to me justifiable.

Nothing has been done to prevent the untrained man from doing what he pleases, because there is no law or restriction placed upon him. He is only deterred at times through fear that if he attempts a certain operation, and success not attend him, it may hurt his income.

Our hospitals, through the efforts of the American College of Surgeons, are being raised in their standards, thereby giving a better service to the community. Let us help this movement by endeavoring to provide the hospitals with better and competent surgeons. There are not enough hospitals in some communities. There is not at present any appreciable competition for patients among the hospitals.

It seems that in this favorable situation a solution of the problem which has so long confronted us may be effected by asking the hospital to aid us.

There are many among you who are deservedly looked upon as being among the best of surgeons

in your community, and whom the hospital management gladly welcome to their operating pavilions. The managers recognize you as surgeons and do and would give every consideration to your advice and suggestions to increase their professional standards and their standing before the community. They would feel the loss of prestige should you take your work elsewhere. They know that aside from buildings and equipment that their reputation is very largely made and maintained by the professional standing of the surgeons who do their work.

I would suggest that when you return to your work, why not have a confidential talk with the management of the hospital you patronize. Suggest to them that there are probably men using their operating rooms who are not qualified. Go over the list of the men who are operating in that hospital and, together, you will be able to formulate a list of men who are safe to do operative surgery. This need not be so difficult, as they know who are taking three hours to do an ordinary hernia, or two and a half hours for an appendectomy. Their laboratory could soon check up the man who is removing normal structures because he knows not the abnormal, or the one who has a high percentage of curetments. It should not be very difficult to convince the hospital management that it is undesirable to cater to these men.

This list, when complete, would not be that limited coterie of those you would have operate on you or your family, but undoubtedly be of a much higher standard than the one which now enjoys the privileges of their hospital.

To those whom you both consider incompetent, no rooms would be available for their patients. This attitude would undoubtedly cause the creation of sporadically-equipped small hospitals. I do not think that this possible competition would very materially affect the revenues of larger and better institutions.

This suggestion is offered for the want of a better one to obtain results in the very near future. Jealousies will undoubtedly be engendered, but it will, I have no doubt, serve in a measure to give the public more efficient surgical service. Unless some plan of action is instituted I am afraid the same question will be asked us and the same answer returned until we have only the trained surgeon, and the untrained operator ceases to exist.

CHAIRMAN'S ADDRESS*—SECTION ON PEDIATRICS CALIFORNIA STATE MEDICAL SOCIETY

By WILLIAM PALMER LUCAS, M. D., San Francisco

I consider it a great honor to have been asked to be the first chairman of the Section on Pediatrics formed in the State Medical Society of California. I sincerely hope that this section will prosper and grow so that it will represent the broad field which pediatrics covers.

I wish to try to present to you today some

*Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

idea of the growth of pediatrics and some of the problems which must be faced by those of us who are interested in its proper development. It is only a period of some twenty-five or thirty years since pediatrics was first recognized as a major department in the practice of medicine. Previous to that time, although there were many individuals who might be counted as specialists in the diseases of children and a considerable number of yearly publications on subjects related to pediatrics, yet there were very few of the representative schools in this country that had chairs of pediatrics. The first chair of pediatrics in this country was established by Dr. Abraham Jacobi in the College of Physicians and Surgeons in New York City. This was soon followed by a department of pediatrics in Harvard Medical School under the leadership of Dr. Thomas Morgan Roth. From that time on the development of pediatrics has been rapid and it is now accepted as one of the fundamental branches in the teaching of medicine in all or most of the Class A medical schools.

Hospitals devoted entirely to the treatment and care of children exist in almost every large city in the United States and within the last fifteen years there is hardly a city of any magnitude that does not contain one or more practicing physicians who limit themselves entirely to this field.

During the early years of the development of pediatrics most of the attention of pediatricians was directed to that special phase of pediatrics having to do with infant feeding, and it is on this basis alone that pediatrics has been mainly developed, not alone in this country but in Europe as well.

It would take too long to try to trace the various phases and schools of infant feeding; suffice it to say that in this country our growth has been a very steady one, developing along lines of intensive and careful clinical study combined with experimental, scientific investigation. If one reviews the medical journals exclusively devoted to the diseases of children one will find that gradually the interest in this field has been shifting from the purely clinical to either a combined clinical and scientific investigation of the various conditions related to infancy and childhood or to the strictly scientific investigations which have today placed our understanding of these conditions on a firm scientific foundation.

There is rapidly growing up in this country a very distinct American school of infant feeding. This is a combination of the so-called German, French and early American schools. The German investigators were undoubtedly the first to point the way in the scientific investigation of the nutritional conditions of infants and children, whereas the French school placed the emphasis on preventive and hygienic care. To France we owe our modern conceptions of infant welfare as to Germany we owe the stimulus for scientific investigation.

With the development of our modern research

methods many of the problems relating to nutritional diseases have been cleared up and the real art of infant feeding has been placed on a firm basis. We no longer conceive of our substitute feedings as an attempt to imitate breast milk but rather as an adaptation of the various ingredients to the individual needs of the infant. With infant feeding on this basis our field of endeavor is widening and today the pediatrician is not only called on to feed infants but is also studying the problems of the pre-school age child, the child of school age and the adolescent boy or girl. During these four periods of development and growth different diseases and conditions appear in varying degrees of importance. Formerly we passed over the pre-school age, going from the development of infant hygiene to that of school hygiene, which we have developed to a high degree of efficiency, so that today practically every city has not only its infant welfare stations but also its school hygiene or medical school inspection. All these attempts at preventive medicine started primarily with an effort to care for the sick and to diminish, in the case of school children, the number of contagious and infectious diseases. In both these departments during the last few years our aims have broadened out to the detection of preventable conditions. Now one hears of well-babies' clinics. School hygiene now includes not only the detection of contagious diseases but also conditions related to teeth, nose and throat, heart and the nutritional state of the child. Nutritional classes for undernourished children are being formed throughout this country following a weighing and measuring campaign. A widespread survey of the nutritional condition of the school children of California is being made along these lines this year. This is a marked step in advance and should interest every pediatrician in the state.

The pre-school period is one which has been greatly neglected, though it is one which offers a large field for preventive work. When one considers that from 30 to 60 per cent of children entering school at six or seven years of age are found to have defects of one type or another which were preventable, if recognized during the pre-school period, the importance of this can be appreciated by all of us. As a further extension of our infant welfare stations, in many cities pre-school clinics are being organized to take care of the child from two to six years of age.

On the other hand very little up to date is being done for the adolescent child. During this period there is a very marked increase in growth. A great change in all the developmental processes, both physical and mental, occurs. Few pediatricians have given any attention to this period, and yet it is a field which should engage the earnest interest and attention of all of us, as it is being almost entirely neglected by those who are concerned in the well-being of our childhood population.

It is clear from this short analysis of the field to which pediatricians lay claim that few men can

individually perfect themselves in the management of all these four phases of childhood, and this leads me to the final consideration in the development of the practice of pediatrics to which I wish to call your attention and toward which I believe modern pediatrics is tending, that is the association of a group of specially qualified pediatricians who will together cover these various phases of the field of pediatrics.

Today many groups in medicine are being formed throughout this country. These groups usually consist of an internist, surgical specialists of various types, laboratory, X-ray, and the most successful groups are closely affiliated with some hospital. In some of these groups the pediatrician is included but usually not. The pediatrician is, I believe, the center around which the best group for the care of the whole period of childhood, including adolescence, must develop in the future. With a group of pediatricians in any large city must be associated the specialists who are particularly trained to care for the type of specialty work (surgery, nose and throat, dentistry, etc.) related to these periods of child life. Such a group should not only be interested in the cure of disease, but should also interest itself in the preventive side of infant and child welfare. This should include not only the physical but also the mental, psychological and psychiatric aspects of childhood. Without such a broad and comprehensive vision of the field of pediatrics I feel that our development will not be as healthy and well rounded as it should be. The work of such a group must be carried on in connection with a children's hospital or children's department in a general hospital where all the facilities for the study of special cases are available and where a broad and comprehensive opinion for the management and treatment of cases is possible. It may be satisfactory to treat a large percentage of cases in an office practice, but it is almost impossible to arrive at any well rounded conclusion regarding many of these cases without a period of thorough observation and investigation in a hospital. Such an observation period may cover a few days or several weeks, but during this time every phase of the child's condition should be studied. As a group pediatricians are not only interested in the cure of disease and of abnormal conditions that may lead to disease or to a handicapped life either mental or physical, but must learn to consider a child as a whole—body, mind and soul—and it is for this complex relationship that we are looked to more and more each day, not only to diagnose a diseased condition but to advise and guide as to a child with its parents and guardians through the difficult adjustments that many growing individuals have to make.

THE TREATMENT OF TUBERCULOSIS WITH PARTIGENS (AFTER MUCH-DEYCKE)*

By MAX ROTHSCHILD, M. D., San Francisco

1. What are Partigens?
2. Scientific foundation for the justification of this method of treatment.
 - (a) Immunity in tuberculosis in general.
 - (b) Biological tests (in regard to the effect of partigens).
 - (c) Cellular and humoral immunity.
3. In what respects do partigens differ, regarding their effect, from the tuberculins which are on the market and in use today?
4. Demonstration of diapositives, showing cases treated with partigens.

The problems met in the creation of a treatment which has for its object the cure by immunization are, first: To establish the fact, that the natural defense of the body consists in the production of immune bodies against the infection. Second: Admitting the quantity to be sufficient to overcome the infection, whether they confer immunity for future attacks of the same character. Third: To estimate in what, or by what tissues these immunizing agents are formed. And, fourth: If they can be transferred to another individual and grant immunity.

These facts are well established for certain infections, for example, diphtheria.

In the treatment of tuberculosis they represent the foundations, on which Much of Hamburg based his research work with his so-called "partial antigens."

What are partial antigens, or, as they are called for short, "partigens"?

They are prepared from tubercle bacilli in the following manner: Cultures are carefully broken up with physiological salt solution, containing one-half per cent lactic acid; this suspension is incubated at 65° C., until the acid-fastness of the bacilli has entirely disappeared, and until it is no longer possible, to stain even Much's granula (after the method of Gram-Much).

This disintegrated substance, which is called M. Tb., is filtered.

The water-soluble part, containing the toxin of the tubercle bacilli, and representing the pure tuberculin, is called L.

The residuum, non-soluble in water, is called M. Tb. R. This again is treated with alcohol and ether, and the three end products are called the partial antigens—first, the fatty-acid-lipoids, soluble in alcohol, are called F.; second, the neutral fats and highly molecular fats, soluble in ether, called N.; third, an entirely non-soluble residuum, of a highly albuminous content, containing a large amount of phosphorous and belonging, most probably, to the group of nucleo-proteids, called A.

These are the three partial antigens, and are those that are used for treatment, while the pure tuberculin, L., is not used at all, or only in exceptional cases.

Much and his school teach: "A cure of tubercu-

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

losis is impossible without creation of an absolute immunity." The proof of this statement is demonstrated by animal experiments and by the observation of larger groups of people, or whole nations.

Behring was the first to show that an immunization for tuberculosis is possible. He vaccinated cattle with human tubercle bacilli and immunized them (even if only for a certain period) against tuberculosis. This fact has been definitely established. Much and Deycke succeeded in producing an immunization with substances derived from dead tubercle bacilli, which we have never been able to do with the tuberculin, that we have been using up to the present time.

Koch was the first to demonstrate, that an infection with tubercle bacilli protects animals against a second infection. Roemer corroborated Koch's deductions and proved, that the protection thus granted was very stable. To use his own words, "In spite of the fact that an animal might be tuberculous, it is tuberculosis-immune against a second infection." The original infection might at the same time progress or become arrested. This assertion found a great deal of contradiction in the beginning, because the quantitative values and the conditions of time, which are of the greatest importance, were not properly considered by the workers, who checked up these experiments.

The observations of localities, or countries, which have been practically free from tuberculosis, furnish further interesting and valuable data. The fact in itself, that an infection is of long duration, presupposes extensive processes of immunization, and the difference between an acute and a chronic illness is based on the amount of defense and immunity developed. Much, Deycke, Wolff-Eisner, and others proved by their observations in Palestine, Turkey, the Argentines, Africa and other countries, that tuberculosis is not universally always a chronic disease. It can become pandemic, just like any other plague, when it invades a country which has been free from tuberculosis, and whose inhabitants have not been able to acquire previously a certain degree of immunity. The explanation of these facts teaches: People who live in a country, where tuberculosis is a common disease, and who have, therefore, been infected at sometime with tubercle bacilli, are protected against the disease. People who have never been infected, are not protected and succumb. "Contact with tuberculosis leads to immunity, lack of contact means lack of protection."

In practically all cases which are suffering from tuberculosis, antibodies can be demonstrated in the blood. But all attempts to influence tuberculosis with derivatives of blood of animals or human beings, previously treated, have been without results. The reason for this failure is explained in the following way: To be complete for immunizing purposes a serum, or any other blood preparation, must contain all the partial antibodies. This we have not been able to obtain so far, but even if it were possible to prepare such a product, its success would not be assured, as the humoral elements play an insignificant role

in immunity against tuberculosis. The cellular immunity has been found to be the most important feature in the immunization process.

Much and Leschke published the following animal experiments:

1. Goats were treated with the three partial antigens. They developed in their blood all the necessary antibodies; at this time the blood-plasma of these goats possessed definite protective qualities for other animals. Later the antibodies disappeared entirely, or partially, and the blood did not provide any further protection to other animals; but the goats themselves proved entirely immune to an inoculation with tubercle bacilli.

2. Blood-plasma of a human being, immune to tuberculosis, was mixed at different times with 5 mg. tubercle bacilli and injected intraperitoneally into guinea pigs. The plasma was previously examined for partial antibodies. If none or only part of these were present in the plasma, the animals died rapidly from extensive tuberculosis. But, if all the partial antibodies were present in the plasma, it showed an astonishing immunizing quality, and the animals did not develop tuberculosis, in spite of the enormous dosages of bacilli.

These experiments furnish a most valuable support for the treatment with partial antigens.

Much and his school proved by the first of these experiments, that the cellular immunity plays a far more important role in tuberculosis than the humoral immunity. They demonstrate the cellular immunity with the help of the skin-test, the humoral by complement fixation.

Their biological tests have thrown an interesting light on the phenomena of cellular immunity. They proved again and again, by graduated intracutaneous reactions and complement fixation tests, that in many cases of tuberculosis no antibodies are found in the serum, in spite of very strong skin reactions. They showed further, that the quantities of antibodies in the serum are most changeable, but that the reactivity of the cells of the skin remains the same over a long period of time.

Much sums up the question of immunity in the following manner:

"Immunity in tuberculosis consists of two kinds: a humoral and a cellular. For the defense against an infection the humoral immunity is absolutely necessary, for the continuation of the condition of immunity only the cellular is needed. If a second infection occurs in a being which has none or only some of the partial antibodies in the blood, but which possesses cellular immunity, the virus is overcome, because the cells dispatch partial antibodies into the blood current. The appearance of the sum of the partial antibodies after a renewed infection of an immunized being has been demonstrated in the human being as well as by animal experiments. After the new infection has again been overcome, a part, or all of the partial antibodies disappear from the blood, and only the cellular immunity persists."

With complement fixation only the humoral immunity is demonstrated; with the oversensitiveness reaction of the skin the humoral as well as

the cellular immunity is proven. For the fight itself the humoral immune-substances are necessary, for the defense the cellular ones are sufficient. The cellular immunity is the most necessary and important one.

These experiments, considerations, and their deductions, which can be here only superficially discussed, present the foundation of the treatment with the partial antigens of Much and his co-worker, George Deycke.

A comparison between these partial antigens and the tuberculins, which have been on the market up to the present time, presents interesting and rather important differences.

First of all we have to admit that the tuberculins have not fulfilled our expectations.

While they are entitled to credit under certain conditions and have many enthusiastic advocates, they have an equal number of decided opponents. Their failure as a universal specific is evidenced by the many preparations of tuberculins on the market, extravagant claims being made for all. With any one of the dependable preparations good results might be obtained in certain cases; with none of them can failures be avoided. We all have observed cases in which one form of tuberculin had no effect whatsoever and even seemed to be harmful to the patient, while a different preparation produced good results, and it has been impossible to explain this fact.

Why have the tuberculins, which we have been using up to the present time, failed to meet our expectations?

Principally, on account of their chemical composition. They all contain variable partial antigens, even if only in inconsiderable amounts. Besides the three partial antigens, which are non-soluble in water (albumen, fat-lipoid, neutral fat), they contain a special toxin and an aromatic substance. All these substances possess strongly reacting qualities. The reaction to pure tuberculin, or the pure toxin, is based on oversensitiveness to the toxin and is harmful, as has been proven by Much and his school.

The reaction to the other partial antigens is based on oversensitiveness to immunizing substances and is useful.

The tuberculins now offered on the market, for treatment, contain undetermined amounts of antigens, which makes their use very unscientific and inaccurate, and gives no aid in solving the complex problem of immunity. Normal animals cannot be immunized against tuberculosis by any of these tuberculins. There must either be some substance missing for the purpose of immunization, or it must be present in some combination which cannot be used. Undisintegrated bacillary substances do not produce all antibodies, and least of all those reacting particularly to fats. The normal body is unable to do the necessary work of disintegrating the bacillary substances contained in the old as well as the new tuberculin. Frequently one or the other partial antigen might be present in such a form that it could be used and then, if the system happens to have the other antibodies present for defense, the whole sum of partial antibodies might be formed and the treatment would be successful. This, however, is not

the case in the great majority of patients, and would be only a coincidence, should these conditions be present.

In treating tuberculosis with partial antigens, however, all the antigens which are needed for treatment are injected in such a form that the body is able to produce antibodies for each one of them.

A radical difference between the tuberculins and the partigens, lies in the fact that the pure toxin of the bacilli is entirely removed in the treatment with partigens. This accounts for the absence of general reactions, which is so commonly seen when using the ordinary tuberculins, temporarily contraindicating their further use. On the other hand the partigens, being devoid of toxicity, can be used while the patient has febrile periods. A possible temperature of the patient during the treatment is not a result of the use of partigens, but it is due to the disease itself, or of one of its many complications. The correctness of this statement is proven by the fact that in fever cases the temperature frequently becomes normal during the treatment. The partigens can and usually do produce slight focal reactions, not severe ones, but no general reactions or fever. The first indication that the respective patient has reached the maximum dose of partigen is evidenced by a slight local reaction at the site of injection, a slight elevation of temperature following the injection. The only contraindications for the treatment with partigens are pulmonary hemorrhages, and an entirely negative reaction to all the skin tests with the different antigens. In this event other methods will have to be used (non-specific ones) to create first some reactivity in the patient, if this can be established at all.

Another important advantage in favor of the use of partial antigens lies in the fact that we are able to get a good picture of the status of immunity of the patient.

The injections for the demonstration of the status of immunity are made intracutaneously. They are based on the biological law of oversensitiveness. The result of this intracutaneous inoculation indicates which partial antigens should be used in the respective case. If we find, for instance, that the fatty-acid antibodies are missing and the antibodies for the albuminous and neutral-fat group are present, then the patients are treated advantageously with the fatty-acid antigen, F, and so on. With the skin-test we are able to ascertain whether antibodies are present, and, if they are present in large or small quantities, but we cannot determine if they are present in sufficiently large quantities to ward off the attack. In other words, we can measure the defense, but we cannot measure the attack. A patient might have a great many antibodies, and yet the number of these antibodies present would not be sufficient for defense against the infection, should the infection be an exceptionally virulent or massive one.

It is evident that if these claims, as they are made by Much and Deycke in favor of their partial antigens, should prove to be correct, a very acceptable advance will have been reached in the specific treatment of tuberculosis.

THE PROTECTION OF THE PERINEUM BY EPISIOTOMY IN DELIVERY AT TERM

By DALE L. MARTIN, M. D., San Francisco.

The protection of the perineum by episiotomy in delivery at term seems at first glance a paradox. How is it possible by incising the perineum to protect it from injury? It would seem rather that by this act we would at once defeat the object of our endeavor. It is my hope to show, however, that the incision of the perineum or vulvar outlet at childbirth is our only prophylactic of merit against irreparable pelvic-floor injury, and that the protection of the perineum, as it is commonly understood and practiced, is a misnomer. Only primiparæ and those rare multiparæ who present the pelvic-floor findings of the former are here considered. Usually in multiparæ the damage has already been done.

It has been argued that Nature intended woman to be torn with her first baby, that subsequent deliveries would be quicker and easier. If we believe, however, that woman subserves an aim in life more inclusive than that of simple reproduction; that the reproduction function should not destroy her health, but increase it and contribute to her happiness, such teaching will pass unheeded. Of the illnesses peculiar to woman, none is so common as that arising out of pregnancy and childbirth, and of these, none is more potent for harm than the illnesses due to birth injuries. Hirst says that the proper repair of birth injuries will eliminate 60 per cent. of gynecological troubles.

It would be presumptuous of me to name to you the well known pathology and symptoms arising directly out of perineal injury at childbirth, symptoms traced by the patient herself to the time she had her baby.

So clear is the relationship between birth injuries and gynecological diseases that it has been recognized through the ages and numerous expedients have been devised to spare the woman perineal laceration. The measures range from the salves and relaxing douches of Hippocrates through the hand support of Soranus, the hot towels of Baudelocque, the manual dilatation of Van Horn, to the modern method of protecting the perineum by delivering the patient slowly, on her side, under anæsthesia, maintaining flexion of the fetal head, crowding it well up under the symphysis and causing it to escape between pains.

That the "protection of the perineum" is a misnomer, that it does not in any sense protect, is evidenced by the frequency of perineal tears. De Lee says he has never seen an anatomically intact perineum in a woman who had delivered an average sized child at term. Galabin and Blacker say all primiparæ have perineal injury. Tweedy says that 45 per cent. of all primiparæ have perineal tears of such an extent as to require suture. McNeal, of Los Angeles, in a recent number of the California State Journal of Medicine, said he had never seen an intact perineum following labor at term except in the Japanese.

Two years ago, it was my privilege to visit

several of the large maternity hospitals of the East and to observe their obstetric methods. While at the New York Lying-in-Hospital, the question of perineal protection and damage came up. At that time, episiotomy was not practiced there even in operative cases. With the aid of an intern, we went over the birth records on one floor to determine the number of recognized perineal injuries, their proportion to the number delivered and their extent. From September 1, 1919, to September 23, 1919, the day of our investigation, there had been delivered on that floor 72 patients. Of these, 30 were primiparæ. There were during that time 8 operative deliveries from below with 8 perineal lacerations; 5 first degree tears, 2 second degree tears, and one third degree tear. Of the 64 spontaneous deliveries, there were 22 tears; all first or second degree. The total number requiring suture was 30, the same number of tears there were of primiparous deliveries, though the tears were not all in primiparæ.

The injuries so far discussed are perineal injuries recognized as such by inspection; the skin or mucous membrane or both is broken; the tissues beneath are separated to a greater or less extent; an evident wound has been produced. It seems wise at this point to call your attention to the very important distinction between perineal tears which are readily recognized as such and can be repaired, and perineal injuries resulting from extreme stretching and relaxation of tissue with subcuticular and submucous tears which are not recognized and cannot be repaired. Of the two types, the latter is of more importance by far. What physician has not congratulated himself at the end of a slow, careful delivery, that he had no tear, only to discover in the same patient at a subsequent examination, to his embarrassment and chagrin, a gaping introitus, a rectocele and cystocele, or a prolapsed and retroverted uterus? Or, if one wish to prove the value of his perineal protection at once, let him at the end of such a delivery without tear, insert his finger in the anus and bring it forward against the perineal body from behind. He will be surprised at the small bulk of tissue which remains in it. Something is wrong with the perineal protection even though it apparently protects.

Because the tear is recognizable and can be repaired, while the relaxation due to submucous and subcutaneous stretching is not recognized until after months or years, when the damage has been done, and because it is not repaired, let us have tears in every primipara. Let them not be the usual spontaneous lacerations that follow prolonged pressure, that follow a dangerous degree of stretching, the laceration, the location and the extent of which are entirely beyond our control, the laceration which is difficult to repair; but let us make our laceration where we want it, as deep as is necessary in the particular case, and let us make it before pressure injury and undue stretching of tissue have occurred.

Episiotomy was first practiced by Ould in 1742 for delay in delivery due to resistant perineum. Michaelis in 1810 practiced it first in antcipa-

tion of a severe tear. It has ranged in location from median, lateral, bi-lateral, medio-lateral to numerous small incisions encircling the vulvar ring. Of these incisions, there remain in common use today the median incision in the perineal raphe down to the sphincter ani, exposing but not incising it, a lateral incision in a plane perpendicular to the sagittal plane of the body, and the medio-lateral, that starting in the median line at the vulvar outlet and passing to the side of the sphincter ani. In the last-named incision, the vaginal arm of the cut is in the sulcus on the same side and passes to the side of the rectum. The medio-lateral and lateral episiotomies are rarely bi-lateral.

In the selection of the episiotomy site, it is essential to consider the anatomy of the perineum and pelvic outlet and to know which of these structures is most important physiologically and which most liable to birth injuries.

Of the soft structures of the pelvic outlet, none is of more importance than the levator ani muscle with its investing fascia. It is the principle support of the pelvic viscera, and its preservation from injury at childbirth should be our greatest concern, though our protective efforts are usually directed to the less important perineal body. It arises, you remember, from the posterior surface of the pubis, from the fascia over the obturator internus muscle, the white line, and from the spines of the ischii, and passes backward, down-

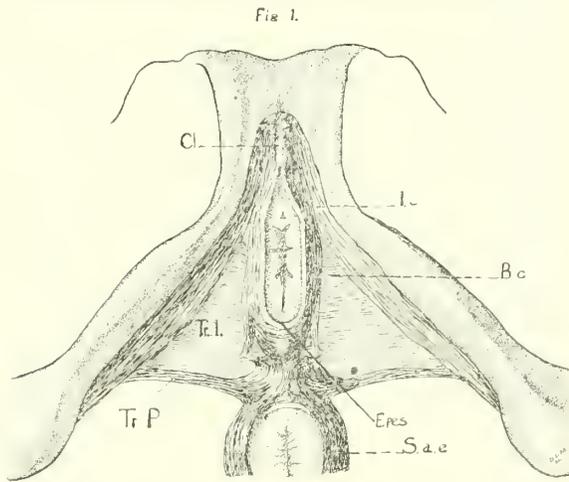
ward, and inward as a broad flat muscle to be inserted into the lower sacrum and coccyx and into the corresponding fibers of the opposite side in the median line. It is gutter-like, horse-shoe shaped, and is open in front behind the symphysis. Through this break in its continuity pass the urethra, the vagina, and the rectum. Its heavy anterior pillars can be felt at the sides of the vagina near its ostium. Contrary to the accepted belief, this muscle makes up but a small and unimportant part of the perineal body and sends to it only a few weak fibers. The main bulk of

muscle is found behind the rectum. This is of practical importance in the protection of the perineum and in the repair of the birth injuries. The levator ani, though distensible, is always injured at childbirth either by extreme stretching from which it only partially recovers, or by actual tears, frequently multiple. These tears may occur at any point in the anterior portion of the muscle surrounding the vagina. It may tear from its attachment to the pubis above, or posteriorly behind the rectum. Such injuries are irreparable and result in the so-called "pelvic-floor relaxation."

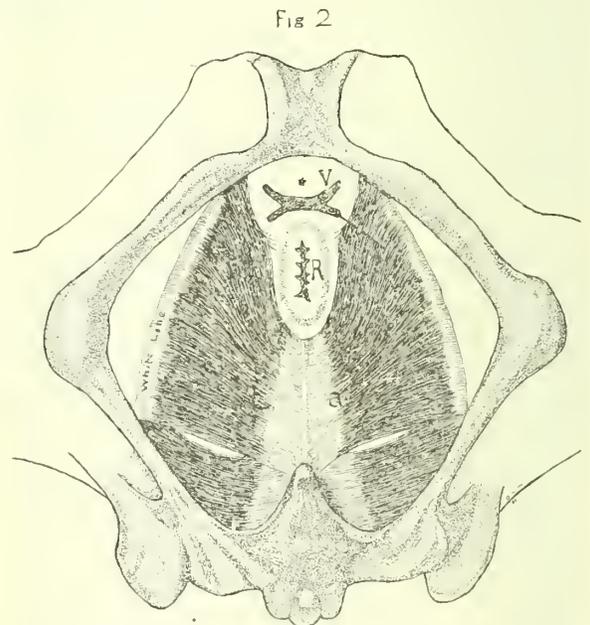
Occupying the arch of the pubis just superficial to the plane of the levator ani and extending backward to a point just in front of the anus is a fibrous membrane called the urogenital septum, the triangular ligament of the female. It is pierced by the urethra and vagina. This structure is always torn in delivery at term, and results, unless repaired, in the gaping outlet so frequently seen post-partum.

Overlying the urogenital septum and in a plane superficial to it are several muscles, the bulbocavernosus or sphincter vaginae, and the transversus perinae alone concerning us here. They vary much in size or may be absent and are of little importance practically. The bulbocavernosus is always torn at childbirth.

Posterior to the base of the urogenital septum and in a plane superficial to the levator ani is the



Diaphragma Urogenitale. Eps, location of superficial arm of incision. Cl, Clitoris; Ic, ischio-cavernosus muscle; Bc, bulbocavernosus muscle; Tr.L, triangular ligament; Tr.P, transverse perineal muscle; S.a.e, sphincter ani.



Levator ani muscle from below showing location of upper arm of incision. V, vagina; R, rectum; L.a, levator ani.

ward, and inward as a broad flat muscle to be inserted into the lower sacrum and coccyx and into the corresponding fibers of the opposite side in the median line. It is gutter-like, horse-shoe shaped, and is open in front behind the symphysis. Through this break in its continuity pass the urethra, the vagina, and the rectum. Its heavy anterior pillars can be felt at the sides of the vagina near its ostium. Contrary to the accepted belief, this muscle makes up but a small and unimportant part of the perineal body and sends to it only a few weak fibers. The main bulk of

important sphincter ani. Every reasonable effort should be made to protect this muscle from injury.

The perineal body, which so frequently is damaged and towards which our protective efforts are so largely directed, is of much less importance anatomically than the levator ani. Its tissue bulk is not great, being made up largely of fascia and fat and the decussating fibers of the transverse

perinei, bulbocavernosis and the sphyncter ani muscles. The results of injury to it are those of the damage to its contained urogenital septum.

An incision to spare the tissue of the vaginal outlet must now be so planned as to protect them all; and if not all, then the most important. This is accomplished only by the medio-lateral incision which includes in its scope the division of the anterior pillars of the levator ani muscle. If necessary, this incision may be extended in the same line to meet a later indication for more room. A laceration super-imposed upon an inadequate episiotomy is usually in the same direction, a point of importance as the sphyncter ani is thus spared. With the medio-lateral episiotomy, I have never known a sphyncter ani tear to occur. Besides thus sparing the important supporting structure, the levator ani, and avoiding sphyncter damage, the other tissues of the vaginal outlet are by necessity spared. They are all included in this one incision.

The median or central episiotomy saves from damage only the perineal body and the median portion of the urogenital septum. The levator ani, passing behind the rectum and not in front of it, cannot be reached by this incision. Thus the less important structures only are here protected while a most important structure is frequently jeopardized. I refer to the sphyncter ani muscle. An extension of our line in the central incision gives us the justly dreaded third degree tear. In my mind, the median or central episiotomy has but one advantage: its ease of repair.

The lateral episiotomy is mentioned to be condemned. It has no advantage over the medio-lateral and is infinitely harder to repair.

Episiotomy is a prophylactic measure only when the wound is properly and accurately repaired. The repair must be anatomic; cut structures on one side of the incision must be accurately sutured to corresponding structures of the opposite side. This anatomic approximation of tissue is required in a clean belly wound; why not in the perineum? The conditions are not met by a few through and through silkworm gut sutures. This means that every primiparous delivery becomes surgical at its end with everything that surgical implies: asepsis, anaesthesia, good light, and, if possible, some assistance. It is not well adapted to the practice of obstetrics in the home, though it may there be done successfully, as I can testify from experience.

As to the technique of repair, only a few points of value may be mentioned. In the restoration of the levator ani muscle, do not look for the retracted lower end of the cut fibers in or across the median line in front of the rectum. They will be found lateral to the rectum on the side of the incision. An early suture of the vaginal mucosa from the upper angle of the wound to the hymenial ring converts a distorted and a symmetrical wound into one with recognizable relationships and much simplifies the repair. The careful restoration of the urogenital septum restores the non-parous appearance of the vulva and prevents a gaping introitus.

In a strict consideration of the question of perineal protection by episiotomy, it is essential to

state that the aseptic conduct of labor throughout is essential. Our repaired wound must heal and heal without suppuration. The consideration of the value of episiotomy as a preliminary to operative delivery, where it is commonly practiced; of its value in protecting the infant from frequent injury of slow and difficult delivery; of its use in simple delay in delivery, would carry us too far afield.

For some time, I have done an episiotomy on every primipara I have delivered at term, whether spontaneous or operative. My results more than justify it. With me, it has come nearer offering true perineal protection than any other measure I know.

PROBLEMS IN PLASTIC SURGERY*

By GEORGE WARREN PIERCE, M. D., San Francisco

As with certain other surgical specialties, plastic surgery has shared in a distinct advancement due to the recent war. The urge of thousands of mutilated faces developed special plastic centers and grouped gifted surgeons, who revised the older methods and evolved new methods of plastic reconstruction. The writer spent some time at Queen's Hospital, the British center for plastic reconstruction, and had the privilege of working there with Mr. H. D. Gillies, whose genius and devotion to this subject have gone so far in solving the problems of plastic surgery. Observations of some of the methods in use at Queen's Hospital will constitute the major portion of this paper, together with the relation of these methods to civil surgery.

Given a case of plastic surgery, it behooves the surgeon to make a careful and detailed analysis of the case, not only from the standpoint of history, but also an analysis of the exact amount of tissue loss of every kind, bone, cartilage, muscle, tendon, nerve, mucous membrane and skin. The huge, gaping wounds that often appear when apparently small scars are excised and the tissues are allowed to retract to their normal station bear witness to the necessity for this careful analysis.

As to fresh wounds, proper care of these will do much toward obviating the necessity for secondary plastic operations. Wounds of the face generally heal readily on account of the rich blood supply, but the question always arises as to the advisability of primary suture with or without drainage. A rather extended experience in industrial surgery has made me a firm believer in the efficacy of a thorough *debridement* with primary suture if done within a few hours after injury. This method has stood the test for me in a large number of cases of hands mangled in machinery where dirt is ground in and much of the tissue devitalized. In the large majority of cases, wounds treated by *debridement* will heal by first intention. Sometimes the surgeon's judgment will dictate the use of drainage or secondary closure, and this is particularly demanded of wounds more than eighteen to twenty-four hours old. A maxim

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

to be followed in large facial wounds and lacerations is to place all parts as nearly as possible in their normal position, to sew skin to mucous membrane in wounds of mucous cavities where similar layers cannot be joined, and to use prosthetic appliances if necessary to hold the tissues in normal position where supporting structures have been destroyed. Restoration of contour should be secondary to restoration of function, though the two are generally concomitant. The aid of the dental surgeon at this stage is often of great value in providing artificial supports for the soft tissues or to hold bony fragments in line.

Plastic repair of healed wounds should ordinarily not be undertaken until all contracture of the scars has ceased. When scar tissue is present at time of operation, it should be entirely excised, as then only can the operator rest assured that a good cosmetic and functional result will not be marred by contracture. The surgical problem of restoring contour and function demands a careful analysis and visualization, in the severe cases, of the effects of many stages, and of the mechanical and physiological difficulties related to each stage. The factors in each stage are unfortunately variable, differing commonly for each stage and each patient, and long experience is necessary to forecast with a degree of accuracy the viability of a proposed flap, the probable amount of contracture, or the amount of tissue which may be shifted into a defect without later marring the contour or function of some adjacent part.

The careful study of the use and possibilities of the tissue flap is a prime requisite for the plastic surgeon. A great variety of flaps have been elaborated by surgeons past and present, but it is safer to rely mainly on the simpler basic types, conserving the more complicated flaps for the cases distinctly demanding them. The basic types are the advancing flap, the transposed flap and the bridge tissue forward from that immediately adjoining the defect, the transposed flap has its base only at the defect, while the bridge flap brings tissue from a distance to the defect and is nourished by a suspended pedicle.

A valuable advance in the treatment of pedicled flaps was the introduction by Mr. Gillies of the practice of tubing the bridge pedicle. This method goes far toward eliminating the two great enemies of success in plastic operations—namely, infection and insufficient blood supply. To prepare this type of flap parallel incisions are made through the skin and partly or entirely through the superficial fascia. The intervening tissue, to the desired thickness, is freed and the parallel skin edges of the pedicle are carefully sutured together with continuous suture to form a tube. The tubed pedicle is then raised and the remaining wound edges undercut and accurately sutured together. Suture is continued till all parts of the wound are closed. The pedicle is then left from two to four weeks till the blood supply is fully established and all wounds healed. To further insure the success of the flap, the flap should be marked out with a scalpel several days before the transfer to the defect. The scalpel is carried through the skin and

the blood supply now comes almost entirely through the pedicle, though supplemented to some extent through the fascial blood supply beneath the flap. When the flap is transferred the blood supply is well established and the area liable to infection is reduced to a minimum. These tubed pedicles may be transferred several times—first one end, then the other, allowing sufficient time for blood supply to be established. If the original base is not transferred, the pedicle may be untubed and returned to its original station after it has served its purpose. Forehead flaps cannot, as a rule, be tubed on account of the thickness of the skin and its unyielding nature. Pedicled flaps must be carefully located and a study made of their possible blood supply. Flaps from the face and forehead region, especially when containing an artery such as the superficial temporal, have a greater assurance of success than ascending flaps from the neck on account of their richer blood supply. In cutting the flap Gillies believes that the cosmetic and functional results are better served by cutting the flap according to a tin-foil pattern of the defect rather than to cut a third larger to allow for shrinkage, as was the custom formerly.

The question of post-operative treatment of flaps is all important and often determines the success or failure of the operation. During the period immediately following operation the flap is usually blanched to a greater or less extent. If cold or blanched, warm normal saline compresses changed every five minutes should be diligently applied and one is generally rewarded by seeing the flap become pink and warm. The cyanotic but warm flap is the opposite type. This is seen in the temporal artery flaps and others of rich blood supply. Here the arterial inflow is greater than the venous outflow and oedema and sloughing are apt to occur if the condition is allowed to continue. Many authors advise the use of multiple punctures for this complication, but gentle efferent massage, combined with the judicious use of warm saline compresses, gives excellent results. This avoids mutilation and scarring of the flap and the increased liability of infection.

Skin grafts are an inseparable part of plastic surgery. The Ollier-Thiersch epithelial graft is familiar to all surgeons, but at Queen's Hospital the common mode of application has been almost entirely superseded by some form of Esser's epidermal inlay. This inlay is one of the most important recent contributions to the art of plastic surgery and solves many difficult problems which have hitherto baffled all efforts. Esser's method consists in making a negative impression in warm dental modeling composition of the area or cavity to be grafted and covering this with a thin Thiersch graft, raw surface out. The model with the graft is then buried by sutures in the cavity or bound onto the surface to be grafted and left for about ten days. When the composition is removed at the end of this time a very high percentage of 100 per cent takes are observed. This procedure was immediately adopted by plastic surgeons and

numerous modifications greatly increased its scope of application. It may even be introduced directly into the mouth, where, in spite of the potential infection existing at all times, it is uniformly successful. It is very valuable in the treatment of labiogingival sulci obliterated by scar tissue, and may be used in the conjunctival sac as well. It also has a wide application on the body surface. Its very simplicity recommends it and its advantages over the old methods of Ollier-Thiersch grafting are very definite. How many times has the surgeon carefully applied Thiersch grafts, then within forty-eight hours has seen the grafts gently but effectively lifted from their bed by accumulated serum. The negative impression should be made very accurate both as to coopting surface and as to edges. The reason for this care is the basic principle of the method; in other words, the model acts as a very definite splint, keeping an even pressure that holds the Thiersch closely to the wound, stops bleeding and prevents the destructive gathering of serum. The applicability of the method commends it highly. Types of wounds which hitherto have required grafting in several stages may now be done in one stage. It is desirable to obtain the Thiersch in one piece, but if the model is large, excellent results may be obtained from using several pieces of skin. Gillies' operation for cicatricial ectropion is an apt illustration of the application of Esser's method. In this operation incision is made close to the lid margin in its entire length and the lid dissected free until it falls into its proper place. The model with Thiersch is then buried in the raw area by sutures, care being taken to pick up the edges of the graft with the suture. The author recently operated on a case in this manner, in which drainage through the tear duct was re-established after having been cut off by an epicanthus scar for twenty years.

The modeling composition also makes an excellent splint backing for Wolfe grafts and increases the number of complete takes. Wolfe grafts should be cut to tin-foil patterns and accurately sutured in place, and give better results when used on firm surfaces, such as the forehead.

Bone and cartilage make the best supports in plastic work, for foreign materials, as celluloid, etc., though occasionally successful, are not often tolerated by the tissues for any length of time. The seventh and eighth rib cartilages offer the largest amount of material and their removal rarely causes trouble. The cartilage may be readily shaped with the knife and any spare pieces may be stored in the abdominal wall through a small incision. The stored cartilage remains unchanged even after many months. Unless the perichondrium is removed the cartilage graft tends to bend toward that side and the precaution of removal should be taken.

Free fat grafts give excellent cosmetic results, but should only be used in areas entirely free from infection and where all bleeding has been stopped. These grafts should also be handled by the "no-touch technic" to insure success.

While the war experience was, in almost all cases, with tissue destruction from shell fragments or burns, its value to civil surgery is far reaching in the application of these principles to civil practice. Industrially, we meet almost exact prototypes of war wounds. Direct blows, explosions, falls, and machinery are continually destroying tissue in much the same manner as do shells in the trenches. Burns are numerous, both from fire and chemicals, and automobile accidents are an ever-increasing source of wounds of the face. Disease is constantly carrying on its destructive processes and the inroads of malignancy, leues and noma, are no less definite than the wounds of battle, while the scarring from lupus and pyogenic infections calls for earnest effort on the part of the surgeon. Congenital malformations we will have with us always.

The tubed pedicle method of Gillies and the epidermic inlay of Esser, of all the advances brought out by the war, will be found especially valuable. The large amount of tissue made available by the tubed pedicle, together with the comparative freedom from the danger of infection, commend it highly. The diversity of application of Esser's epidermic inlay has materially broadened the scope of the plastic surgeon. New uses for it are being found daily. In the oral cavity or about the eye, on the body surface or in the reconstruction of a new urethra it will be found reliable and efficient.

This type of work demands careful planning and exactness of technic and diligent attention to a multitude of small details, but if these are followed out the results will be most gratifying in the solution of the problems of plastic surgery.

THE INFLUENCE OF ADRENALIN ON NEPHRITIS AND ITS COMPLICATIONS BY INJECTION INTO THE KIDNEYS.*

By GEORGE LEE EATON, M. D., San Francisco, California.

In presenting this subject for your consideration, I do so knowing that I will meet with many adverse opinions, owing to the liberties taken, contrary to modern physiology and experimental medicine. Still, we can only expect to progress in the science of our profession by now and then "throwing a bomb," the recoil of which tends to bring out discussion and further animal experimentation.

The most important step in our knowledge of the kidney and its physiological function was first described by Bowman in 1842, with further investigation by Heidenhain in 1874, who, after much research and experimental work, published in 1883 his "Handbook of Physiology," dealing principally with the kidney and its function.

Cushny, in his last publication 1917, endorses the Heidenhain theory with a few modern suggestions relative to the capsule and its permeability to proteins, etc. The Heidenhain theory, with its modern attributes of laboratory and animal ex-

*Read before the St. Francis Hospital Clinical Society, April 25, 1921.

perimentation, puts us in a fair way to discuss physical changes taking place in the kidneys, and their influence upon the general animal economy.

With the foregoing preliminary introduction we are in a position to discuss the theory of kidney function, both physiologically and pathologically, based upon clinical experience and observation. I wish first to call your attention to the embryology of the suprarenal glands as a basis for argument later.

Primarily, very little is known concerning the suprarenal glands, and the part played insofar as their internal secretions are concerned. There is little doubt but what they bear a close relationship to the urogenital organs, as well as to their development and physiological function. Upon embryological investigation we find that they spring from the genital ridge, being of mesodermic origin, and in common with the kidney, while histologically the epithelial cell arrangement of the cortex is very much like that of the proximal and distal convoluted tubular epitheli of the kidney. The medulla of the gland, both embryologically and histologically, and so far as experimental research is concerned, might as well be identified as a separate gland, as we find it embryologically springing from the sympathetic nervous system, and, according to Balfour, doubtless of ectodermic origin. Physiological research, up to the present date, has not enlightened us as to whether it is productive of internal secretion, still there is a strong suggestion that there may be a correlative influence with the cortex, similar and like unto the posterior and anterior lobes of the pituitary body.

To substantiate the above, I refer to Biedl,¹ who claims that the removal of the cortex, leaving the medulla intact, produces death to the animal, life not being sustained by the administration of adrenalin. On the other hand, Wheeler² attempted to remove the medulla. Success was only met with in their experiments when the cortex was left intact or uninjured. Transplantation after total adrenalectomy has met with failure, except in those rare cases where the adrenal cortex and medulla were planted into the cortex of the kidney. The correlative influence of the medulla over the cortex is well exemplified, there being no doubt that the medulla, with its highly organized sympathetic nerve supply, acts as a controller over the cortex in the production of an internal secretion.

Antitoxin Effects of Adrenalin—The detoxicating action of adrenalin has been definitely proved by Meyer,³ who added an emulsion of suprarenal cortex to cobra venom, rendering the same harmless.

Experiments on a pit viper (rattlesnake) in 1914 substantiates Meyer's contention, having subjected a full-grown rattler to hypodermic injection of adrenalin, allowing a few days to elapse before drawing the venom. The venom thus drawn had a decided toxic influence upon a full-grown rat injected with $\frac{1}{2}$ cc. of a solution of 1-500, death ensuing in a few hours. A $\frac{1}{2}$ cc. of 1-500 solution of venom with $\frac{1}{2}$ cc. of adrenalin added was injected into another rat, the

same having but very little toxic influences, while the same amount and same strength of venom drawn from another rattler, without adrenalin, produced death in a third rat within ten minutes. These experiments and results are mentioned as corroborative evidence, tending to prove that the suprarenal hormones act within the blood through the kidneys as antitoxins and as regulators of cell activity.

Returning to our original theme of renal function, I wish to speculate, and at the same time transgress somewhat from the Bowman, Heidenhain and Cushny theories, by incorporating experiments of recent date, in substantiating the glomerular filtration of water, salts, dyes, etc., plus the secretive value of the epitheli of the proximal and distal convoluted tubule, of water, urea and other constituents found in the urine, and the absorptive power of water by the epitheli of the descending and ascending loop of Henli—all of which I feel has been fairly well proved by careful animal experiments. Notably, the secretion of urea by the epithelia of the convoluted tubule as outlined in an able article by Jean Oliver.⁴ Thus, these established theories, plus a liberal supply of suprarenal hormones act the part of a dual role. The first acts upon the sympathetic nerves of the kidneys. The second is that of an antitoxin with antigenic influence on the toxins and bacteria within the blood stream.

Relative to the permeability of the uriniferous tubules and glomeruli to drugs, dyes, mineral salts, etc., introduced by catheter into the kidney pelvis: Many recent experiments by authoritative investigators all prove that the same may reach the general circulation as in pyelogram—notably, among cases and pathological reports by D. N. Eisendrath,⁵ Keys Jr.,⁶ E. H. Weld,⁷ J. E. Burns and P. B. Hopkins,⁸ all of whom agree that upon post-mortem findings, collargol, thorium and other soluble silver salts are to be found in the uriniferous tubules, glomeruli, liver, lungs, spleen and other accessible parts of the anatomy. Others, whose experiments have been limited to drugs of known physiological action, dyes, etc., have definitely proved that the kidney, through its intricate cellular development, is capable of absorption and transmission to the blood current, with a perceptible action upon the sympathetic nerve system. Cow,⁹ Adis,¹⁰ D. J. Macht,¹¹ J. E. Burns and E. I. Swartz.¹² As corroborative evidence of the foregoing, 1 cc. of phenolsulphonephthalein in 5 cc. of distilled water was injected into the left kidney pelvis, the urethral catheter was blocked, while the secretion from the right kidney was tested every three minutes for return of the dye. The first color showed in ten minutes, and 10 per cent recovered the first thirty minutes. Feeling that the foregoing is substantial evidence, and that it may be permissible to utilize the kidneys, if necessary, for the introduction of drugs, dyes and antiseptics with no appreciable harm resulting therefrom, provided that strict antiseptic care be adhered to in introducing the urethral catheter into the kidney pelvis—as an example of such treatment, I cite a case where it became necessary, due to hematuria of the right kidney to

control the hemorrhage. As the case showed marked signs of shock, 1 cc. of adrenalin solution was forced into the kidney pelvis in the hope of controlling the hemorrhage. Previous to this procedure the patient's blood pressure had been noted for the purpose of determining the advisability of surgical intervention, and at the time showed a systolic pressure of 80, diastolic imperceptible, with a radial pulse of 130. A few minutes after the injection the assistant called my attention to the pulse, which had become much stronger, and a marked change in the patient's general condition was noted. Blood pressure was again taken and found to be—systolic 120, diastolic 70. I might add that the kidney was removed shortly afterward and found to be tubercular, the hemorrhage emanating from an ulcer in the middle cortex.

The findings in the above case incited within us a desire for further investigation. A few cases of nephritis with high blood pressure were chosen after the installation of adrenalin into the kidney pelvis—a marked fall in blood pressure was noted within twenty-four hours, also an increase in the urine output in those cases who previously had a tendency to anuria.

Following this, a general survey of the literature on the subject and a close scrutiny of case reports, I find the following by Cushny.¹³

“Adrenalin injected intravenously constricts the renal vessels and lessens or arrests the secretion of the urine. Given by subcutaneous injection it increases the sugar of the blood, and often causes glucosuria. Marshall and Davis state that on cats the extirpation of the suprarenal bodies leads to impairment of the kidney action, which is signaled by the urea of the blood rising to twice its normal concentration.”

In regard to blood pressure, I note 336 cases of nephritis as tabulated by P. K. Brown and W. T. Cummins,¹⁴ 254 with blood pressure range between 140 and 179, while the remaining 82 cases represent a blood pressure of 180 plus.

As evidence of the foregoing it is well to concede that all true nephritic cases invariably run a much higher blood pressure than normal irrespective of age or sex.

Our experience in the administration of adrenalin, injected into the kidney pelvis has just the opposite effect upon the urine from that stated by Cushny,¹³ while upon the blood pressure the tendency is to stabilize it toward normal.

Tabulation of 50 Nephritic Cases

| | |
|-----------------------|--------|
| 13 cases representing | Type 3 |
| 15 “ “ | “ 2 |
| 22 “ “ | “ 1 |

From the above I have chosen a few cases of each type to emphasize the result of treatment.

TYPE 3

Case 1. Miss O'D., age 27, entered Saint Francis Hospital, July 29, 1919, at 8:30 a. m., in partial coma with anuria. Catheterized specimen of urine: Examination—albumin heavy cloud, reaction acid, acetones. Microscopic: Casts epithelial, blood and granular. Blood pressure, 190-110. At 4:30 p. m. double catheterization with installation of 1 cc. of adrenalin solution into pelvis of each kidney. Following twenty-four hours eighty-one

ounces of urine was voided. Blood pressure, 135-85. An uninterrupted recovery and re-establishment of the kidney function. Subsequent report, July 20, 1920, one year later: Urine normal, blood pressure, 120-85.

Case 2. Mrs. C. L. W. Referred by Dr. Roscoe Logan. Entered Saint Francis Hospital, March 22, 1921. General edema with a daily urine output for the past six months, averaging 180 cc. Catheterized specimen examined: Reaction acid, specific gravity 1023, albumin trace. Microscopic: Calcium oxalates, casts—hyalin, epithelial and granular. Blood pressure 186-106, with a perceptible aortitis and myocarditis. 3500 cc. fluid aspirated from abdomen.

March 23, 9 a. m., double catheterization with installation of 1 cc. of adrenalin solution into pelvis of each kidney. Following twenty-four hours, urine output 720 cc., blood pressure 138-90, with a perceptible reduction in the oedema. Case removed to residence under care of Dr. Logan, who reports the urinary output at practically normal.

Case 3. Mrs. E. K. February 10, 1921. Age 54. History: For the past four months has been confined to bed—general oedema of lower extremities. Examination, February 10: Abdomen greatly distended, with general oedema of the extremities. Heart—pulse very weak, distinct mitral lesion, with general cyanosis. At 7 p. m. 2400 cc. fluid aspirated from abdomen. February 11, 9 o'clock a. m., 2½ ounces of urine catheterized. Examination: Reaction acid, specific gravity 1028, albumin 5 grams to liter. Microscopic: Casts hyalin, epithelial and granular. At 4:30 o'clock p. m. temperature and pulse subnormal; 1½ ounces urine catheterized from bladder. Double catheterization 1 c. c. of adrenalin solution into each kidney pelvis. Great apprehension as to whether patient would survive the night.

February 12, at 4:30 p. m., elapse of first 24 hours urine output 480 c. c.

February 13, 4:30 p. m., elapse of second 24 hours urine output 382 c. c., blood pressure 125-85.

February 14, 4:30 p. m., elapse of the fourth 24 hours, urine output 1054 c. c., blood pressure 130-90.

February 16, 4:30 p. m., elapse of fifth 24 hours, urine output 1188 c. c. Catheterized specimen examined: Reaction acid, specific gravity 1020, no albumin. Microscopic examination: Few pus and red blood cells, no casts.

February 20, 24 hour urine output 1650 c. c. Blood pressure 148-80.

March 7, urine output 1600 c. c., blood pressure 190-90.

March 8, 1 c. c. adrenalin solution injected into each kidney pelvis.

March 9, elapse of 24 hours. Urine output 1230 c. c., blood pressure 138-78.

March 11, patient was discharged from hospital. No oedema, normal urinary output with stabilized blood pressure of 150-90.

Case 4. Mr. F. J. B., age 38: Referred by Dr. C. M. White. At 3 o'clock a. m., June 4, 1920, patient had first convulsion with total anuria. Diagnosed uremia. Blood pressure 280-120.

At 1 o'clock p. m. patient in profound coma, having had 25 distinct convulsions. Double urethral catheterization and 1 c. c. adrenalin solution injected into each kidney pelvis.

At 9 p. m. patient perspiring freely. An attempt to introduce catheter elicited the first signs of consciousness, as he seemed to realize what was expected and insisted upon voiding, the result being 248 c. c. of urine. Blood pressure 150-110. From thence on patient made an uninterrupted recovery. On July 23, 1920, a thorough examination made at Saint Francis Hospital with the following report: Urine normal, blood normal, serological examination negative, blood pressure

130-80. General gastro-intestinal X-ray normal, thorax normal, teeth normal, tonsils diseased and removed. On December 26, 1920, patient developed lobar pneumonia and died December 28th.

The foregoing cases illustrate that type of advanced toxemia, and are designated as Type 3.

TYPE 2

The following cases represent Type 2, a milder form of toxic involvement:

Case 1. Captain G. G., age 54. Referred by Dr. A. W. Collins. Entered Saint Francis Hospital December 3, 1920, 11 o'clock a. m. History of having had an attack of paraplegia. Blood pressure 285-120 with an average daily urinary output of 3399 c. c. Oedema present in lower extremities. Catheterized specimen examined: Reaction acid, specific gravity 1010, albumin 2 grams to liter. Casts: Hyalin, epithelial and granular. Was only able to catheterize right kidney owing to atresia of left ureter, which later proved by X-ray to be an embryological left kidney. 1 c. c. of adrenalin in solution injected into pelvis of right kidney. At 6 o'clock p. m. blood pressure 210-110. Contrary to patient's former habit of urinating several times during the night, it was only necessary to void once, amount voided 248 c. c. December 4, 9 o'clock a. m. blood pressure 190-95 with disappearance of symptoms, i. e., headache, lassitude and muscular weakness. December 9, injection of 1 c. c. adrenalin solution into right kidney pelvis. Patient discharged from hospital December 10, 1920, with normal urinary output; blood pressure 210-110. Four months have elapsed since treatment. Urinary output normal—free from albumin and casts. Blood pressure, 190-140.

Case 2. Mrs. A. M. S., age 57. History of an illness in 1918, diagnosed nephritis. November 26, 1920, examination: Headache and general asthenia; lower limbs oedematous, blood pressure 190-110. Urine examination: Reaction acid, specific gravity 1023, albumin 4 grams to liter. Microscopic: Casts, hyalin and granular.

November 28, 1920, urethral catheterization and 1 c. c. adrenalin in solution injected into pelvis of each kidney. December 1, blood pressure 140-80. Urinary examination: Albumin no casts. Oedema of legs disappeared. December 17, date of discharge. Blood pressure 130-80. Normal urine with the exception of a faint trace of albumin.

March 21, patient in meantime lost her husband through a railroad accident. With all the sorrow and business responsibility we find upon examination, three months later, blood pressure 145-80, urine normal with exception of a trace of albumin.

TYPE 1

The following cases represent a still milder form of toxemia with no variable change in urine or blood pressure from cases noted above.

Case 1. Mrs. B. B., age 53. Referred by Dr. J. H. O'Connor, November 23, 1920. History of irritable bladder for several years, noticed at times slight swelling of ankles, blood pressure 180-120. Urine examination: Reaction acid, specific gravity 1020, albumin 2 grams to liter. Casts, hyalin. Injection of 1 c. c. of adrenalin in solution into pelvis of each kidney.

November 30, blood pressure 135-90, albumin free. December 15, blood pressure 135-80, albumin free with disappearance of her former bladder symptoms.

March 23, blood pressure 135-80. Urine albumin free.

Case 2. Mrs. L., age 25. Referred by Dr. R. K. Smith. While in training for a nurse albumin was discovered in urine; advised to give up training. Shortly afterward married. One year later became pregnant and at seven months had uremic convulsions, necessitating cesarian operation.

March 15, 1921: Blood pressure 200-120. Specimen of urine examined, 15 grams albumin to liter. Microscopic: Casts, hyalin, epithelial and granular.

March 16, at 1:30 p. m., double catheterization and 1 c. c. of adrenalin in solution injected into pelvis of each kidney.

March 17, 1:30 p. m., blood pressure 135-95. Specimen of urine examined: Reaction, acid, specific gravity 1015, albumin 3 grams to liter.

The cases just cited illustrate in a way the different degrees of toxicity as expressed primarily by the kidneys. For example, let us investigate Case 4 of Type 3—total anuria, high blood pressure with convulsions.

If we could analyze at the time the physiological function taking place within the kidneys, we would, in all probability, find an active glomerular filtration with stasis of the proximal and distal convoluted tubular secretion with a hyperabsorption by the descending and ascending loop of Henli, causing, as it were, an absorption of the water element equal to that of secretion. With a complete retention within the blood of urea and other constituents secreted by the proximal and distal convoluted tubules, plus a hypo-adrenia.

In recapitulation, we will, as in the foregoing, assume that the physiology of the glomeruli is to secrete or filter the water and salts, accompanied by albumin, when its physiological function is interfered with, and will be designated in the following formulas by a plus sign when the secretion is normal or in excess, and by a minus sign when reduced or absent. The foregoing will likewise apply to the proximal and distal convoluted tubules and the descending and ascending loop of Henli:

Formula 1

Glomeruli+
Convoluted tubule.....+ Normal Urine
Descending and Ascending
loop of Henli.....+

Formula 2

Glomeruli+ Anuria. Albumin and
Convoluted tubule.....- Casts when function
Descending and Ascending is re-established.
loop of Henli.....+ Symptoms: Uremia,
Convulsions and
Coma.

Formula 3

Glomeruli- High concentration.
Convoluted tubule.....+ Albumin, Casts.
Descending and Ascending
loop of Henli.....- Symptoms-oedema.

Formula 4

Glomeruli+ Polyuria or normal
Convoluted tubule- fluid output. Albu-
Descending and Ascending min and casts. Symp-
loop of Henli.....- toms: Asthenia, oede-
ma gastro-intestinal
disturbance.

The above formulas may assist in classifying the different phases of renal toxemia as expressed by renal secretion.

SUMMARY

1. In using the word "nephritis," I do so more from usage, for in a strict sense it should only be used to designate a pathological condition resulting from infection within the kidney proper, for example—tubercular nephritis, streptococcic nephritis, etc., whereas the term nephro-toxemia explains a constitutional condition wherein the kidney function is impaired, and the secretion from same becomes the "signal light of danger." Relative to focal infection in these cases, much attention has been given to removal of teeth that

showed granuloma, or other infectious changes—likewise the tonsils.

2. Concerning the rapid action of adrenalin upon the heart, when injected into the kidney pelvis, as registered by the cardiograph, which shows a distinct curve within five seconds: This is evidence that the impulse is transmitted through the sympathetic nerves of the kidneys to the heart, and not by the blood stream.

3. Regarding diet—no restrictions have been made; in fact, the patients have been requested to partake liberally of a miscellaneous diet.

4. If, by the above suggestions and treatment, we are able to make a 10 per cent improvement over and above former treatments, I feel that our efforts have not been wasted.

References

1. Biedl, "The Internal Secretory Organs." Wm. Wood & Co., 1913.
2. Wheeler, "Endocrine," 1917, Vol. 1, p. 140.
3. Meyer, Trans. Pathological Society, London, 1898, Vol. 49, p. 368.
4. Jean Oliver, Journal Experimental Medicine, February, 1921, p. 177.
5. D. N. Eisendrath, "Effects of Collorog in Pyelography," Journal American Medical Association, January 9, 1915, Vol. 64, p. 128.
6. Keys, Jr., "Pyelography Damage Done," American Journal of Medical Science, January, 1915, Vol. 149, p. 30.
7. E. H. Weld, "Toxicity of Pyelographic Mediums," Journal of Urology, Vol. 3, No. 5.
8. J. E. Burns and P. B. Hopkins, "The Effects of Thorium and Other Substances Upon the Kidneys," Journal of Urology, 1918, Vol. 11, p. 145.
9. Cow, Journal of Physiology, 1915, Vol. 49, p. 441.
10. Adis, American Journal of Physiology, 1918, Vol. 49, p. 39.
11. D. J. Macht, "Absorption of Drugs and Poisons from Bladder and Ureters," American Journal of Urology, Vol. 2, p. 211.
12. J. E. Burns and E. O. Swartz, "Absorption from Renal Pelvis," American Journal of Urology, 1918, Vol. 6, p. 445.
13. A. R. Cushny, "The Secretion of Urine," 1917, p. 184.
14. P. K. Brown and W. T. Cummins, "The Etiology of Chronic Nephritis," Transactions Association of American Physicians, 1915.

NEW OBESITY CURES FOR OLD OR THE CHIROPRACTIC THRUST*

By LULU HUNT PETERS, M. D., Los Angeles

"Chiropractic is hereby defined as being that system of adjusting the articulations of the bony framework of the human body especially asymmetries of the vertebrae, for the purpose of removing the cause of disease by the corrections of subluxations, thereby removing the pressure, impingement or tension of the nerves having their passage in, through or around the structures subluxated. The subluxation is corrected with the hands, using the bones of the body, more particularly the spinous and transverse processes of the vertebrae, as levers to which is applied a peculiar adjusting movement—the chiropractic thrust."

When Attorney H. F. McInturff read from the statute books of Oregon the above definition of "chiropractic" at the League for the Conservation of Public Health luncheon at the recent State Medical Meeting, I became imbued with a wild desire to experience the Chiropractic Thrust. I had experienced many of the well known thrusts,

—thrusts into the cold world, thrusts into utter oblivion, etc.—but never had I experienced the chiropractic thrust. I would! I would before I left San Diego! I was not known there—I could do so with a fair degree of safety. In my home town where the C's know me I would not dare to risk it. They would take too great delight in breaking my back. But I was not known in San Diego. So Friday morning while the rest of the medical fraternity were care free and happily playing around Tia Juana, I voluntarily risked my life in the interest of science and ambition.

Presenting myself at the office designated by one of the most alluring of the chiropractic advertisements, I was met by a 235-lb. slip of the deadlier sex who announced that she was the Doctor. Did I desire an examination and treatment? I did. Ushering me into a plush-curtained compartment she handed me an apron with the instruction to undress to the waist and to put it on opened at the back.

Emerging thus attired and clutching my handbag containing my check book and other things identifying me as a medical trust doctor, I was seated on a low stool facing a large chart of the female form, furnished simply but elegantly with a large bony spine fringed with cut-off nerves.

Now I must explain here certain things, to wit: I am totally and entirely healthy. My only complaint in life being that upon repeated and successive exposures to good food I contract the deadly malady known as obesity. Now I had suffered a relapse of that condition after I had been released from duty with the Red Cross in the Balkans, and coming home where I was known to the layman as the inventor of the calorie as a cure for obesity it behooved me speedily and promptly to practice what I preached, and by strenuous diet, exercise and Kellogg-Bergonie electric chair shimmying I had succeeded in getting back to my perfect 38.

Now come back to me sitting before the spinely furnished lady with my back exposed. I had not said much. The "Dr." had not said much. You know they advertise to diagnose everything without asking a question. But as she bends me forward and begins to palpate my spine, knowing that patients are always voluble as to their symptoms, I venture the remark that I have been rapidly losing weight recently, and hearing a great deal about chiropractic I thought I would try it and see if they could find out the cause.

"That so? Well you done well to come to us. They aint no medical doctor who can diagnose

* See editorial on Diet and Health, etc.

diseases—we call them ‘dis-eases’—like us. They seem to be having it in for us, don’t they? You tender there behind the ears? No? How about here? Ah! You have a subluxation of the second cervical! That will account for your bad headaches and blurred vision. You have them? No? Well you will have unless that is adjusted. Lucky you come in time. Yes, the medical doctors won’t let us take the examinations unless we go through their medical colleges, they won’t recognize our colleges. There are some chiropractors practicing here in California but they got in by bribing the state examiners fifty dollars. Yes! Aint it terrible? We don’t believe in drugs and germs and all that superstition so why should we have to go through their colleges? Ah! You tender here? I thought so! A bad subluxation of the ninth dorsal—it’s throwd away out of place! That’s what is causing your rapid loss of weight! The nerves going to the pancreas and spleen are impinged like you would step on a hose. No vital fluid going through them. But the medical doctors will have to stop persecuting us for nobody believes in them no more and we are getting all of their patients—another subluxation of the second lumbar! You get up nights—for your water? No? Well you would soon unless that subluxation is adjusted. You have the beginning of terrible kidney disease. This is all for the examination. Now come in here for the adjustments.”

Still clutching my bag I am directed to step on the foot rest of a padded segmented upright-standing table. Taking my bag from my reluctant fingers—me still keeping my eyes on it—she puts it on a chair and places my hands on some side handles and with a crank lowers the table with its one hundred and fifty pounds of medical trust to the horizontal. She tells me to relax. Expectantly, but not terribly happy, I realize my ambition to experience the C. T. is coming.

Placing her hands on my lumbar region which is sagging slightly over the space of the segmented table, with a terrific sledge-hammer action 235 pounds of persecuted chiropractic comes down on it. Mon Dieu! Gottimhimmel! She must have recognized me and is going to kill me, I begin to suspect, as I spring back through the space.

“Was that the Chiropractic Thrust?” I tremblingly ask.

“Yes, did you hear the tissues as they were torn away?”

“No, but I felt them,” I feelingly respond. “I think that is enough for one treatment, isn’t it?”

“No, two other adjustments,” and she comes down on the region of my ninth dorsal. Nnnnnn! Now the cause of my rapid loss of weight is adjusted.

“That’s enough surely?”

“Not yet. Turn your head so.” Creek! Crack! Mon Dieu again! Now I am convinced that she knows me as I hear as well as feel the “tissues being torn away.” Surely she intends to break my neck! But no. She lets me up and semi-dazed but fully adjusted I stand, glad to be alive.

Now I am ushered to another room where sits a sad-faced, agreeable young man, the male chiro of the firm who will explain to me all about myself from the chiropractic standpoint she tells me.

Giving me an intensely searching look which I answer with a blank, innocent baby stare which reassures him I am not an agent of the trust, and seeing from my face that I have suffered—I’ll tell the world I have suffered—, he takes from his desk a wobbly human spine put together with felt discs and with a rubber tubing running through the center. Manipulating this deftly he shows me how my nerves have been pinched, and how all of my tissues have been starved on account of this, thus accounting for my loss of weight. He demonstrates to me very logically and beyond a shadow of a doubt that all diseases are due to subluxations and consequent impingements. (Even venereal diseases? Yes, even venereal diseases!)

Coming back to my symptoms he tells me that it will take a course of the adjustments before my vertebrae will stay in place, and how he hopes I will come and get back perfect health for there is nothing like chiropractic. I agree with him! I sit fascinated, hypnotized, by the flexible spine as it compresses the nerves and adjusts and readjusts itself under his facile fingers. I forget that my spine is not put together loosely with felt discs, that ordinarily it is not in the hands of a nimble chiropractor, and that if my vertebrae could slip back and forth so easily and compress my nerves so readily and if they could be adjusted by anyone that I would want the most highly educated, highly trained, scientific specialist the world could produce. I have no ambitions to be taking my harp lessons prematurely.

I forget all this and I think that we must stop this “persecution” of these noble healing advertisers. Then I think of the 235-pound chiropractic thrust I got,—and I think what a stupendous fake the whole business is. And I tell him when he asks me to come back that he has convinced me that there is something in chiropractic, but because I still find joy in life I escape without telling him what I consider it is.

* * *

I am terribly interested in this question of obesity. This theory of the subluxation of the ninth dorsal vertebrae attracts me strangely. I shall devote the remainder of my life to finding how you get that way, and thus add a sublux to my calorie.

AMEBIC ABSCESS OF THE LIVER.*

By P. K. GILMAN, M. D., F. A. C. S.,
San Francisco, Calif.

Based upon records of cases occurring in our service in the Philippine General Hospital, Manila, P. I., and from the Surgical Clinic, Stanford University School of Medicine, San Francisco, California.

OUTLINE.

1. Definition
2. Etiology
 1. Amebic infection
 2. Predisposition
 3. Distribution
 - a. temperate climates
 - b. tropical climates
3. Pathology
4. Symptoms and Physical signs
 1. General
 2. Local
5. Diagnosis
6. Complications
7. Treatment
8. Conclusions

Too often considered a disease limited to tropical or subtropical localities, amebic abscess of the liver is not rare in many parts of the United States. Two cases have come to operation in the surgical clinic at Stanford University in this city during the past ten months, two more in private practice and there are at least three localities in this state from which several cases of amebiasis have come for diagnosis and treatment.

1. *Definition:* Amebic abscess of the liver is an hepatitis going on to suppuration due to the ameba histolytica, the patient not necessarily giving a history of a preceding attack of dysentery.

2. *Etiology: Amebiasis.* The finding of amebae in the walls of the abscess and in the discharges under certain conditions called attention to them as the cause of the hepatitis. This was further emphasized by the fact that the contents of these abscesses do not contain bacteria.

Since much emphasis has been laid upon the relation which exists between dysentery and liver abscess one is apt to lose sight of the fact that there are latent and marked infections of the bowel with amebae unaccompanied by any dysenteric symptoms, indeed, quite the opposite. In some cases it is impossible to demonstrate the organism in the stool but it may be recovered from the abscess.

2. *Predisposition:* All writers agree amebic abscess of the liver is more common in foreigners than in the people native to the tropics, that it occurs more frequently in males than females and usually manifests itself in adult life although our series includes cases varying from ten to eighty-six years.

Alcohol by some writers is given a prominent position among the predisposing factors in liver abscess, by some equally qualified to express an opinion it is not considered of great moment.

In our series of cases alcohol was not a factor of any importance.

Occupation is of little importance.

In the United States amebiasis is endemic, the largest series of cases in addition to those from the Southern States having been reported from Maryland and New York State.

The time between infection with amebae and the development of the abscess varies greatly. Some cases apparently develop symptoms of abscess concurrently with a dysentery. In others years may elapse—over fifty in one case of this series.

3. *Pathology:* From the bowel amebae pass to the liver by way of the portal vein, any other channel being unusual, although their presence in the gall bladder (demonstrated by Crowell in Manila and recently by Dr. Herbert Gunn) in the bile and ducts as well, shows that even in cases free from abscess the liver is involved. Where abscess results the organism produces a conglutative necrosis of the liver cells resulting in a structureless granular debris which later liquifies and forms a ragged-walled abscess cavity more or less spherical in form. At first of small size, the cavity enlarges by an extension of the necrosis if the abscess is solitary or by the union of two or more necrotic areas from breaking down of intervening partitions of damaged liver substance where more than one focus is present.

The size of the abscess varies greatly, being at times limited only by the size of the liver which has been converted into a sac of broken-down necrotic tissues. In cases of multiple abscess their size is generally less. From single abscesses we have drained between three and four liters of material.

Formerly amebic abscess of the liver was regarded as occurring singly, but more complete statistics given by observers in various countries show they may occur in great numbers, cases being on record where the abscesses could only be counted with difficulty. Single abscess cavities apparently predominate, the proportion being about three or possibly four to one.

The majority of abscesses occur in the right lobe of the liver, as one would expect from a consideration of the relative size of the lobes. Of this lobe the upper portion is most frequently affected, then apparently the lower.

When an abscess is centrally located and completely surrounded by liver tissue that has undergone little or no change the structures surrounding the liver are not altered. When, however, an abscess approaches the surface of the liver processes are set up which result in a reaction on the part of contiguous structures. Adhesions are of frequent occurrence, though they are not always found even in the case of a very large abscess separated from the liver capsule by only a thin layer of liver tissue. Where changes are set up in neighboring structures their symptoms may be of diagnostic value, irritation of the diaphragm in an abscess of the upper portion of the lobe, for example, producing cough and later signs in the right base from extension of

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

the inflammation and involvement of the lung tissue.

In our cases of abscess situated toward the lower part of the liver the adjoining viscera in the upper abdomen have been found firmly adherent to the surface of the liver, so firmly at times that the abscess was inadvertently opened when attempting to separate the adhesions.

The content of an amebic abscess is practically diagnostic. When evacuated it is thick, creamy but not homogeneous. Of a dark chocolate-brown color it contains lighter colored particles varying in size from minute flakes to good sized lumps of a yellowish shade. There are usually present streaks of brighter blood as well as numerous darker blood clots; at times bits of necrotic liver tissue. The odor of the freshly evacuated pus is not offensive unless the colon bacillus has gained a foothold, when the entire picture is modified.

Microscopically the pus is largely made up of broken down liver tissue and granular debris. Red blood cells are numerous, leucocytes and often crystals. The pus is bacteriologically sterile in the majority of instances. Amebae may be present though not always in the first pus obtained. When not encountered at once they are often found in the discharges after one or two days when the material lying close to the walls of the cavity is extruded onto the dressings.

4. *Symptoms and Physical Signs.* At times the patient's symptoms and physical signs point definitely to the seat of trouble. This is by no means the rule, however, and often this disease is diagnosed only by elimination. Both objective and subjective features of the disease present in great variety and no one sign or symptom may be considered pathognomonic. Further we have encountered cases of good sized abscess where there were slight if any symptoms.

As was mentioned above, a history of dysentery is not necessary nor does its absence rule out infection by the organism. On the contrary, it should be well understood that amebae may be present in the large intestine with more or less regularity of the bowels or even constipation, or with the production of disturbances referable to the digestive tract higher up.

When a history of dysentery is given, the time at which this occurred previous to the symptoms of an abscess may vary greatly, the shortest period to elapse in our cases being two weeks, the longest fifty-two years. Further, the period of acute symptoms varies greatly in different individuals, from a few days to three or four months; the symptoms themselves varying from slight discomfort to complete incapacitation.

Cases of well developed abscesses may show all the symptoms and signs pointing definitely to the liver condition, while on the other hand cases of equally developed abscess fail to reflect the characteristic picture.

Among the important symptoms usually considered to make up the picture of an hepatic abscess are fever with or without rigors, sweating, gastric disturbances, pain, cough and jaundice.

Apparently there is no characteristic fever in liver abscess. Fever of a remittent type was present in the larger number of our cases, the elevation at no time being extreme. Some cases showed a practically normal temperature with well developed abscesses. In none of this series of cases was a marked rigor noted. Several patients complained of chilly feeling at times but this symptom apparently deserves no special prominence.

Of possibly greater importance is sweating. This symptom may be unnoted unless marked. Most patients show some excessive skin moisture, very often at night. The last three cases of our series have had marked sweating, two of them saturating the night clothing and bedding.

Associated disturbances of the upper gastrointestinal tract may at times obscure the diagnosis. These result from pointing of the abscess downward, accompanying inflammation of a portion of the lower surface of the liver with involvement of neighboring viscera by adhesions. In addition to the actual liver involvement, amebae in at least some instances involve the lining of the gall bladder. Crowell first called attention to this and recently Dr. Herbert Gunn and I have demonstrated this in five cases in which this organ was removed in the treatment of amebic disease. In these cases amebae were demonstrated not only in the mucosa of the gall bladder, but in two in the drained bile from the ducts after operation.

Gastric disturbances such as nausea with or without actual emesis are not unusual. In one case of an abscess pointing toward the epigastrium in a man of eighty-six with signs of increasing pyloric obstruction accompanied by vomiting, an exploration was done for a possible malignant disease of the stomach. Draining of a large amebic abscess and freeing of adhesions cleared the condition completely with cessation of all symptoms.

The pain in abscess of the liver is important though it may vary from a full feeling in the hepatic region to sharp prostrating pain of usually an intermittent character. Pain again is modified according to the nearness of the abscess to the liver surface and, more important, to the portion of surface involved, the involvement again affecting neighboring structures. An upward pointing will involve the diaphragm with discomfort referable to irritation of this structure, for example. This not only produces respiratory modifications but is increased by heightened diaphragmatic action—such as in coughing. Pain further may be of the referred type to the back, shoulder and scapular region.

On the other hand it must not be thought that liver pain indicates abscess. In cases of dysentery apparently without abscess the patients have complained of a sense of fullness in the liver region and in at least one the patient could foretell his exacerbation of dysentery by a sense of fullness and weight in the upper right abdomen pointing to liver involvement. In many cases the discomfort in the liver region is increased by the taking of food.

In a case of liver abscess at present under treatment cough has been a most persistent and annoying symptom. In over a fourth of our series cough has been present. While most of these cases have shown secondary diaphragmatic involvement, in some the abscess has pointed downward. In these probably the general hepatic distension has been the cause.

The appearance of the patient varies greatly within wide limits. Some are ill and show every indication of it. Others show but little. On examination the most important sign is increase in liver dullness. The direction of this increase depends again on the direction in which the abscess points. In the majority of our cases a definite tumor was felt below the right costal margin and when the abscess was large and the intervening abdominal wall thin, fluctuation could be elicited. With the edge of the large liver felt below the ribs, pressure and percussion over it usually causes pain, and an increased rigidity of the superimposed musculature is generally present.

With an upward enlargement of the liver the X-ray is an important aid to the physical findings. The dome-shaped increase in the involved lobe is often quite striking, as shown in comparison to the opposite diaphragmatic curve.

While liver enlargement is important it must not be forgotten that abscess may occur with no appreciable increase in size of the organ. In some of our cases no change in liver bulk was noted and in at least one with a central abscess this remained undiscovered at an exploratory operation as there was nothing present to call attention to the liver.

With well advanced abscess some degree of jaundice is usually observable. This may be slight and only noted after the patient is convalescent. Then the improvement in color will often emphasize the fact.

Pulmonary symptoms and signs are often of importance. The former—pain, cough and dyspnea are frequent. The signs vary from those of a slight congestion to complete consolidation of the right base. In five of our cases the abscess ruptured into the lung, one following an operation.

A low leucocyte count is apparently the rule in tropical abscess of the liver. Twenty-one of twenty-eight of our cases examined showed a count below fifteen thousand, only two cases having a count above twenty thousand. One case showed a count below four thousand with 79 per cent polymorphonuclears. This case recovered promptly after drainage of a large abscess of the right lobe.

The differential count does not assist us, as this apparently varies within wide limits.

5. *Diagnosis:* Probably none of the so-called tropical diseases is so frequently overlooked as is liver abscess. Given a case with a history of dysentery, with progressive emaciation, drenching sweats, a sense of weight or fullness in the lower costal region, rigors, cough and, on examination, furred tongue, an enlarged tender liver, fullness of the side and a leucocytosis, and the diagnosis is plain.

On the other hand the symptoms and physical findings may present in great variety. No one finding may be regarded as positive and too often the sum of all the signs leaves us puzzled. Indeed it is not uncommon to encounter cases with well developed abscess exhibiting few if any marked symptoms, local or general. We have drained large abscesses in cases of exploration where a positive diagnosis could not be made. Too great emphasis cannot be laid on an exhaustive study of the case. Exploration of the liver with a needle should be resorted to in doubtful cases. This procedure is safe and easily accomplished and does no harm. In fact certain good may result in cases of hepatic congestion.

Of the conditions requiring differentiation three classes exist. (1) Other diseases of the liver and bile passages. (2) General conditions associated with an enlargement of the liver and (3) diseases of adjoining structures.

In the first group occur syphilis, especially the luetic liver with one or more large gummata; malignant disease presenting as large semi-necrotic growths; hydatid disease, particularly those cysts which have become infected; malarial hepatitis; suppurative disease of the liver, the gall bladder and bile ducts. Appropriate clinical and therapeutic tests indicated in these conditions should serve to differentiate the greater number of cases.

In the second group occur the anemias and other blood diseases associated with hepatic enlargement.

In the third group are cases of restricted empyema, subphrenic abscess, abscess of the abdominal wall and diseases of the right kidney producing an enlargement of the organ.

Too great emphasis cannot be made on careful and repeated examination of the stools in a case suggesting liver involvement. The discovery of amebae at once suggests the possible condition.

6. *Complications:* In cases where the abscess has drained itself through the diaphragm and pleura and ruptured into a bronchus the picture may be obscure. Not always has the character of the sputum been diagnostic as regards amount and appearance. Gunn and I have two cases under treatment at present where the sputum has differed at times very little from that produced in an ordinary bronchiectatic cavity, or in tuberculosis. The early X-ray findings were not such as to point to abscess. Later there was shown enlargement of the liver but no infected tract was demonstrable from the liver to the lung. In each of these amebae were demonstrated in the sputum and the diagnosis thus established.

Rupture of the abscess may occur into the peritoneum where insufficient adhesions have been formed to limit the process. Rupture has occurred into the gastro-intestinal tract. In one of our series what appeared at first to be an abscess of the prostate developed until an opening was necessary midway between the umbilicus and pubes. The pus was typical of liver abscess and contained amebae. With the subsidence of the inflammation an indurated tract could be felt beneath the right abdominal wall extending from

the lower surface of the liver to the mass in the pelvis.

7. *Treatment:* The treatment of this condition is surgical where the abscess has attained any marked size. Treatment of the hepatitis before the formation of an appreciable abscess cannot be too strongly insisted upon. In addition to local and symptomatic treatment this consists of emetine in connection with neosalvarsan as emphasized by Gunn.

The surgical procedures vary from simple aspiration to free drainage of the abscess cavity. Whatever form of treatment be instituted, sufficient relief from pressure within the abscess must be obtained to restrict absorption and arrest spread as evidenced by a lessening or cessation of the symptoms.

Personally we have had little experience with any but the larger surgical measure of exposing the liver, exploring it directly and freely draining the abscess. Two main routes are available, the first one through the chest wall, and the second, and we believe preferable, through the abdomen. Objections to the transpleural route are that it exposes but a limited portion of the right lobe and if the abscess is not situated in this immediate region it may be difficult of access; also subsequent trouble with the pleural surfaces and adjoining lung is not unknown.

In our experience more satisfactory results have been obtained and a better exposure is possible when the abdominal route is followed. Another important consideration favoring this route is the opportunity for exploration of the gall bladder, bile ducts and appendix. This is of great importance when we now know, as stated above, that these structures may be the seat of amebic infection and inflammation.

We have been accustomed to use an upper right rectus incision through which the entire liver may be palpated. If the abscess is not obvious the liver may be explored in all directions by an aspirating needle and glass syringe. Once the abscess is located, a special trocar, modified from Oschner's gall bladder instrument, is pushed into the cavity. A rubber tube sufficiently long to pass into the neck of a bottle at the side of the operating table is connected to the outflow tube of the trocar and usually the creamy, brick-red pus flows freely. If the flow is not free we attach a large glass syringe to the tube and draw out the pus until the cavity is emptied as completely as possible.

The trocar is now separated by unscrewing the outer portion bearing the outflow arm and piston and leaving the longer distal tube within the cavity. A special stylet with expansible end is now fastened into the projecting end of the tube to act as a handle and over this is passed a rubber tube with rounded edges similar to the end of a stomach tube. This tube hugs the metal trocar tube and is gently forced along the latter until it enters the abscess cavity, when the remaining portion of the trocar is removed by pulling upon the stylet. This leaves a rubber tube of

large caliber extending from well within the abscess cavity to a distance of several inches outside the abdominal wall. During all these manœuvres of course only the immediate surface of the liver is exposed at the point of drainage, the rest of the liver and abdomen having been thoroughly walled off with gauze. By this method there is no escape of pus and soiling of the peritoneum.

In this connection some writers have advocated a two-stage operation, exposing the liver surface and packing down to this to cause protective adhesions. The actual drainage of the abscess is then performed one or two days later. We have always performed the entire operation in one stage and have experienced no trouble as the pus in the great majority of cases is free from bacteria.

The wound is closed about the drainage tube after surrounding the latter with gauze strips impinging upon the liver surface, and the tube connected by a glass cannula to a second tube leading to a bottle that is suspended from the bed frame at one side. In this manner large amounts of drainage are collected in the vessel and frequent changes of dressing and wound soiling obviated.

If the abscess is efficiently drained there will be immediate improvement in the symptoms. The subjective sensations will moderate, previous fever will drop and a leucocyte count fall. Should this not eventuate, drainage is insufficient or incomplete and the presence of another collection must be thought of.

Following operation with drainage emetine should be used. It seemed in our cases to hasten the convalescence and apparently to exert a favorable influence upon the condition by causing the amebae to disappear earlier from the drainage.

In those cases where rupture of the abscess has occurred into the lung some are cured spontaneously. In others supplementary drainage below may be required.

CONCLUSION.

1. Amebiasis and resultant abscess of the liver is by no means confined to the tropics. It occurs not uncommonly in the United States. In California several cases have come under our observation which have never been outside the state.

2. In addition to causing abscess of the liver the ameba is able to set up changes in the mucous membranes of the gall bladder, bile ducts and appendix. It is possible that every case infected by amebae harbors the organism not only in the intestinal tract but the liver and bile passages even when no gross pathological changes are produced in these structures.

In incurable cases of intestinal amebiasis Gunn has demonstrated the organism in the mucosa of the appendix, gall bladder and excreted bile after cholecystectomy.

3. No sign or symptom is characteristic of the disease. It is only by a careful consideration

of all available data and often by elimination that the correct diagnosis is reached.

4. The prognosis with the institution of early treatment is encouraging. A complicating dysentery renders it less favorable. In our earlier cases the mortality was about 30 per cent. In our later cases this has been considerably reduced.

TREATMENT OF BLADDER TUMORS BY RADIATION AND FULGURATION*

By R. L. RIGDON, M. D., San Francisco, Calif.

I began the use of radium in tumors of the bladder about one year ago. Since that time eight patients have been under treatment. Some of the patients have had radium alone, some radium with fulguration and some fulguration only. The diagnosis was made by cystoscopic examination.

In none of the cases was any tissue excised for histological study. It is realized that this omission was a very serious handicap in any study of the efficacy of the radium rays in specific types of tumors, but on the other hand, obtaining of worthwhile specimens is attended by considerable traumatism, which, to say the least, does not add to the comfort of the patient. Moreover, in making microscopic studies of specimens, our attention is always called to the fact that a tumor may show a normal arrangement of its elements in the greater part of its extent, and cancerous changes in only a small section, and this section is by no means always the base. It, therefore, seemed wise not to obtain specimens that histologically might be misleading, but instead to depend upon the percentage relation of the various forms of tumors and their response to treatment.

None of these patients has been treated over a sufficient length of time to warrant any statement as to complete cure. It is well known that these tumors have marked tendency to recur, as has been illustrated in two of this series.

Case 1. Age 72, widow. Referred by Dr. W. F. Cheney. First seen September, 1919. Her illness began about 1911, manifesting itself by hematuria. Has had repeated attacks ever since.

At the date of examination she had a very intense cystitis, superimposed upon the bleeding. Cystoscopy showed a rather large tumor, springing from the left ureteral orifice and spreading across the floor of the bladder to the right ureteral orifice and cauliflower in appearance. A small tumor was located near the summit of the bladder.

Fulguration was begun and continued at intervals until December, 1919. At this time cystoscopy showed the tumor had disappeared, leaving in its site an area very much resembling an ordinary inflammation. So much was this the appearance that a consultant who saw it at this time rather expressed a doubt if there had ever been a tumor, but that the whole process might have been inflammatory.

The patient went home and returned for examination in May, 1920. At this time there had been marked recurrence, which was now characterized by multiplicity. Small tumors were scattered over the base and lateral walls. Radiation and fulguration have been employed since that time,

radium having given much the more satisfactory results. About 2300 mg. hours of radium have been applied.

Today the patient is symptomatically comfortable. The tumors have all disappeared except a very small one on the right base. This is now so small that only by careful inspection can it be seen.

Case 2. Age 64, widow. Referred by Dr. W. A. Banks. First seen August, 1920. Dates her illness from 1917, when she had an attack of hematuria. Has had repeated attacks of bleeding since that time, with frequent urination. The hemorrhage has been so profuse that the patient was very much exsanguinated with the usual symptoms of dyspnoea, etc.

Cystoscopy showed a cauliflower-like growth on the right side of the bladder base, surrounding the right ureter and about the size of a large walnut. Between the date of the first visit, August, 1920, and December, 1920, 800 mg. hours of radium was used.

The last cystoscopy made in November, 1920, showed the tumor had shrunk to a very small mass. All the patient's symptoms had disappeared. She was able to resume her duties as housekeeper. Her exact condition at the present time is not known, as she has not returned for examination.

Case 3. Age 56. Female. Referred by Dr. Geo. P. Hall. First seen July, 1920. Present illness dates back about one year. Its onset was marked by hematuria. Has had repeated attacks since.

Cystoscopy showed a small tumor apparently protruding from a slightly patent urachus. No other abnormality was present. This tumor was fulgurated on four occasions. Its location made intravesical approach rather difficult, but the patient very decidedly objected to an operation. At the last cystoscopy the tumor had disappeared and the patient was feeling well.

Case 4. Age 57. Male. Referred by Dr. Wm. Quinn. First seen January, 1921. Present illness began four years ago. Its onset and course were marked by hematuria and frequent urination.

Cystoscopy rather unsatisfactory, but a large tumor could be seen occupying the right lateral wall and encroaching upon the ureteral orifice. It was felt that this tumor was unfavorable for radiation or fulguration, but since surgery offered an even less chance for relief, radiation was advised. Up to the present time 1800 mg. hours of radiation have been applied. The patient feels well except for a persistent frequency of urination. There has been almost no bleeding since the first treatment.

Case 5. Age 56. Female. Referred by Dr. Geo. P. Hall. First seen July, 1920. Her present illness began in 1918, manifesting itself by urinary frequency and hematuria. These symptoms persisted.

Cystoscopy revealed a small pea-sized tumor on the right posterior wall, well back of the ureteral orifice. The tumor was fulgurated on July 15 and September 13. On the latter date cystoscopy showed the tumor had practically disappeared. Its base was slightly fulgurated.

The patient returned for examination February 12, 1921. At this time the cystoscope showed the tumor had returned and was a little larger than when seen the first time. Fulguration was done. Examination on March 14 showed the mass very much reduced. It was again fulgurated. The patient is comfortable and has had practically no bleeding since the first fulguration.

Case 6. Age 76. Male. Referred by Dr. F. E. Gallison. First seen February, 1921. His symptom of hematuria began one year ago and this symptom has persisted; the bleeding has become quite profuse. The diagnosis of bladder tumor was made by Dr. Meade, who recommended operation rather than radiation. At my examination the tumor

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

was found exactly as described by Dr. Meade. It was broadly pedunculated, solid and about the size of a small walnut. It was located just back of the left ureteral orifice.

Owing to its position and the uncertainty of permanent relief by means of surgery, radiation was advised. This has been carried out; 400 mg. hours of radium have been used. On March 26 the size of the tumor was much decreased. The remaining small mass was fulgurated. The last cystoscopy was on April 27; at this time the tumor had almost entirely disappeared. The patient has no bleeding and is feeling well.

Case 7. Age 71. Male. Referred by Dr. F. B. Carpenter. First seen January, 1921. Symptoms had been present for two years, consisting of marked hematuria. He had been through a course of fulguration at a local hospital without relief.

Cystoscopy showed a growth which surrounded the vesical orifice and apparently involved the prostate. Because of the profuse bleeding a good examination was not possible.

On January 10, 1921, he was given 400 mg. hours of radiation. The patient has not returned for further treatment. His physician reported that he had a marked systemic reaction, which lasted for a number of weeks, but which finally subsided. His bladder symptoms were markedly relieved.

Case 8. Age 47. Referred by Dr. I. W. Thorne. Consulted me December, 1920. Patient stated that for two months he had observed a reddish discharge at the meatus at the close of urination. He was treated for two months by irrigations and massage before a cystoscopic examination was made. Cystoscopy, February 5, 1921. This revealed a small tumor just posterior to the right ureter, raspberry-like in form and rather soft. Since that date 300 mg. hours of radiation have been given by holding the element in direct contact with the tumor. On March 26 the tumor remained about the same as in the beginning; at this time fulguration was done. On April 21 the mass was much reduced in size.

In 1908 Watson and Cunningham published their system of Genito-Urinary Diseases. This antedated the effective use of fulguration or radium. In Volume 1 is given a comprehensive review of the then status of tumors of the bladder; their conclusions as to prognosis are voiced in the following words: "Tumors of the bladder, irrespective of their nature, cause the death of all patients, pactly speaking." As contrasted with this appalling helplessness of medicine or surgery, at even so short a time ago as 1908, we may compare the following extract from an article by John P. Geraghty in the Southern Medical Journal, 1920, Volume 13, No 7. He is reporting upon 170 cases of bladder tumors, treated during the preceding four years and a half. He says: "It has been our experience that all the papillomata, either benign or malignant, together with the early carcinomata, usually respond to vigorous radiation. The more malignant the tumor, the greater amount of radiation required to affect its disappearance."

We thus find in twelve years—from 1908 to 1920—a marked reversal of opinion as to the amenability of bladder tumors to treatment. This radical change was brought about by the increasingly efficient use of fulguration and radium.

Upon reviewing the reports of the various surgeons, we find a very general agreement upon some essential points:

(1) For therapeutic purposes bladder tumors

are divided into Papillomata, Carcinomatus Papillomata, Papillary Carcinomata, Carcinomata.

The other varieties of tumors are rare.

(2) Papillomata, either benign or malignant, respond very readily to fulguration or radium. Carcinomata are not readily influenced by either fulguration or radiation.

(3) There is a marked tendency to recurrence after fulguration. This necessitates frequent examinations.

(4) When recurrence occurs, it may be in form much more amenable to fulguration than was the original tumor.

A summary of my own eight cases shows:

Three were treated by radium only.

Two were treated by fulguration only.

Three were treated by fulguration and radium.

All of the patients have shown marked improvement of symptoms. In seven there has been a marked decrease and in three of these an apparent disappearance of the tumor. In one the tumor probably remains unchanged. It is too early to talk of permanent cures. A subsequent report may show the ultimate results.

PERIPHERAL NERVE SURGERY*

By CHARLES L. TRANTER, M. D., San Francisco

A great advance has been made in the treatment of peripheral nerve lesions, due to the peculiar conditions afforded by the recent war. Special hospitals were established, where large numbers of patients were kept under observation for prolonged periods, affording opportunities never before provided. Our ideas concerning the relative value of different points in the examination of nerve injuries have been clarified, and it has been definitely shown that the direct end-to-end suture is the logical procedure, and that it is usually possible.

In a discussion of peripheral nerve surgery the questions of diagnosis and of post-operative treatment must be given the same prominence as the operative procedure itself.

1. *Diagnosis.*

The question of diagnosis is not merely concerned with the decision between operation on the one hand and conservative treatment on the other hand, but it concerns the surgeon after he has exposed a lesion and must decide between a neurolysis and a resection and suture. There is no more difficult problem than this decision after a lesion consisting of a nerve enveloped in a mass of scar tissue has been exposed. The surgeon with whom this responsibility rests must know whether there are signs indicating the penetration of neuraxones through the lesion. Only as the result of personal examinations can the operator make intelligent decisions in a considerable number of nerve lesions.

Recently it has been realized that certain signs are of greater significance than others; and furthermore, a few signs which were formerly thought to be of great value are now realized to be of little help in arriving at the diagnosis. It is now known that the chief practical value of the electrical reactions when dealing with peripheral

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

nerve cases is in the differentiation between functional and organic cases. Certain new signs have been added as a result of the war experiences.

The examination with regard to voluntary motion, sensibility, the formication test, and muscle reflexes can not be too carefully carried out. On account of the importance of these signs, the following statements concerning them are made. The other signs, such as attitude, tendon reflexes, atrophy, trophic disturbances, and the electrical reactions should not be neglected.

(1) *The Examination of Voluntary Motion.*

This can not be too carefully carried out and the functions of individual muscles should be carefully tested, both looking for contraction and feeling for movement of the tendon. The proper position should be chosen and the influence of gravity and friction should be guarded against by the use of smooth, powdered surfaces as supports for the limb.

(2) *The Examination of Sensibility.* Here the use of standard methods is necessary and it has been found of great practical advantage to adopt arbitrary methods. In the Army a small camel's hair brush was used for the detection of tactile sensibility, while the instruments designed by Ingham were adopted for the estimation of pain and pressure sensibility. These instruments consisted of a needle esthesiometer controlled by a spring so that pressure of 15 grammes can be given. This is sufficient to cause a sensation of pain, but not visibly to indent the skin. For the estimation of deep pressure an esthesiometer capable of exerting 1000 grammes on a surface equal to a quarter of a square centimeter is used. There is more or less variation in the sensory distribution of different nerves which must be allowed for. There are certain points, however, of great advantage. For example, with a loss of pain and touch sensibility, including the whole area supplied by the ulnar nerve, the presence or absence of sensibility to pressure of 1000 grammes in the little finger alone may distinguish between a partial and total interruption.

(3) *The Formication Test.* This test, also known as Tinel's sign, is still not understood by all and is very frequently misinterpreted. It may be the only sign to indicate whether or not axones have penetrated a scar-enveloped or neuroma-containing nerve exposed at operation. This sign may be defined as the presence of formication in the cutaneous sensory distribution of the nerve elicited by mechanical stimulation of regenerating axones by pressure or percussion over the nerve

trunk, either at or below the level of the lesion.

This test tells us many things. When no formication is elicited at a level lower than that of the lesion after some two or three months, it indicates absence of regeneration and thus surgical intervention. If the rate of regeneration and the intensity of formication are not normal, operation is likewise indicated. If the scar-enveloped nerve or a small neuroma in continuity is exposed at operation, and if this nerve be one in which regeneration is difficult, the presence of satisfactory formication below the lesion would indicate a neurolysis; while the absence of formication would indicate resection and suture.

After operation regeneration can be followed from month to month by the descent of formication, a most comforting thing to patient and surgeon alike.

(4) *The Muscle Reflexes.* We have three trustworthy indications for regeneration which appear in the following order: (a) satisfactory descent of formication; (b) the reappearance of normal muscle reflexes, and (c) the return of voluntary motion. These muscle reflexes are contractions in the whole muscle or in a division of the muscle, and are not to be confused with the small localized contractions called idiomuscular contractions, and which signify degeneration of muscle.

In following a post-operative case or one in which spontaneous regeneration is occurring, we first have descent of formication and then, with the penetration of motor fibres into the muscle, we begin to get return of muscle reflexes. This happens from a month to three months before the return of voluntary motion, but with the re-appearance of muscle reflexes we can rest assured in almost every case that we will get restitution of function to a considerable degree.

Thus we have added to our armamentarium an extremely valuable and reliable sign of impending return of motion.

(Concluded in July)

ORGANIZED MEDICINE FOR THE MASSES A FEATURE OF PRESENT- DAY MEDICAL PRACTICE*

By E. W. CLEARY, M. D., San Francisco

I will discuss Medical Organization from the viewpoint of a doctor, and also in so far as professional bias will permit me to get his position, from the viewpoint of the layman who desires the best that modern medical science can offer.

At the opening of the Cleveland Clinic, Dr. Wm. J. Mayo said: "Our failures as a profession are the failures of individualism. Medicine's place is fixed by its service to mankind. If we fail to measure up to our opportunity, it means State

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Medicine, Political Control, Mediocrity, and loss of professional ideals."

Medical practice has passed in two decades from the jog trot era of the horse and buggy to the frenzied era of the high-speed motor car and the aeroplane. Increase in scientific details and in cost and complexity of equipment has been proportionate to increased rate of transportation. The doctor of twenty years ago was hard worked. His mental capacity was heavily taxed. Medical men of today are as well endowed mentally and physically as their predecessors, but the capacity of the human brain has not changed. Doctors are not today equal to seeing several times as many patients, considering twice as many details on each case, and covering at least five times as much literature as their fathers did in the same number of hours. They become too jaded to cerebrate. Mechanical routinism is the natural outcome.

Dr. Vaughan of Ann Arbor has pointed out that rural practitioners made many contributions to medical knowledge during the first three-quarters of the last century. Since that date, practically all important contributions have come from large centers. Discoveries are not now being made by individual practitioners, because individual practitioners have become too busy to think, and have lost to a lamentable degree the habit of observation.

Specialization and co-operative effort seem to be the only solution. The individual practitioner is taking refuge in co-operative organization from a situation with which it has become impossible to cope satisfactorily single-handed.

Large centers have, for a long time, experienced more or less of the good and evil of group practice. Staffs of medical colleges and of hospitals and loose, unorganized groups of specialists referring cases within their small cliques are more or less imperfect forms of group practice. Now the co-operative type of organization promises to become widespread.

Doctors consider of foremost importance those advantages which enable them to render better service to their patients. A questionnaire was sent to each of twenty-four representative medical groups. Replies were received from nineteen groups scattered in fifteen different states and in the Hawaiian Islands. Sixteen replies named better care of patients as the primary advantage of group practice. The following advantages are claimed for group service:

1. Better service to patients at less expense.
2. Better records.
3. Contact with general field maintained while maximum of energy is conserved for chosen specialty.
4. Freedom from onerous detail of handling accounts.
5. Definite stabilizing effect on income.
6. Relief from unremitting physical and mental strain of individual practice.
7. Leave of absence possible without neglect of patients or demoralization of practice.

8. More influence for good on community standards.

Through the exactions of individual practice the doctor, who, by training, experience and sympathies should be an invaluable civic asset, becomes in many instances a civic nonentity. Insofar as group practice may overcome this situation, it will serve the public well.

Opinion that group organization stabilizes the doctor's income is practically unanimous. That it tends to increase his income is doubtful. Stabilization is the more important advantage. The average doctor does not worry so much because of the amount of his income as because of its instability. Assure him a modest, reasonably stable income and much of the rancor of competitive medicine will disappear.

Some of the worst evils that beset our profession are the result of ignorance of business procedure. Our best medical colleges continue to turn out graduates without instruction in business procedure. Lack of business training often stands between the graduate and the realization of the high ideals which his professors have been at much pains to inculcate.

The timid inefficiency with which many medical men conduct their professional finances makes them easy victims of the unscrupulous. The patient finds it hard to reconcile such manifest ignorance of business with professional capability. Efficient business methods made possible by group organization should commend themselves to both the profession and the public.

Organized medical groups are recognized by progressive employers as a step toward solution of the problems of human maintenance in industry. Clear-sighted business men are quick to see the advantage of medical service units capable of providing a high standard of versatile and centralized service. Minimization of time lost for special examinations and simplification of record systems appeal to such men. Compensation insurance carriers welcome the efficient medical group. It minimizes the necessity of taking cases of injured men away from their home communities for treatment, a necessity which both carrier and patient would like to escape.

Group organization will provide many opportunities for recent graduates fresh from research laboratories to associate themselves with older men who have become engrossed in routine practice. These contacts will result in more frequent and more productive pilgrimages of the practicing doctors to the centers of scientific thought. Research men being brought closer to practical problems will, with greater patience, seek to make their discoveries applicable in general practice. Thus group practice will tend to make the practitioner more scientific and the research specialist more human.

No objections to group practice will stand if group organization works out for the public good. Dr. Lewellys F. Barker has reviewed the objections to group practice in an article published in the Illinois Medical Journal of January, 1921.

After considering objections on the ground of superfluosity, cost, inhumanity, cliquism and commercialism, Dr. Barker concludes that there is little fear that group practice will foster meanness or baseness, and, on the contrary, that it will probably raise medical practice to a higher and more honorable level.

Efficient suburban and rural groups will, to some extent, effect a decentralization of medical service. Cases too difficult for solution by local groups will continue to be sent to greater consulting centers.

Objection that group practice tends to submerge the individual and to destroy the intimate relation between doctor and patient does not necessarily hold. By placing sufficient stress upon the cultivation of the personal relation and by making that function a major responsibility of one of its members or departments, the group may promote rather than diminish this fundamental characteristic of good medical practice. Departments of physio and occupational therapy will be a feature of many groups and will do much to develop a sense of personal interest in such patients as may properly be referred to such departments. Dr. Gilcreest intends to discuss before the Industrial Section the application of physiotherapy and occupational therapy in Hahnemann Hospital of the University of California, where these departments have done much to promote confidence and cheerful optimism among industrial patients.

Three plans for financing groups are popular: (1) Financial equality; (2) Sliding scale based on annual adjustment according to individual earnings; (3) Stratification of group into three levels—(a) Controlling members dividing net earnings equally; (b) Participating members receiving salary, plus percentage proportionate to length of association with group; (c) Salaried assistants. Professional equality in groups is evidently the rule. Most groups have centralized offices, centralized record filing systems and salaried business managers.

Dr. V. U. Leonard of Duluth (Journal of the American Medical Association, February 12, 1921) gives a comprehensive classification of types of group practice. The co-operative type is most popular. Wide extension of this type of group, based upon equality of members, complete pooling of professional interests and representation of all important specialties, seems likely to occur. Groups of general practitioners are likely to take the co-operative specialty type as their ideal and work toward the perfection of this type.

A coherent service unit, comprising facilities for performing all medical functions concerned with the conservation of the health of every member of the patient-clientele, is the ideal of modern practice. Such groups should exercise a most potent influence in the fields of health—education and preventive medicine. Tremendous possibilities for reducing the economic loss from disease lie in the hands of such organizations. Health-educational sections of such organizations should make use of the columns of the local newspapers. No

other equally efficient medium can be found for teaching the laity proper discrimination in matters pertaining to health and medical service. Quacks and charlatans have had almost uncontested use of the press. They continue to delude and rob the public, and the public, lacking discrimination, charges the whole account up to the profession of medicine. Legitimate medicine is in greater peril through neglecting to use the press properly than its professional ideals will ever be through misuse of publicity by regular doctors. We may no longer safely neglect a service so necessary to the enlightenment of the public.

Developments of great moment hinge upon the ability and readiness of the medical profession to organize for service. The rank and file of the profession face the question whether they will by medically planned and controlled organizations meet adequately the medical needs of the masses, or will meet those needs as subordinate functionaries in organizations conceived and controlled by men relatively ignorant of, if not unsympathetic, to the highest ideals of our profession.

Intelligent laymen are out of patience with the perfunctory methods of unspecialized practice, and not less so with that peculiar form of vivisection which passes the patient about within an unorganized clique of specialists. Fear of the impossible expense which ill-health may entail is registering itself in the increasing number of lodges, health associations, etc., which offer a more or less adequate insurance against the medical expense of illness. Membership in such organizations is becoming the rule among the middle classes. The pernicious feature of such insurance is usually failure to provide good medical service. Such organizations frequently contemplate exploitation of the doctors who render medical service for them. Co-operative group medicine, through its business organization and service capacity, may do much to better these conditions.

The ailing individual with limited means should get a better type of service at a less expense; but this result cannot be achieved by giving inadequate compensation to the doctor who renders service. Medicine is an underpaid, not an overpaid, profession. Each well-trained graduate of today has spent at least ten of the best years of his life in special preparation. The degree of doctor of medicine from a first-rate school today represents on a conservative estimate an investment of twenty-five to thirty thousand dollars. Men of proper capacity will not continue to recruit the profession if the dignity of the calling is not conserved by maintenance of an adequate standard of compensation. The cost of producing a first-grade doctor will always be proportionately great. Reduction of cost of medical service must be sought in increased efficiency within the profession through centralization, co-operation and elimination of waste. It must be sought further in co-operative relations between organized medicine and organized units of the patient clientele. Many items of expense go to make the bill the patient pays. Every effort should be made to reduce the total bill with-

out reducing the net income of the doctor or impairing the service. Whatever form organizations of patients take, an adequate due paid by each member for medical service should be turned over without reductions or rebates to the medical organization which actually renders the service. The terms of all such agreements should be such that the opportunity and the obligation to exercise health-educational and preventive-medical functions in the highest practicable degree are given to the medical service organization. Such arrangements may be called contract practice; but our profession must not make a bugaboo of this term. The questions that concern medical men as a profession are: First, Is adequate medical service being rendered? Second, are the doctors who are actually performing this service being paid a compensation sufficient to insure the indefinite continuation of the service at an adequate standard of excellence?

There is a dangerous tendency for individuals both within and without the profession to farm out medical service. Funds collected from the members or from the organization representing the patient are controlled by shrewd intermediaries, corporate or individual, and in large part disbursed as dividends or salaries to promoters, while hired doctors receive inadequate compensation and render perfunctory service.

The laity have a right to form organizations which provide through the payment of adequate fees for competent medical attention to members. Medical service on such a basis is in line with modern ideas of progress and will tend to eliminate great economic waste. Medical groups should lead the public in building up this type of service. To this end the influence of all the professions and agencies engaged legitimately in the functions of preventing disease or healing the sick should be enlisted under the leadership of the medical profession. By such a broad organization, the medical problem of each community should be engaged. Rural and smaller urban communities offer the lesser complicated fields for such development. Once a strong nucleus of organization within the local profession is formed, the co-operation of powerful non-medical agencies in the community should be relatively easy to get.

Under medical leadership in and by the community itself should all the medical facilities for its non-indigent populace be provided. Provision of community hospitals, laboratories and technicians by the State discussed by Dr. Frank Billings and Dr. Victor C. Vaughan in recent articles, would take from the control of the medical profession practically all plants, equipments and technical facilities necessary to medical service. The operation of this plan would soon lead to absolute and complete control of medicine by the State. The end would probably be disastrous alike for medicine and public.

Group formation is the first step toward efficient stable adjustment of medical service. Organization of patient clientele is logically and unavoidably the next step. Machinery must and will be evolved whereby the man of moderate means may,

by the regular payment of a modest due or premium, be able to protect himself and those dependent upon him against the catastrophe of serious illness with its attendant curtailment of earning capacity and its overwhelming expenses. When in his emergency a costly service must be rendered to the patient, no one will seriously contest the doctor's privilege or undertake his responsibility. What type of agency do you choose to have make the terms upon which you will deliver such service? Shall it be service organizations of medical men themselves, carefully planning and unselfishly working with the wisdom of special training and experience toward an end which will conserve the health of the public and the highest ideals of our profession? Shall it be great insurance corporations, organized for profit? or shall it be departments of government, mayhap, controlled by men untrained and unlearned in the profession whose services they seek to direct?

177 Post Street, San Francisco.

THE ENDOCRINES AND THEIR INFLUENCE ON THE SKIN.*

By ANSTRUTHER DAVIDSON, C. M., M. D.,
Los Angeles.

Senior Dermatologist, Los Angeles County Hospital.

Endocrinology is a fascinating subject. Exact knowledge of it is limited, and much latitude is available for speculation. Some of our colleagues are obsessed with the dominant importance of the endocrines and give it a primary place in their diagnosis, while others class the whole practice as the greatest fraud of the century.

The influence of the endocrines on life Shakespeare has enshrined in his seven ages of man, from the infant dominated by his thymus, "mewling and puking in its nurse's arms," to the lean and slippered pantaloons, passing into his senility with the general failure of his endocrines.

Man is as old as his arteries and as efficient as his endocrines. To the better understanding of my point of view it is necessary to consider for a moment the embryology of the skin and its relation to the endocrinal glands. From the ectoderm, or outer layer of the embryo, the skin, nerves, the anterior pituitary and the medullary portion of the adrenals are developed. Though skin and nerves are developed from the same embryological layer, they function very differently. The nerve cells of the higher centers never regenerate and probably undergo little or no change in internal structure during the life of the individual; any changes they do undergo are solely due to the pathology of the interstitial tissues. This fixity of structure is probably the reason why the nerve cells are immune to disease; we have no diseases of the nerves. It is very different with the skin, the cells there are being continually shed and replaced. This very activity of function is a source of strength in reparation and of weakness in dysfunction.

It has long been noted that individuals developing locomotor ataxy have usually shown few or fugitive skin lesions, and some authors are in consequence disposed to consider locomotor ataxy a

* Read before the Los Angeles County Medical Society, April 21, 1921.

result of an infection by a neurotropic variant of the common spirochæte. This assumption I think is not necessary. As the skin and nerves are developed from the same somatic layer, it is reasonable to suppose that if the one suffers severely the other escapes. Nature, like every other efficient agent, does but one thing at a time. The law of compensation holds strongly in the ectodermal structures. A well-developed brain is not commonly associated with well-developed skin structures. Beauty and brains are rarely combined. Cranks have frequently flowing locks, and the name of "long hairs" is physiologically appropriate. Follow this embryological evolution a little further and you will note that the endocrine glands that most markedly affect the skin are developed from the same embryological layer. Foremost among these glands are the adrenals, the medullary portion of which when destroyed by disease produces the bronzing of the skin, so conspicuous a feature of Addison's disease. Addisonism, a minor form of this affection, is characterized by symmetrical patches of pigmentation, commonly known as chloasma and is not uncommon in early life. It is probably due to partial destruction of the adrenals, for it is most frequently observed in patients with tuberculosis or hereditary syphilis. The chronic lesions of acquired syphilis are characterized by a coppery pigmentation, in all probability due to the influence of the disease on the adrenals. Arsenical pigmentation is, in like manner, due to the inhibition of the adrenal secretion by the arsenic. The "nitroid crisis" that sometimes follows the administration of arsphenamine suggests the sudden arrest of the adrenal secretion, with its consequent disturbance of the sympathetic and arrest of the oxidation of the blood. This death-like condition, as you know, is promptly remedied by the administration of adrenalin.

In animal experimentation pregnancy is associated with an increase in size of both the pituitary and adrenal glands; whether or not this is merely compensatory has not yet been determined, but pregnancy, as we know, is associated with increased pigmentary deposits in the skin. A like increase in size is found in those glands in animals fed on food defective in vitamins. This deficiency in vitamins is an important factor in the production of pellagra, and it seems significant that the tissues most seriously involved in pellagra, viz., the skin and nerves, are developed from the same somatic layer. The whole train of symptoms in pellagra suggests serious dysfunction of the adrenals. It has never seemed rational to me that mere temporary deficiency of certain qualities in the food could lead to the fatal issue we see so frequently in pellagra. In other deficiency diseases, such as scurvy and rickets, the symptoms are promptly relieved by proper diet. In pellagra we frequently find the nervous symptoms progress in spite of treatment, and this fact suggests that some organ in close physiological relationship to the nerves has been permanently damaged. Dysfunction of the endocrinal glands, the adrenal among them, is probably the cause of pellagra. Of the pituitary gland only the anterior portion is developed from the ectodermal layer. This portion of the gland influences the growth of the skin

and skeletal structures. Its secretion stimulates the nerves in a manner similar to that of the adrenals on the sympathetic, though the process of action is not so apparent. Hyperplasia, or tumor growth, leads to acromegaly in the adult and a form of giantism in the adolescent that is familiar to you all. Hypopituitarism, on the other hand, is less objective and is frequently overlooked, though when fully developed it is very obvious. Its prominent symptoms are the opposite of giantism. The body assumes the feminine form with small bones and soft, smooth skin devoid or nearly so of hair on the face or in the axillæ. The distribution of the hair on the pubis conforms to the female type. These patients are all fat, some excessively so, but the fat is not uniformly distributed. It chiefly accumulates in the supra-clavicular fossæ, the front and sides of the abdomen, and over the hips and upper part of the thighs. The sexual powers are diminished and in extreme cases lost through imperfect development of the sex organs.

Of the other glands the cortex of the adrenals developed from the Wolffian bodies and have a special influence on sexual life. Disease of the cortex produces precocious sexual development with somnolence and other nervous symptoms.

The sex glands have, through their internal and the interstitial cells of the gonads are desecretion, the most profound influence on the individual growth and mentality. Puberty marks the beginning of their activity in which the skin shares. When this is excessive and the basic conditions are favorable, acne is the result. With the climateric the functions acquired at puberty are gradually lost and the whole of the bodily structures begin to decay. With the advent of the climateric there comes a loss of virility. Man returns again to the asexual condition of childhood and effeminacy that denotes his evolutionary origin. The male is only a recent evolution, a secondary, and in the lower organisms an unnecessary factor. The Bible story of the creation is not physiologically correct, the woman must have supplied the rib. The climateric in woman comes about the age of forty-five, and with man about sixty-two. The retiring age for employes in the civil service is sixty-five, a good physiological choice with man, but it, on natural grounds, ought to be forty-eight or fifty for women, for after the climateric most individuals simply vegetate, the mentality slowly weakens, it is the golden age of Eddyism. With some senility is long deferred, and the individual who retains his virility retains his mentality. You cannot have failed to observe that the men famous in history were not always renowned for their chastity, while almost the only famous women have been the infamous. The phallic worship of the ancients was but a tribute to glandular efficiency. That they worshiped the phallus as an emblem of the mysterious source of life was probably a secondary thought. The primal instinct, when man survived by physical prowess, was the worship of efficiency, and this he knew rose and fell with the functional activity of the sex glands. Lydston, by his operation of gland implantation, has proved the truth of this,

but his method for rejuvenation is likely to be superseded by that of Steinach.

While the endocrine glands all seem to support each other in the regulation of the vital forces, there are some such as the ovaries and the thyroid that mutually inhibit each other. This is the more probable in view of the fact that all life processes are regulated by stimulation and inhibition, for without these counteracting forces life would not appear possible. I think that it is necessary to remind you that life, even long life, is possible without the possession of the sex glands, and that this system must be considered as an accessory engine in the train of life, and as such, it must contain in its endocrine functions both stimulating and inhibitory hormones. On this account it will be found that the ovary and graafian vesicles are inhibitory one to the other, and this action regulates the menstrual functions and prevents the irregular and promiscuous discharge of ova.

Influential as these glands individually are, all are overshadowed by the thyroid. The secretion of the thyroid is greater than that of any other gland, and its function is "the governing and upbuilding of the cell and regulating the destruction of the protein molecule." With the results of hypersecretion, as seen in hyperthyroidism and Graves' disease, you are all quite familiar. Hypothyroidism in youth arrests development, and when extreme, cretinism results. Deficiency of secretion in the adult leads to dryness of the skin, thinning of the hair, and edema of the subcutaneous tissues known as myxedema. This condition is rapidly remedied by the administration of thyroid substance. In appropriate doses thyroid may be administered for long periods. It is interesting to note that the first patient with myxedema, to which Dr. Murray experimentally prescribed thyroid extract, has recently died at the age of seventy-four, having used thyroid extract more or less continuously for twenty-seven years. The thyroid is developed from the mesoderm, and has only an indirect influence on the skin in the general upbuilding of the body. It is important in this connection to recall that in the process of evolution the thyroid secretion originally passed into the digestive tract by the thyroglossal duct, and it exercised its function by absorption from the intestine like any other food product. Though the thyroid no longer discharges its secretion in this manner, it still retains its activity in the presence of the digestive juices, and thus it is that thyroid extract may be administered by the mouth without any loss in efficiency. The secretion of the anterior pituitary originally discharged into the buccal cavity so it, too, can be successfully used by the mouth. All the other endocrinal glands, or glands with internal secretion, have in the whole course of their development discharged their hormones directly into the blood stream, so I doubt if any of them are effective if given in any other way than by the hypodermic route. Adrenal secretion when given by the mouth is partially absorbed by the mucous membranes in its passage, and can be effectively administered by trickling into the nasal passages, but it is destroyed by the digestive secretions.

It must also be borne in mind that in admin-

istering the powdered gland but an infinitesimal part of the secretion is contained therein, the gland is not its secretion. Against this argument it may be truly said that the hormones are infinitesimal in quantity and that they act rather as catalytic agents, and are in consequence not to be considered from the quantitative side. It may be that those hormones are to man what chlorophyll is to the vegetables. Chlorophyll, vitamins and glandular secretion are all closely linked. This is shown by the increased production of the active principle found in the glands of animals killed in the summer season when green food is available.

On account of the intimate relations of the glands pluriglandular therapy is much affected by some, but I suspect from the manner in which it is prescribed that most of its value lies in the thyroid extract, but of course practical experience may ultimately prove that this assumption is wrong. All these glandular secretions are and must be originally derived from the mineral world. Thyroid deficiency is presumed to be the result of the lack of iodine in the dietary, and thyroid enlargement, which is probably purely compensatory, is a common affliction among the inhabitants of some districts in our own country. The states of Washington and Ohio seem to show a relatively much greater proportion of enlarged thyroids than any others in the union, and some of the social conditions are undoubtedly influenced thereby.

The fate of the individual and the nation hangs on the infinitesimal. The grandeur of ancient Rome succumbed to the inroads of the malarial parasite of the Pontine marshes. The initial success of the Confederacy in the Civil War was inhibited by the hookworm. Who knows but the fate of our country under the present administration may hang on the iodides.

The retention by the thyroid secretion of those qualities it possessed when it originally discharged itself into the digestive tract lends support to McCarrison's suggestion, that thyroid enlargement is due to intestinal toxemia, and is but an exaggeration of the normal physiological process. There is a point of view presented by W. Langdon Brown that would seem to support that theory. He remarks that "the active secretion of the thyroid is an iodine compound of indol. Indol is a decomposition product of tryptophan, a constituent of the protein molecule. Indol is ordinarily split off by the action of the intestinal bacteria, notably the bacillus coli." It would thus seem that the primal elements entering into the formation of the thyroid secretion are originally derived from the intestinal tract, and the process of evolution would lend support to this view. With the anterior pituitary secretion probably the same holds good, but all the secretions of the other glands are primarily elaborated in the blood.

SUMMARY

A perfect endocrine system is necessary for normal mentality.

Only those glands that are developed from the same somatic layer as the skin directly affect it.

Only those glands that originally discharged their secretion into the digestive tract are effective when administered by the mouth.

CLINICAL USEFULNESS OF ORTHO-CARDIOGRAM AND CARDIAC PATTERN*

By HARRY SPIRO, Ph. G., M. D., San Francisco.

Size and shape are important factors in diagnosing functional from organic disorders of the heart. All text-books of medicine agree that you should be extremely cautious in saying a heart is diseased unless you can prove that it is enlarged; and they also agree that when you percuss the outlines of the heart, your results are very unreliable. For this reason we were in need of a reliable method of determining the size and shape of a heart, and so we have come to depend more and more upon the Roentgenologist, but even though radiograms or X-ray pictures are indispensable aids in studying diseases of the heart, they do not aid us sufficiently in following up a case. We need more of the valuable information which the Roentgenologist can and will furnish if the demand is created. The Roentgenologist can furnish us with a method which will visualize the heart, not on an X-ray plate or radiogram, but on the chest of our patient, a method which can be used in comparison with our percussion outline, and correct them if need be.

It is so easy for the physician to send his patient to have a radiogram taken of his chest. This radiogram is inspected, but as a rule remains in the Roentgenologist's office, and a written report satisfies the doctor. Frequently, this report tells you that the heart, which you thought enlarged, is to the Roentgenologist normal in size, but does that opinion sufficiently assist you in the future examination of your patient? A radiogram does not picture the patient's heart on his chest in a way that you could study the changes which might take place daily, or weekly, and it is not practical to take a picture each week. Can you correct your percussion outlines by remembering how the heart looked on the radiogram? Can the radiogram assist you in determining the position of the apex of the heart which you cannot feel? You see then how difficult it is to have your patient fit the picture seen on a radiogram; how difficult it is to make your percussion outlines and X-ray findings dovetail.

We cannot criticize the Roentgenologist for so seldom furnishing us a report of the actual measurements of the heart in comparison to other measurements taken of persons of similar weight, because the standards of the size of the heart in respect to weight should be still further standardized; besides, the different standards or tables cannot be memorized; they must be kept in view. Yet, some valuable information can be obtained by comparing your measurements with such standards as we now have. Frequently, a heart which appears normal to the Roentgenologist may be enlarged when compared to weight, height, etc., of your patient.

Then, there is not sufficient standardization of the technic among the Roentgenologists, as some take their pictures by placing the patient two feet from the X-ray tube, others three feet, and some

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

RADIOGRAMS OF THE B. FAMILY

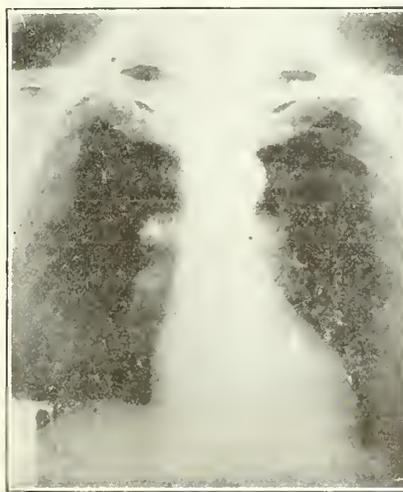
Mr. Porter B. Sr. (IV), has a pathological heart, but by the study of the three radiograms you could hardly tell which of the three hearts was diseased; there is no apparent enlargement shown by the radiogram.

The physical examination showed his heart to be apparently enlarged to the left. He has a loud systolic murmur at the apex, but feels fine.

Upon looking at the orthocardiogram you would not hesitate to pick out the heart of Mr. P. B. Sr., No. VII, as probably being pathological because, first, his cardiac silhouette is so distinctly out of line to that of his two sons, who resemble the father greatly in appearance, weight and height; besides, the two sons have comparatively small hearts for their weight. We would, therefore, say that the B. family type has small hearts, and that Mr. B. Sr. has a heart larger than what is apparent to our system of measurement.

By Von Zwaluwenberg's method,¹ the auricle showed a ratio of 1 when compared to the ventricle; the normal ratio is about .55.

¹ American Journal of Roentgenology, January, 1920.

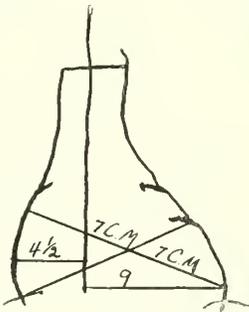
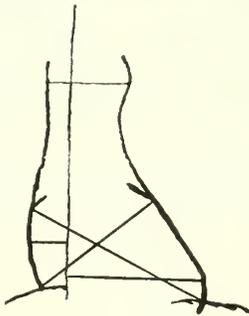
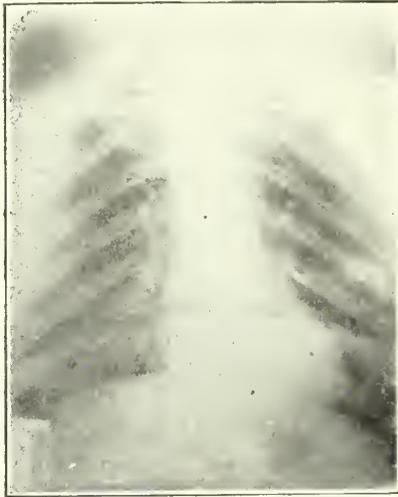


IV

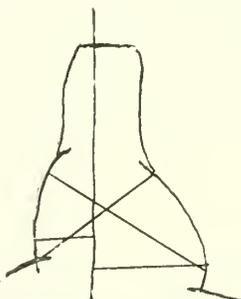


carefully centering the tube with the patient, etc. Frequently, reports from different X-ray laboratories differ materially. For purposes of study and comparison a uniform method should be adopted by all X-ray laboratories. Most Roentgenologists snap their pictures of the patient's heart while he is holding his breath at the end of a deep inspiration, because by this method the Roentgenologist gets the clearest pictures, but

when the internist examines his patient he pays no attention to the respiratory phase, but examines during both phases of respiration. Now, you can-



VII



not make a picture of the heart, taken when the diaphragm is depressed at the end of a deep inspiration, agree with your physical examination made without reference to respiration. The above

are only a few of the difficulties one meets when trying to make your laboratory X-ray findings agree with your physical findings.

There are two methods in favor for making X-ray examinations of the heart more accurate. In both methods the technic of all laboratories agree. The first is the teleradiographic method: This, as you probably know, is done by placing your patient and film from six to nine feet away from the target of the X-ray tube. At this distance most of the rays which strike the heart are parallel rays, and so there is not the exaggeration of outline as is seen in an ordinary distance X-ray plate. Measurement of the heart by the above-described teleradiographic method is accurate enough, but the system is very hard on X-ray equipment. There are also the same objections as that offered against all radiograms, namely: You cannot use them to correct your physical examinations. You cannot tell if the heart you are examining deviates from the previously taken teleradiogram until you have taken another one for comparison.

It is with pleasure that I quote from Von Zwaluwenberg, of Ann Arbor, Michigan, who, I believe, is leading the way in the United States in advancing the use of the fluroscope in the study of cardiac conditions. He has demonstrated the importance of measuring and comparing certain diameters of the heart, not only to prove that the heart is enlarged, but to prove that a heart apparently normal in size to our methods of measurement may have the auricles out of proportion in size to that of the ventricles, as his method depends upon the observation of that point where the auricular action ends and the ventricular action begins. It can only be done by observation with the fluroscope; no X-ray plate can show it. So then the orthodiographic method is the method of choice. In this method only the parallel rays from the X-ray tube are used. By centering your tube and then using the smallest opening in your lead diaphragm you eliminate the divergent rays, and utilize only the parallel rays. A permanent record is made by marking on paper the exact outline of the heart as is shown by these parallel rays. In this way the size of the heart can be accurately measured, and as Von Zwaluwenberg says, "The peculiar characteristics of the shape or contour of the heart are recorded in a way impossible of production by any X-ray film." Therefore, in the study of the contour of the heart a wide field for study is open.

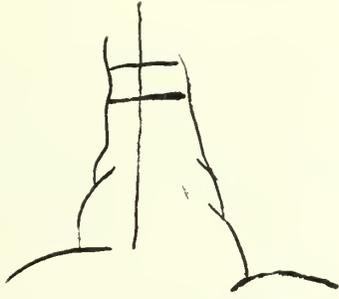
Now, by simply cutting out the above outline of the heart you have made your cardiac pattern. This pattern can be used in checking up your physical findings. For this purpose you must place your orthodiagram, or your heart pattern, on your patient's chest in exactly the same position in which it was originally taken. This is difficult if the patient has large mammary glands or some deformity of the chest. In 1908 Alba Schoenberg, of Germany, marked the orthocardiogram directly on the skin, transferring it to glass and then to paper. Instead of glass we now use parchmin paper (not parchment), but a transparent paraffine-like parchment paper.

RADIOGRAMS OF MISSES HELEN AND THERESA S.

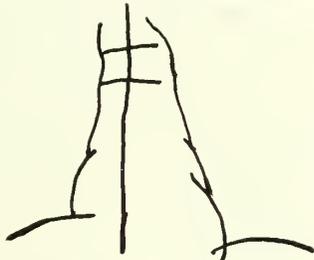
Miss Helen S., No. IX, is a patient of Dr. W. E. Smith, of San Francisco. She has a systolic murmur in pulmonic area. Physical examination showed heart large for her size; she weighs one hundred pounds. The radiogram showed obliteration of the pulmonic arch—a normal and frequently abnormal sign.

Radiogram taken of her sister, Miss Theresa S., XXI, whom she resembles greatly, showed marked similarity to the cardiac shadow. It is exceptional to have radiograms of different members of one family show such marked similarity, because there are so many "phases" that enter into the taking of radiograms, as you cannot take a radiogram of two different subjects at the same "phase" of the respiratory effort; therefore, you are liable to get different shadows on the radiograms.

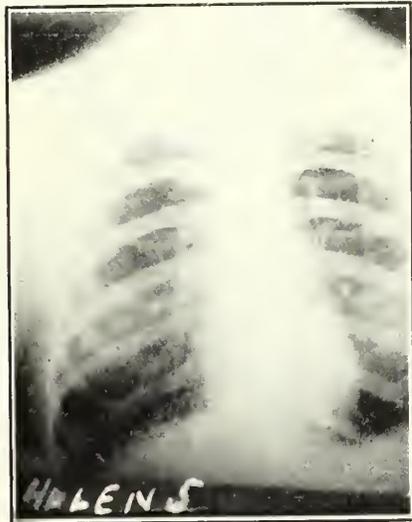
the same position as when originally taken. This cardiac pattern can be enclosed with your history sheets so that at any future examination you can reproduce your exact X-ray findings as regards the size, shape and position of the heart on your patient's chest. You can judge the heart by any of the standards of weight and height, and by the standard of the patient in front of you. You can, at any future examination, determine if the heart deviates from the record in front of you,



X



XI



The orthocardiograms, X and XI, show even greater similarity. You can hardly distinguish one from the other. Therefore, it was considered that the obliteration of Pulmonic Arch was a family type and no pathology present.



XII

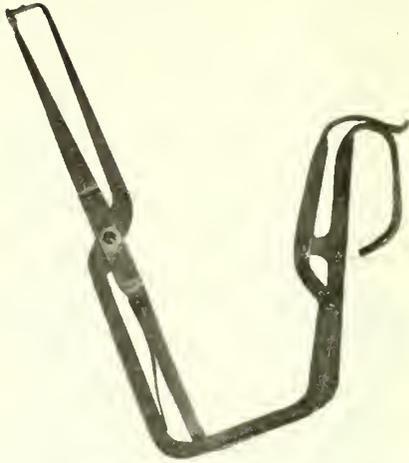


So then by directly marking the orthocardiogram on your patient, then transferring it directly to the parchmin paper, and by cutting out the outline of the heart you have your cardiac pattern. As this pattern is taken directly from the patient's chest it can by the use of certain land marks be replaced at any time you wish, and in

The orthocardiogram, or cardiac pattern, marked on the above patient's chest.

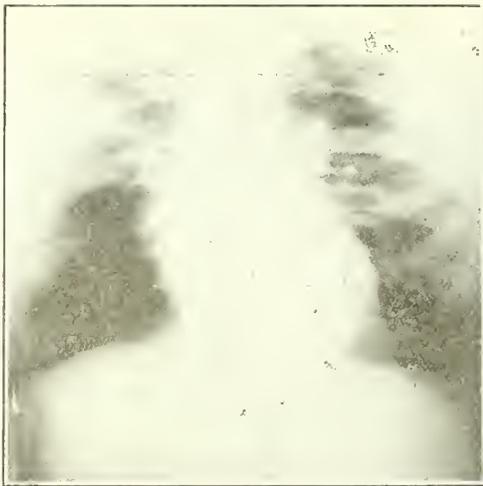
Upon physical examination the apex of his heart was thought to be over 1½ inches below where it was found to be by the cardiac pattern.

Once having his cardiac pattern outlined on his chest you could not examine him wrong, because you would not look for the apex of his heart in his abdomen.



This instrument reaches around and under the fluoroscopic screen; the point marked "B" is allowed to rest on the skin opposite the spot you wish to mark; pressure of your thumb at "A" presses forward the ink container at "C," thus marking a dot on the skin. Each time the "Focal" spot on your screen comes in line with the edge of the Heart you place a dot on the skin; then the dots are later united to make the outline of your orthocardiogram.

The focal spot on the screen is made by first centering the X-ray tube; then the lead diaphragm in front of the tube is closed as small as possible, and that spot on the screen which is illuminated when the current is turned on is your "Focal Spot." This focal spot can be marked with tinfoil for permanent use.



CARDIAC PATTERN

Here is a radiogram of a patient with a "barrel-shaped" chest. For that reason there is considerable exaggeration of the cardiac shadow.

The question is—Would the study of this radiogram sufficiently assist you in the future examination of the patient? Could you correct your physical examination after examining the radiogram?

and you, who are responsible, do not need to depend entirely upon the Roentgenologist for an opinion. You can put some of your own individuality into the opinion you render.

CONCLUSIONS

Radiograms are indispensable aids in the study of cardiac diseases; orthocardiograms or cardiosilhouettes are indispensable in studying the contour and determining the relative size of the different chambers; the telerradiograms for determining the

exact size of the hearts of a large number of patients in rapid succession, and for co-ordinating the technic of all laboratories; the cardiac pattern is recommended as an aid or guide in our physical examination and for bringing our laboratory X-ray findings in synchronisms with our physical findings.

A brief description of the so-called family type of heart is combined with a description of the pictures.

FAMILY TYPE OF HEART

It may seem unnecessary to suggest the study of a family type of heart, in addition to our other standards of measurements.

But, as there is no good reason why our internal organs should not have the same comparative resemblance to those of our immediate family, whom we resemble outwardly, we may study those hearts which are apparently normal in size though diseased by looking for a "family type."

212 Stockton Street, San Francisco, Cal.

Book Reviews

Handbook of Diseases of the Rectum. By Louis J. Hirschman. 3rd ed. 378 pp. Illustrated. St. Louis: C. V. Mosby Company. 1920. Price, \$5.

This work deals with those conditions of the rectum and anus which can be treated by the general practitioner in his office. The larger portion of the volume is devoted to treatment, but cursory attention being given to a consideration of the pathogenesis and pathology. None of the diseases requiring major surgical intervention are included, as the author frankly states that his book deals with those procedures only which may be carried out under local anesthesia. While this feature may be in some ways useful or convenient, it requires the possession of some other work dealing more comprehensively with the subject. It is a question in the mind of the reviewer whether a separate book is necessary or even desirable which merely puts together those procedures possible to be carried out in ambulatory practice.

In the chapter on hemorrhoids, the author says that the clamp and cautery operation is "not, of course, applicable under local anesthesia, and I mention it merely to condemn it." Issue is taken with this statement first, because the operation is definitely applicable under local anesthesia, the reviewer performing it quite frequently, and with the greatest ease; and secondly, because the reviewer is not yet quite certain that the old clamp and cautery is not the procedure of choice in most cases because of its simplicity and relative freedom from uncomfortable sequelae, particularly the formation of external tags. The author does not believe that a red-hot iron in a cavity lined with mucous membrane is rational. The argument is untenable. What does he think of a red-hot iron in the peritoneal cavity? Does he likewise condemn the modern technic of intestinal resection?

The book entirely ignores mention of the many unsatisfactory results following removal of piles and the surgical treatment of fistula. This we look upon as a great weakness. Here the general practitioner needs help—as does, for that matter, the experienced surgeon.

On page 34, "rectal adenoids" is mentioned—doubtless adenoma is meant. "An examination of the rectum will often disclose the presence of pinworms (p. 39) in restless children." Why not mention the stools? The embryology of vaginal anus is a little weak.

The article on hypertrophied anal papillae is good. The part that this condition plays toward

the production of human discomfort should be better known by practitioners.

S. H.

The chapter by Jelks of Memphis, on dysentery

Common Diseases of the Skin. By G. Gordon Campbell. 229 pp. Illustrated. New York: Macmillan Company. 1920.

A careful inspection of the book failed to convince the reviewer that it met the demands of the student of today. The illustrations are quite good and ought to be very instructive. Perhaps this feature will commend the book to some who do not require much reading on the part of their students.

H. E. A.

Regional Anesthesia. By B. Sherwood-Dunn. 294 pp. Illustrated. Philadelphia: F. A. Davis Company. 1920. Price, \$3.50.

This book contains many of the methods originally described by Braun. It adds descriptions of Kappis' paravertebral injections for various laparotomies, nephrectomy and other operations on the chest and trunk. It puts an unfair slight on Braun and his pupils in not giving them the least credit for their brilliant discoveries. Many of the figures and diagrams attributed to others are lifted bodily from Braun's work.

It is more compendious than Braun's classical monograph, but it is not nearly as complete, nor as well balanced. It does not recognize sufficiently the limitations of regional anesthesia.

It is illustrated by many dramatic photographs of patients smiling under local anesthesia. The anatomical figures and diagrams, which might be more useful than patients' and surgeons' pictures, are crude.

The surgeon who wants a complete monograph on local anesthesia will find Braun in Percy Shields' translation or Allen's book more useful. This manual, however, will prove handy for quick reference.

L. E.

Text-book of Dermatology. By J. Darier. Edited in English with notes by S. Pollitzer. 769 pp. Illustrated. Philadelphia and New York: Lea & Febiger. 1920.

This text-book by Darier has been most excellently translated by S. Pollitzer, who has added many personal notes of value. The book is divided into two sections—one on Morphology of the Dermatoses, and the other on Nosology of the Dermatoses. It has an excellent appendix, which is full of good ideas upon the therapeutics of dermatology.

In a text-book one always looks for the manner of treating the subject of eczema, which gives a good idea of the value of the book. The subject which, in times past, was considered a distinct disease entity is here looked upon, as in most of the later writings, as less distinctive generally and more as a skin reaction toward a series of things, either internal or external in origin. One can get a clear conception of the varied elemental causes as Darier understands them, which are back of the puzzling question of the dermatoses, eczematoses and eczematides. Though many of the subjects, such as leprosy for instance, are treated with but short accounts, the clearness and conciseness of the articles leave little to be desired.

The editor makes up for the lack of consideration of arsphenamine, arsenic therapy and chemotherapy by adding his own clear views on the intensive treatment of syphilis. It would seem that too little space is devoted to those important, varied conditions which are due to streptococcal infections and may well be termed streptodermias.

The reviewer considers this one of the best publications of its kind, an excellent book for the physician, surgeon or specialist in any line of medicine. Its size is greatly in its favor, making it convenient to handle.

G. D. C.

1919 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1331 pages, 490 illustrations. Philadelphia and London: W. B. Saunders Company. Cloth. \$12 net.

The wealth of publications contained in this volume is such that all I can do here is to point out the most salient contributions and to recommend to all the reading of the original articles.

Most prominent in the first section (Alimentary Canal) is the paper by C. H. Mayo on "Cancer of the Stomach." He does an anterior Polya operation that is an antecolic gastro jejunostomy closing one-half of the stomach opening and using the other half for the anastomosis with the jejunum which is turned to the right (iso-peristaltic); the point of attachment of the jejunum being fourteen inches below its origin. He uses continuous chromic and silk sutures and claims cures in twenty-five per cent. of five-year cases.

I also note two other important papers; one by Eusterman, on the Treatment of Gastro-jejunal Ulcers and the other by Balfour, on the Destruction of Bleeding Gastric and Duodenal Ulcers by the cauterly.

In the second section (Uro-genital Organs) Bradsch and Carman and C. H. Mayo describe renal fluoroscopy done at the operating table with a portable X-ray apparatus for the detection of kidney stones when they are hard to locate.

There are several excellent contributions from the pen of E. S. Judd. In nephrectomy (for tuberculosis of the kidney) he no longer sterilizes the ureter with carbolic, and isolates it by pulling it through a rubber drain to avoid soiling the field of operation. I also remark that transperitoneal operations on the urinary bladder do not occupy such a prominent place as before. In prostatectomy the Mayos insist on an open operation done with retractors under the guidance of the eye.

Then follows the chapter on ductless glands with several interesting articles on the physiological chemistry of the thyroid, basal metabolism, et cetera. Sistrunk insists that caution is imperative when the metabolic rate is above plus 40, and no thyroidectomy is permissible if it is 60 or 70.

Ashby gives a most original account of the length of life of transfused blood corpuscles in man estimated by agglutination.

In the last section I note the favorable report of Meyerding on the Hibbs and Albee operations for treatment of tuberculosis of the spine and several papers by Rosenow on system infections, influenza, etc.

It will be a consolation for most of us to see the mixed results obtained by Henderson in his operations for un-united fractures of the neck of the femur.

The book closes with many papers on public health, social service, medical education, etc. (several of them written by W. J. or C. H. Mayo in person) which testify to the broad vision and interest of the authors in all fields of medical science.

The book is worthy of its predecessors and is a monument to the labors and achievements of that magnificent institution, the Mayo Clinic.

P. S. C.

The Endocrines. By Samuel Wyllis Bandler, M. D., F. A. C. S., Professor of Gynecology in the New York Post-Graduate School and Hospital. Octavo of 486 pages. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$7 net.

This book embodies the author's own ideas on the subject of the endocrine glands and their interrelations, which ideas are gathered chiefly from clinical observation and elaborated into theories which are little supported by experimental evidence. In his enthusiasm, he sees the endocrine glands as the controlling agents in heredity as

well as in many physical and mental states which are not ordinarily considered as dependent upon endocrine function. He believes, for example, that "dementia praecox is a serious and extreme type of endocrine aberration or abnormality evidencing its presence by psychic rather than somatic alterations." He attributes fibroids to overactivity of the posterior lobe of the pituitary. His enthusiasm reaches its height in the following expression: "Medicine is concerned with bacteria on the one hand and the ductless glands on the other, and it is the ductless glands which aid the living body in the perpetual contest with bacteria and bacterial infections." Ten pages are devoted to the author's conception of criminality and presentation of his argument that it has an endocrine etiology.

There is much irrelevant material (Chapter XIII does not mention the endocrine glands at all) as well as extensive quotations from novels and scientific works. There is no bibliography. The five chapters on gynecologic subjects and eighty pages of case histories are, perhaps, the most valuable portions of the book.

The author, throughout, attributes too many functions to the various glands upon purely theoretical grounds, which tendency leads to some startling statements. For example, "When a patient after several hours of sleep awakes and cannot fall asleep again, some endocrine is responsible for the rousing of the upper consciousness, and if we found by questioning the nature of the dream which aroused the patient or the thought or emotion which is now present during his waking state, we can readily discover which of the endocrines are hyperactive at this time."

The book contains many statements similar to the above, and for this reason one is inclined to regard it as a work on "speculative" or "philosophical" endocrinology. It contributes no new, definitely proven facts concerning the endocrine glands.

J. M. R.

Chemical Pathology. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago, and in the Rush Medical College, Chicago. Fourth Edition, Revised and Reset. Octavo of 695 pages. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$7 net.

Texts on the exact sciences are uninteresting reading, which fact dissipates concentration. Concentration is absolutely essential to mental assimilation. Unless the subject matter can be properly assimilated, it cannot be properly applied. If you cannot apply what you read, there is no use reading it. Unless the object is entertainment, the value of reading is measured by its usefulness. Perhaps this is the reason why text-books on the allied sciences, such as chemistry, bacteriology, physiology and pathology are in such excellent state of preservation on the shelves of the practicing physicians and surgeons. In this work, however, the author presents the subject in an interesting, as well as logical, manner. Although strictly scientific, it is readable and one might almost say, that it invites concentration. In this era of analysis where nothing but fundamentals satisfy the omnivorous investigators, where the body has assumed the nature of a physical and chemical laboratory and where pathological changes have also definite chemical explanations, this book ought to be found within reach of the interested practitioner.

It is impossible to point out all of its features, there are so many, but it gives the student a new viewpoint in the study of tissue changes. It broadens and emphasizes the simplicity of many

reactions which have been thought to be complicated. After reading this book, inflammation assumes a role that has been only vaguely associated with it. With a rapidly growing importance of the laboratory as a diagnostic and therapeutic aid, this book is one which the general practitioner, specialist and student, no matter what his chosen work may be in medicine or surgery, would do well to familiarize themselves.

J. A. P.

Text-book of Biology. By William M. Smallwood. 4th edition. 308 pp. Illustrated. Philadelphia and New York. Lea and Febiger. 1920. Price, \$3.50.

This book is an interesting résumé of some of the features of biology. It presupposes considerable knowledge of both animals and plants and deals with principles rather than with details. For this reason it strikes one that it would be more useful to a student wishing to review the subject rather than to one just beginning. The various subjects are well proportioned and the style shows two cardinal virtues that the late Dr. Osler stated should characterize all scientific writing, brevity and lucidity.

A. D. E.

County Societies

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Society was held April 18. Dr. Samuel Hurwitz, of San Francisco, read a paper on "The Value of Vaccines in Bacteria Asthma," and Dr. Albert H. Rowe presented a paper on "Advice in Diagnosis and Treatment of Hay Fever and Asthma."

On April 12 the Alameda County Medical Society held a luncheon at the Hotel Oakland in honor of Professor John M. T. Finney, of John Hopkins University.

At the April meeting of the staff of Merritt Hospital on April 4, Professor Thomas Addis, of Stanford Medical School, spoke on diabetes. Professor Harold Brun, of the University of California, discussed intestinal obstruction.

Dr. Paul J. Anderson's death was reported from Honolulu, T. H.

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held May 3, 1921.

The President appointed Drs. Cowan, Hayden and Cross to act as a committee to restore as far as possible the records of the society which were destroyed in the recent fire at the Forsyth Building.

Dr. J. T. Gardner and Dr. C. M. Vanderburgh were elected to membership in the County Society.

Dr. Harry Spiro, of San Francisco, read a paper on the subject of cardiac dyspnoea.

KERN COUNTY

Regular monthly meeting of the Kern County Medical Society was held Friday evening, April 15, 1921.

Dr. Henry Dietrich, of Los Angeles, discussed the subject of "breast feeding," and read a paper on "Nephritis in Children." His remarks were followed by a general discussion.

Miss D. E. Bradley, County Bacteriologist, spoke in regard to her duties as milk inspector. Her remarks were further added to by Mr. Penfield, dairy inspector for the county.

The following members of the society were present: Drs. Fogg, S. F. Smith, Joe Smith, McNamara, McKee, Buchner, Gundry, Kellogg, Compton and Guinan.

After the meeting the society enjoyed an informal supper at the St. Francis cafe.

SAN DIEGO COUNTY

The last meeting of the Society in April took the form of a dinner at the Hotel San Diego, at which upwards of a hundred members of the local medical and dental societies were present. Dr. Julio Endleman, of Los Angeles, gave a half-hour talk upon focal infection occurring in mouth and throat. The subject was discussed by Drs. G. M. Hallenbeck, Robert Preble, Leland D. Jones, James L. Ross, H. P. Eméis, Harvey M. Jackson, James F. Churchill, W. S. Kyes.

In May the monthly meeting of the medical staff of St. Joseph's Hospital will be combined with the second regular meeting of the medical society for the month.

St. Joseph's Hospital is making steady progress in hospital betterment.

The new Naval Hospital being erected in Balboa Park gives promise of a substantial and imposing structure.

All persons interested in better medicine and better public health commend Judge Edgar Luce for his firm stand in dealing with violators of the Medical Practice Act.

San Diego again appreciates the honor of entertaining the State Society, and has done strenuous preparatory work to break the records of attendance and hospitality.

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce quarters, Friday evening, April 8, President L. R. Johnson presiding. Those present were: Drs. L. R. Johnson, F. S. Marnell, A. H. McLeish, H. S. Chapman, C. F. English, B. J. Powell, H. C. Price, B. F. Walker, Minerva Goodman, N. P. Barbour, G. J. Vischi, J. F. Blinn, J. D. Dameron, C. D. Holliger, L. Dozier, E. A. Arthur, D. R. Powell and Dr. Frank Kelly and Dr. Wilfred Kellogg, of the State Board of Health, as speakers of the evening.

Dr. Wilfred Kellogg read a paper upon "The Physician and Public Health." Dr. Frank Kelly spoke upon the "Control of Communicable Diseases." Both doctors emphasized the importance of the physician co-operating with the local health officer, and of the value of quick and accurate diagnosis and careful isolation. The importance of a full-time health officer for a community the size of Stockton was mentioned. Dr. L. Dozier, city health officer, reiterated his often expressed opinion as to the advisability of a full-time health officer for Stockton.

Correspondence

A NEW THEORY OF THE CIRCULATION

April 14, 1921.

To the Editor:

As far as I know or have been able to find out, the theory herein expounded is an entirely new one and I believe susceptible of scientific proof.

The question as to why the blood flows in the veins has never been satisfactorily answered. The cause of the blood flow in the arteries is apparent, but the work done by the heart and the elastic recoil of the arteries is all used up in the passage of the blood through the capillaries and the capillary bed.

In other words, there is little or no pressure in the capillary bed, the vistergo—is exhausted. Yet the blood does flow steadily in the veins, and physiologists have sophisticated for years as to the cause of this flow. All text-books give the following causes, and all admit that other undiscovered causes are concerned.

1. Negative pressure in the thorax.
2. Negative pressure in the right heart.

3. Muscular action compressing the veins (passive).

4. The fact that the veins have valves preventing centrifugal flow in them.

5. I believe the other factor to be as follows: The CO₂ content of venous blood is as much as 45 cc. of CO₂ in 100 cc. of venous blood. Perhaps as much as 85 per cent is in solution in the plasma or combined with protein (probably globulin).

Certainly, a very small quantity has combined chemically with the hemoglobin and carried by the erythrocyte. In the tissue, where combustion occurs, the CO₂ pressure is considerable, and the venules are subjected to this pressure, the heavier as the capillary bed becomes distant, and the same condition obtains as in a seltzer bottle, which contains CO₂ dissolved in water, and which will discharge its contents because of the CO₂ pressure. In other words the CO₂ pressure forces the venous blood forward toward the area of negative pressure (thorax) just as the water in a siphon bottle is forced up against gravity. Individually, the venule or venous capillary has but little pressure, but there are billions of them, and the sum total will equal the venous pressure at any given point.

Fraternally,

A. H. WHITE.

1005 Market Street, San Francisco.

(Comment.—Dr. White believes that the pressure of carbon dioxide in the venous blood forces this blood toward the thorax just as water in a siphon bottle is forced out of the spout. It is probable, however, that this factor plays no part in the movement of blood in the veins. Siphon water is supersaturated with CO₂, which is forced in under pressure. If this pressure is relieved the CO₂ escapes in bubbles. Blood is not supersaturated with CO₂, and there is no bubbling when it is exposed to the air. In the case of the siphon bottle, the CO₂ escapes into the upper part of the bottle as the water level descends. There is no such escape of free CO₂ into the veins and capillaries.

The last statement in Dr. White's letter to the effect that pressure within the capillaries should be added in order to get the sum total of pressure is not correct, for in a movement of fluid it is the pressure per square unit of surface, and not the total pressure that determines the motion. This is the principle of the hydraulic ram.)

THE GRACELESS CHIRO

To the Editor:

The following letter was received by a member of my family from a San Francisco chiropractor. Could anything better illustrate the graceless commercialism of this ilk?

Very truly yours,

A. F.

San Francisco.

Dear Madam:

It is only when ill that you require a physician's services and doubtless you are accustomed to consult a medical doctor on such occasions,—probably the family doctor.

It is natural that you should feel reluctant about departing from this custom, yet if you could, by experience, learn of a quick and efficient method for relief from bodily ills, especially nervous troubles, you would be eager to adopt it as soon as its reliable restorative virtues were demonstrated to you. I have taken the liberty of sending you two letters suggesting that you call and let me tell you of the extraordinary results that are daily being achieved by chiropractic treatment.

I do not know that you are in need of my services—indeed, I hope your health is excellent—but in case you are ailing or are "doctoring" for any trouble, why not come and see me? It will only occupy a little of your time, you will not be urged to take treatment, and there will be no obligation whatever for consultation.

Please bear in mind that I am licensed to practice as a chiropractic, by the State Medical Board, the same board that gives every physician in this state a license to practice. If I were not skillful and proficient I could not have secured nor could I retain this license.

Again I invite you to call. You will be accorded all courtesy and consideration, will find the environment of my offices restful and inviting, and most important of all you will learn how chiropractic treatment will quickly correct the major portion of physical ills, just because it is Nature's way of curing.

Sincerely yours,

DR. _____

NOTICE

POTTER METABOLIC CLINIC

At a recent meeting of the Board of Directors it was voted to change the name of this clinic from that of Memorial Laboratory and Clinic to the Potter Metabolic Clinic, in honor of its founder, the late Nathaniel Bowditch Potter. The clinic is housed in a special wing of the Santa Barbara Cottage Hospital. Dr. W. D. Sansum is its present director.

Clinical Department

"NEUROTIC" ASTHMA

By

F. F. GUNDRUM, M. D., Sacramento.

For many centuries the "nervous" origin of asthma was considered indisputable. In later years, with the better understanding of chemical (anaphylaxis) and reflex exciting causes, the nervous mechanism has been allowed somewhat to recede into the background.

My attention was recalled to this phase of the disease by the following case, decidedly unusual as far as my experience goes.

Case History—

H. J., single, age 56. No serious diseases; heavy smoker, five cigars a day for thirty years; heavy drinker; claims to have drunk a quart of whisky every day for twenty years. His brother says he thinks this figure a little high, but considers his daily average to have been well over one pint. Present illness began seven months ago with severe cough and cold. Did not clear up completely. Four months ago began to have severe attacks of asthma, lasting two to five days, only partially relieved by vigorous drug therapy.

Two months ago during a severe asthmatic attack, an active alcoholic psychosis appeared. For the first two or three days the delirium alternated with rational intervals of from one to three hours. During the periods of mental clearness this patient wheezed violently. His chest showed the usual expiratory prolongation with sonorous rales. When the mental condition became clouded and the patient actively delirious, the bronchial spasm disappeared, leaving the chest with only the medium and large rales of a chronic bronchitis.

This alternation of clear mind with asthma, and delirium without asthma, occurred some half dozen times during three or four days. He then became continuously hallucinated. The asthma has not yet returned.

Capital National Bank Building.

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series. Case No. 6. 1914. Female. American, age eight years. No. 8007. L. C.

Family History: Father and mother living and well. Father had been subject to attacks of indigestion and had just recovered from a case of "grippe." There was a strong family history of tuberculosis. L. C. was one of seven children.

Past History: She was a full term, normal delivery child. She had always been a well baby with the exception of having had measles and a few intestinal upsets, but none of any severity.

Present Illness: Four months before entering the hospital child had had a daily temperature for three weeks and since that time she had been running an irregular temperature. Parents said that for a day she would be apparently all right and the next day have a temperature. Sometimes temperatures were accompanied by a chilly feeling and at other times had high temperature, was thirsty and drowsy, but did not have chilly feeling. The week previous to her entrance she had been having rather high temperature and every other day had had a chill which lasted for thirty minutes to an hour. This was followed by a high temperature which lasted from twelve to eighteen hours and then became normal.

Physical Examination: On entrance the child had a pale, muddy complexion, flushed face and apathetic expression. She showed signs of having lost considerable amount of weight. Her tissue turgor was poor, her skin dry and the mucous membrane rather pale, though her cheeks were flushed. Her teeth were in poor condition and the gums rather spongy and bled rather easily. Tongue was coated and tonsils were enlarged, and there was a good deal of muco-purulent secretion in her posterior nasal pharynx. There were many superficial cervical glands, both anterior and posterior group. Glands in her axilla and groin were also palpable. Her chest was poorly clothed. Breathing was not rapid, chest was resonant throughout, but in the back on auscultation there were numerous coarse rales on both sides. Heart area was slightly enlarged to the left. Heart sounds were clear, second sound was entirely replaced by a loud blowing, systolic murmur which had its greatest intensity at the apex. The veins over her chest and abdomen were distinctly visible. Abdomen was full and soft, not tender. The liver was enlarged to 6 cm. below the costal margin and was firm, hard and not tender. The spleen was felt 10cm. below the border of the ribs in the nipple line and reached to within 5 cm. of the mid line. It was hard, firm and not tender. There were no other masses felt in the abdomen. There was no fluid. Her genitalia were normal. Her extremities were normal except for a loss of subcutaneous fat. Her reflexes were rather sluggish. She had no abnormal reflexes.

Laboratory Findings: Von Pirquet reaction was negative. Wassermann on her blood was negative.

X-ray Examination: Her chest showed considerable peri-bronchial root gland enlargement and some peri-bronchial thickening. The blood picture showed a marked reduction in the hemoglobin and red blood cells with a relative increase in the polymorphonuclear leucocytes, though there was no increase in the number of white blood cells. On several occasions the white blood cells were below normal. Her differential blood counts ran as follows:

On examination of the smear, tertian malaria organisms were found in two stages, segmenting and segmented forms. This gave the

Diagnosis of the case, which was that of tertian malaria. Undoubtedly during the previous four months she had been suffering from this infection, which accounted for the large size of her liver and

| Date | Hb. % Dare | Red Blood Cells | White Cells | Neutro- philes | Eosin- ophiles | Baso- philes | Lympho- cytes | Large Monos & Transition |
|--------|---------------|--------------------|----------------|-------------------|-------------------|-----------------|------------------|--------------------------------|
| Oct. 2 | .. | 3,904,000 | 6,300 | 60 | 0 | 0 | 23 | 17 |
| " 4 | 49 | 3,944,000 | 5,660 | 68 | 0 | 0 | 23 | 9 |
| " 5 | .. | 3,568,000 | 7,700 | 52 | 0 | 0 | 30 | 18 |
| " 16 | 60 | 4,184,000 | 10,900 | 43 | 0 | 1 | 26 | 30 |
| " 22 | 69 | 3,392,000 | 16,000 | 68 | 2 | 1 | 22 | 7 |

spleen. The anemia and leucopenia were in keeping with her malarial infection.

Treatment: Consisted of giving her quinine, five-grain powders four times a day. Within ten days her infection was under control and she had no more temperature rises. The quinine was then reduced to three times a day and on leaving the hospital, three weeks after admission, it was recommended that she keep up the quinine for one month longer, morning and evening. She was also put on iron, in the form of Blands tablets, three times a day after meals for her anemia, and she was also given a full diet.

Discussion: Her general condition on discharge at the end of three weeks was markedly improved. Instead of being apathetic she was energetic. She had commenced to put on weight, having gained over two pounds. The sallow, muddy color was beginning to clear up and, as can be seen from her blood examination, her hemoglobin had risen to almost 70, an increase of almost 20 per cent. On discharge her liver could barely be felt and her spleen was reduced to 1 to 2 cm. below the costal margin.

Obituary

MEMORIAL TO DR. SHADWORTH O. BEASLEY, D. S. C., D. S. O. (British Government)

The Medical Faculty of the Stanford University School of Medicine has decided to create a Memorial to Assistant Professor Shadworth O. Beasley, who was killed in action on October 14, 1918, near Cierges, France.

Dr. Beasley was graduated from Cooper Medical College in 1897. He served as Major and Surgeon, U. S. Volunteers, in the Spanish-American War from 1898 to 1903, and received the Congressional Medal for conspicuous bravery in bringing in wounded under fire. Returning to San Francisco he undertook intensive work in the various clinics of Cooper Medical College, which later were taken over by Stanford University, in order to give himself a broad foundation for the practice of general surgery.

At the time the recent World War broke out he was acting as Urologist in the Women's Clinic of Stanford University with the title of Assistant Clinical Professor. He served in Serbia under the American Red Cross and was with his unit in the Serbian Hospital at Belgrade during the bombardment of that city by the Austrians.

When the United States entered the war Dr. Beasley joined the Eighteenth Railway Engineers with the rank of Major, and reached France September 1, 1917. Later he was with the Seventy-sixth Field Artillery and was in action most of the time. He was highly commended in the report of General William P. Rivers and was awarded the Distinguished Service Cross for extraordinary heroism in action near Petit Bordeau Woods, France, July 14-16, 1918. Major Beasley was killed in action October 14, 1918, about 8 a. m. on Hill 253, about two kilometers northwest of Cierges, France, and was buried by a detail of the Seventy-sixth Field Artillery on this same hill.

The responses received for a memorial plate to Dr. Beasley, which has been placed in the Lane Medical Library, have been greater than necessary and a balance in this memorial fund remains. Feeling that Dr. Beasley is so widely revered for his heroic work and so beloved by his many old patients and friends, as well as admired by the medical profession of California, as representing the highest type of physician and surgeon, the Medical Faculty of the Stanford School of Medicine has decided to solicit funds for the creation of a Beasley Memorial Fellowship. It is hoped that this fund will ultimately be something in the neighborhood of \$25,000. Something over \$1,000 has already been promised.



DR. SHADWORTH BEASLEY

Contributors may send contributions to the Dean of the Stanford University School of Medicine, who will acknowledge the same and transmit the sums received to the Board of Trustees of the University, who will expend the interest on the fund according to recommendations received from the Medical Faculty.

ALFRED BAKER SPALDING

Chairman of Committee.

WILLIAM BREAKEY LEWITT San Francisco

On April 25 San Francisco lost one of its most beloved physicians, Dr. William Breakey Lewitt. Doctor Lewitt had long served the community in unselfish devotion to his profession and all sorts and conditions of men, women and children mourn his loss.

Doctor Lewitt was born in Ann Arbor, Michigan, December 12, 1857, the son of Dr. William and Adelaide Lewitt. His early education was received there and in Detroit, where in 1877 he graduated from the Detroit Medical College. A year later, in 1878, he took a further degree from the Medical Department of Columbia University. The same year he married Susan E. Smith of Saginaw, Michigan, and in August of that year he moved to San Francisco to begin his life work.

From the first Doctor Lewitt was interested in the teaching side of his profession and his first work in San Francisco was as Demonstrator of Anatomy in Toland Medical College. Later he became Professor of Anatomy in the same school. Doctor Lewitt was a man of vision and of energy, and new fields of work always had his interest and his help. When the Dental College of the University of California was started he was appointed to the position of Professor of Anatomy, which he held up to 1905.

Doctor Lewitt's interest in the diseases of children and the claims of childhood on the medical profession, as a special department worthy of the most intense effort of the physician, made him the Father of Pediatrics on this Coast, and in 1896 he became the Professor of Pediatrics in the Univer-



WILLIAM BREAKEY LEWITT

sity of California Medical School. From that time until 1913, when he retired as Professor Emeritus, he held that professorship and stimulated study and research in the subject of the diseases of children.

Doctor Lewitt's contributions to medical literature were of a sound, progressive character, always scholarly and stimulating to students and physicians alike. He was a member of the Nu Sigma Medical Fraternity and of the Alpha Omega Alpha Medical Honor Society.

Doctor Lewitt was a man of great personal magnetism, a man loved and trusted by men and one whose passing leaves "an empty space against the sky." He leaves a widow and son and daughter, for whom the whole medical profession and Doctor Lewitt's many friends and admirers will always have a feeling of the deepest sympathy in their bereavement. He will always be remembered as a man who grew with the advancements in his profession and was a leader whom the medical profession in California honored and respected.

New Members

Hall, J. Howard, Sacramento; Haake, C. H. G., Kennett; Shoemaker, H. R. D., Lindsay; Briggs, W. R., Sacramento; De Laney, C. O., Sacramento; Smith, H. McVickar, Santa Ana; Yeagle, Roland P., Santa Ana; Donaldson, A. D., Loma Linda; Hill, A. J., Riverside; Morrison, H. E., Banning;

Landon, G. S., San Bernardino; Connell, J. A., San Bernardino; Campbell, C. R., Loma Linda; Beeson, H. O., San Bernardino; Hill, M. W., Redlands; Fiegel, F. X., San Bernardino; Gage, A. T., Redlands; Francis, Raymond T., Oxnard; Barbour, N. P., Stockton; Bulpitt, J. Muncey, Modesto; Nightingale-Bulpitt, E. Z., Modesto; Wolfson, L. H., Modesto; Hensel, L. M., Modesto; Dahleen, H. E., San Jose; Parien, R. H., Gilroy; Pierson, Frederick H., San Jose; Gelder, Edgar E., Los Angeles; Straub, Paul F., Los Angeles; Goodenow, Norman H., Sierra Madre; Smith, W. Burr, Los Angeles; Seaver, Homer C., Los Angeles; Malkin, George M., Los Angeles; Hara, H. J. H., Moneta; Rapaport, Hyman, Los Angeles; Gauden, Lewis, Los Angeles; Sutton, Irwin C., Los Angeles; Johnson, Elmer H., Los Angeles; Bachhuber, C. A., Los Angeles; Bennett, Edwin S., Los Angeles; Hoskins, Greg, Long Beach; Dean, James R., Los Angeles; Mellman, Clarence, Los Angeles; Grubbs, Robert B., Santa Monica; Chamberlain, Frank C., Los Angeles; Tower, I. O., Los Angeles; Ott, Clarence T., Whittier; Parizek, Frank J., Los Angeles; Jones, David N., Long Beach; Exelby, P. B., Los Angeles; Ames, E. W., Los Angeles; Sasso, John A., Los Angeles; Applegate, Chas. F., Norwalk; Napheys, Wm. D., Los Angeles; Williams, P. M., Los Angeles; Force, O. O., Monrovia; Bulpitt, Frederick, Los Angeles; Smith, Gerald F., Los Angeles; Ayres, Samuel, Los Angeles; Denton, William L., Randsburg; Bowman, Paul J., Fort Bragg; Scudder, Royal, Fort Bragg; Avey, John L., Los Angeles; Beck, Horace R., Los Angeles; Davenport, J. Dryden, Los Angeles; Doane, Philip S., Los Angeles; Desser, A. Lincoln, Los Angeles; Fehrensen, Gail, Inglewood; Foote, Charles G., Long Beach; Guidinger, W. R., Long Beach; Heffelfinger, M. A., Los Angeles; Holman, W. Frank, Los Angeles; Ingham, Samuel D., Los Angeles; Kaplan, Max, Los Angeles; Koebig, Walter C., Los Angeles; Lijedahl, E. N., Los Angeles; Mann, H. H., Los Angeles; Merritt, Robert E., Los Angeles; Nichols, J. Norton, Los Angeles; Opp, Paul A., Los Angeles; Norris, Wm. J., Los Angeles; Symonds, Cleon W., Pasadena; Travis, Hartman P., Los Angeles; Van Meter, J. N., Burbank; Warner, Horace E., Los Angeles; Franklin, Blake, Los Gatos; Davis, A. F., Soquel; Weir, John J., Loma Linda; Callanan, Joseph I., San Francisco; Cook, Orrin S., San Francisco; Gottschalk, Adolph, San Francisco; Hobdy, W. C., San Francisco; Horner, Warren D., San Francisco.

Transferred

Osburn, Priestley, P., from Orange County to San Diego County; Trimble, Harold G., from Placer County to Alameda County; Gray, Roscoe N., from San Joaquin County to Alameda County; Wayland, Clyde, from Santa Cruz County to Santa Clara County.

Deaths

BECKH, G. C.—Died in San Francisco, April 21, 1921, of chronic mitral regurgitation. Age 64.
ANDERSON, PAUL J.—Died April 25, 1921. Was a graduate of Cooper Medical College, San Francisco, 1910. Was a member of the Medical Society, State of California.
SUNBURNT, WALTER I.—Died in San Francisco, April 10, 1921. Was a graduate of the College of Physicians & Surgeons, San Francisco, 1899. Licensed in California, 1899. Age 55. Influenza broncho pneumonia cause of death.
LEWITT, WM. B.—Died in San Francisco, April 25, 1921, from chronic myocarditis. Age 63. Was a member of the Medical Society, State of California.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
 BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO
 Editor and Secretary W. E. MUSGRAVE, M. D.
 Managing Editor CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

| | |
|---|---|
| Alameda.....Dr. Ruby L. Cunningham, Berkeley | San Bernardino.....Dr. C. L. Curtiss, Redlands |
| Butte.....Dr. Edward Baumeister, Chico | San Diego.....Dr. Robt. Pollock, San Diego |
| Contra Costa.....Dr. P. C. Campbell, Richmond | San Francisco.....Dr. Le Roy Briggs, San Francisco |
| Fresno.....Dr. G. L. Long, Fresno | San Joaquin.....Dr. Dewey R. Powell, Stockton |
| Glenn.....Dr. W. H. Walker, Willows | San Luis Obispo..Dr. Paul K. Jackson, San Luis Obispo |
| Humboldt.....Dr. L. P. Dorais, Eureka | San Mateo.....Dr. A. L. Offield, Burlingame |
| Imperial..... | Santa Barbara...Dr. Robert W. Hartwell, Santa Barbara |
| Kern.....Dr. Edward R. Guinan, Bakersfield | Santa Clara.....Dr. Chas. Richards, San Jose |
| Lassen-Plumas..... | Santa Cruz.....Dr. J. B. Cutter, Watsonville |
| Los Angeles.....M. Creamer, Los Angeles | Shasta.....Dr. F. Stabel, Redding |
| Marin.....Dr. W. F. Jones, San Rafael | Siskiyou..... |
| Mendocino.....Dr. O. H. Beckman, Fort Bragg | Solano.....Dr. A. V. Doran, Vallejo |
| Merced.....Dr. Brett Davis, Merced | Sonoma.....Dr. N. Juell, Santa Rosa |
| Monterey.....Dr. T. C. Edwards, Salinas | Stanislaus.....Dr. E. F. Reamer, Modesto |
| Napa.....Dr. Robt. Crees, Napa | Tehama..... |
| Orange.....C. R. Lane, Santa Ana | Tulare.....Dr. J. T. Melvin, Porterville |
| Placer.....Dr. R. A. Peers, Colfax | Tuolumne..... |
| Riverside.....Dr. Paul E. Simonds, Riverside | Ventura.....Dr. C. A. Jenson, Ventura |
| Sacramento.....Dr. S. E. Simmons, Sacramento | Yolo.....Dr. Frances L. Newton, Woodland |
| San Benito..... | Yuba-Sutter..... |

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

JULY, 1921

No. 7

HOSPITAL BETTERMENT IN CALIFORNIA

The Hospital Betterment Movement in California is a carefully planned *service* program of the League for the Conservation of Public Health. It is designed to bring the hospitals to the highest point of efficiency as an effective part of the program of better medicine and better public health. The effort has little to do with so-called "standardization." In fact, the officers of the League believe that "standardization" of hospitals is no more possible or desirable than is the "standardization" of the practice of medicine. It would be disastrous in both cases.

There are science and art and economics in the practice of medicine, and the good hospital must be a part of the application of these principles to the prevention and cure of disease. As "personality" forms an essential and important part of the qualifications of the successful physician, so it must be for a hospital. A hospital must have "personality"—a soul, if you please, and that personality must express itself constantly in idealism, service and efficiency. No two hospitals can be alike, nor should they be alike—to make them so would lead to mediocrity. Each hospital has its own individual problems, and these problems must be solved by different remedies.

The aim of every good hospital is the same. It is sympathetic, courteous, efficient care of the sick; intelligent co-operation in the program of public health, and an earnest part in the education of physicians, nurses, dietitians, physiotherapists and several other specialists necessary to administer to the health of our citizens.

In its work with hospitals, the League committee has applied the principles of the traditional "case record" method of etiology, diagnosis and treatment. A surprisingly large proportion of the hospitals has been found to be ill with a variety of diseases of many causes. In some the illness has been of a minor nature; others are seriously

ill, and some hopelessly incurable. Like the human patient, some of them did not realize their illness until it was pointed out as a result of examination. The vast majority have been found anxious for scientific diagnosis and treatment, and were glad to have the physician prescribe. A very few would not believe in the diagnosis and would not accept treatment. One or two have wanted to change doctors, and a few undoubtedly are being treated by irregular and unscientific methods.

ATTACKS UPON SCIENTIFIC MEDICINE

Students of affairs must be made to realize the increasing strength and variety of attacks that are being made upon Scientific Medicine and Public Health.

There always have existed numerous persons and religious sects who have practiced their own brands of medicine upon themselves, their families, and such other persons as would listen to them. The commercial fakir in medicine always has been a part of our civilization. This man wants the best of scientific medicine when ill himself, but he spends his life in propagating some form of health fraud as a commercial proposition.

These fakes are infinite in variety. Patent "Cure All" medicines, mostly cheap cocktail mixtures, dangerous compositions containing narcotics or harmless colored water, pills, etc., have been so frequently exposed that they are losing popular patronage.

Various mental healing methods based upon religion or "psychology" are probably on the increase. Particularly is this true of some of the so-called scientific branches of these cultists. Much of their "psychology" literature has been of the propaganda type which deals particularly with dreams and sex. After a very thin educational veneer, many of these people convince themselves that they are "psychologists," abnormal psychologists and mental efficiency experts. A con-

stantly increasing number of them are selling their services to the public under one or another name. The group who capitalize the various physical agencies of the healing art is increasing. These also, are of great variety, and a new species is hatched with most every issue of the Sunday papers. They are of species electricity, massage and movement of one sort or another, water, heat, cold, fresh air and many others.

The Mystery and "Religious" group is increasing in the boldness with which they announce special curative attainments for their "healers." In particular, one must view with alarm the constantly increasing extension of several churches into the practice of the healing art. The various special "systems of medicine," with their cheap schools and advertising campaigns, are also on the increase, both in membership and in variety. During the last few months two of these have been launched full-fledged with "Colleges," a national advertising campaign and the usual program of propaganda.

It is quite true that most of these types and many others that have not been mentioned have been with us always. It also is quite true that they usually run a scheduled course of rapid development, final exposure and failure, only to be replaced by a new one. However, it is a fact that these "Cure Alls" are becoming more dangerous to the advancement and health of civilization because of a few fundamental activities which they have more recently adopted. They have taken advantage of the power of organization to a remarkable degree. The organizations are drawn and managed by skillful attorneys with fully developed political machinery and commercial instincts. They have adopted a complete program of "Education" for their members; of progressive advertising to sell their ideas; of mass action to secure immunity from the law; of organized effort to secure legislative protection in their practices, and of a systematic campaign of attack upon the scientific standards of medicine that have been built up through the ages and are today a bulwark of our civilization.

Their "schools" and "colleges" are designed to lower all scientific standards; to provide shortcuts to knowledge, and to make our citizens believe that preliminary education and hard study over long years in good schools is not necessary for qualification to practice the healing art.

In their "colleges" in their advertising, in their offices, in the courts and upon the floors of our Capitol, they attack the educational program, the standards of practice and the very foundation principles of Scientific Medicine.

Their whole program has become one of anti-scientific Bolshevism. Medicine and public health happens to be the first of the scientific professions to be attacked. Should they succeed materially in this field, the other learned professions of engineering, law, etc., will come next.

This question deserves the serious attention of every good citizen, not as a matter of protection for any group of men, but as a matter of preservation of a science that has proved its efficiency in the prolongation of life and the cure of disease.

PHYSIOTHERAPY

In approving the organization of Physiotherapists at the annual meeting of the State Society, held in Coronado in May, the medical profession of California have taken another advanced stand for better medicine and better public health.

The important fundamental principles of the California Association of Physiotherapists are included in their preamble and constitution, which is published on page 270 of this number of the Journal. Under the terms of this organization, physiotherapy is defined as "a group of physical therapeutic procedures to be prescribed by doctors of medicine and administered under the physician's direction by specially educated and trained technical assistants." Physiotherapists, in the meaning of the California organization, are "the educated, trained technical assistants to the members of the medical profession, who subscribe to and are imbued with the ethics, ideals and spirit of service that inspire and govern the physician in the practice of the healing art."

The organization as promulgated, and as now functioning, is an effective unit of the medical profession of California. The supreme governing body of this organization is an Advisory Council, composed of the Council of the State Medical Society, the Executive Committee of the League for the Conservation of Public Health and the Executive Committee of the California Association of Physiotherapists.

The State Medical Society, at its recent meeting, also authorized the Council to extend organizations similar to that of Physiotherapy to include other "technical specialties" of medicine, and the organization of several of the more important of these is under consideration at the present time.

Forward thinking physicians and public health officers must realize that the time has come when the "technical specialties" of medicine must be made part of the machinery of prevention, diagnosis and treatment of disease. Failure to realize this in the past is responsible for much of the present propaganda and practice of unscientific medicine by unqualified persons. The physiotherapist must be the technical assistant to the educated physician, acting always under his instructions, or she will become an independent specialist responsible through wrong organization to policies and people not properly prepared to practice the healing art.

There is, of course, nothing new in the application of the principles of physiotherapy in the treatment of disease; this is as old as medicine itself. However, the systematic training of special assistants to carry out this work, corresponding in their relations to physicians to prescription pharmacists, nurses and other technical assistants, is of more recent origin. The requirements of modern medicine and surgery during the war demonstrated again the importance of this form of therapeutics and gave an impetus to this work which must be continued effectively as part of our program of better medicine and better public health.

RESPONSIBILITY FOR STATEMENTS AND CONCLUSIONS IN ORIGINAL ARTICLES

The author of an article appearing in the Journal is entirely responsible for all statements and conclusions. These may or may not be in harmony with the views of the editorial staff. Furthermore, authors are responsible almost entirely for the language and method of presenting their subjects. All manuscripts will be carefully read, but editorial privileges will be exercised only to a very limited extent. It is believed that the manner of presentation of any subject by any author determines to no small degree the value of his conclusions. Therefore, both the author and the reader, in our opinion, are entitled to have the subject as presented by the author as little disturbed as possible by the editors. However, the right to reduce or reject any article is always reserved.

LEGAL LIABILITY FOR TRANSMITTING INFECTION

Personal responsibility for the transmission of venereal disease has now been upheld in several different phases by both civil and criminal courts, according to the U. S. Public Health Service. In Oklahoma a man has been sentenced to five years in the penitentiary for infecting a girl with syphilis. In Nebraska the court upheld a doctor who warned a hotel keeper that one of his patients, a guest at the hotel, had syphilis and had refused treatment, and was consequently a menace to the public health. In North Carolina a woman has been awarded \$10,000 damages against her husband for a similar infection, and the Supreme Court has upheld the judgment.

The Nebraska case is important because it asserts that a physician's duty to protect the public health may, under certain circumstances, transcend his duty to hold his patient's confidence inviolable. The North Carolina case is also important, because it sets aside in this particular case the legal barrier that prevents a wife from testifying against her husband and bringing suit against him.

All three cases are valuable in counteracting incorrect statements, often made, that the venereal disease law falls almost exclusively on women and lets men go free. State laws, of course, govern in all such cases, but the fact that every State in the Union has now adopted many, if not all, of the venereal disease laws, gives ground for expecting similar action in other States. Certainly, the wide dissemination of the three decisions should go far to curb diseased persons who deliberately expose others to infection.

The fact that the North Carolina decision makes it likely that marriage will henceforth be no adequate defense against a suit for transmitting infection will probably hasten the adoption by the States of laws requiring every applicant for a marriage license to present a certificate by a reputable doctor, certifying that he is free from venereal disease, and providing that without this no license shall be issued.

Twenty States have already adopted laws forbidding persons with venereal disease to marry, seven of these—New Hampshire, New Jersey, North Carolina, Oregon, Washington, and West Virginia—having acted during the present year's sessions. A similar bill is now pending in Florida.

PRESIDENT'S ADDRESS *

By DR. JOHN C. YATES, San Diego.

Members of the Medical Society of the State of California:

The Society has discontinued the former custom of having the Mayor and other dignitaries bid you welcome to the city in which the meeting was to be held, and has used the time for the newly created general section, dealing with matters of common interest to all members. It was thought that our meetings were becoming too highly specialized for the general practitioners, who represent the vast majority of our membership, to receive the greatest benefit from the sessions. It happens that your president is a resident here, and on behalf of the San Diego County Medical Society and the citizens of Coronado and San Diego, I wish to welcome you to our city, and hope you can all remain longer than required by the Society meeting, to enjoy our climate and amusements in this care-free land, far away from the strife and struggle of your cities. You can have golfing, tennis, boating, swimming, all the year round. Again, I bid you welcome. While I still claim the honor of being your first probation-prohibition president, I will not attempt the Invocation.

The past year, the fiftieth of our existence, has been a very eventful one in the annals of our Society, and this meeting, which is our Golden Jubilee, is very appropriately held in San Diego, the birthplace of California. As you will hear from the secretary's report, our Society has increased 327 members, and from the treasurer's report, you will note that we now have, to date, \$22,765.47 on hand, and we had a surplus account at the beginning of the year of \$11,870.78. Formerly the years have closed with a deficit, requiring the giving of our note to carry us until dues came in. But even more gratifying than the condition of material prosperity shown by these reports, the election of November 2 last, and the campaign which preceded it, showed that our profession, through that remarkably efficient organization, The League for the Conservation of the Public Health, is really a factor to be reckoned with in the affairs of our great state.

Some years ago when our Society was small in numbers, it was customary for the president to address you upon some new idea or ideal of organized medicine, the progress of medical science during the preceding year, or some subject germane to the practice of medicine. Then our president was elected by reason of his eminence in scientific work; but now our Society has grown to such large proportions that the sections are individually greater than was the old Society, and in the addresses of the chairmen of the various sections, and papers by the members, you get what is new in scientific medicine, so that I feel I may be pardoned if I digress from the customary presidential address of the days when our Society met as a unit, and take up a few of the stubborn facts that present themselves today from other

* Read in the general session Tuesday, May 10, 1921, at 11 a. m., Coronado, California.

standpoints; to attempt to find some solution for some of the conditions now existing, and if we find errors on our part to offer some suggestions for their correction. Perhaps I have been inoculated by the "unrest bug," which is at the bottom of the trouble with the general public. This feeling of unrest, Bolshevism, dissatisfaction of existing conditions—call it what you will—has been going on for several years, during which time the laity, so called, have become anti-religious, anti-organization, and anti-medical, culminating in the great catastrophe of the World War. Now we are in the maelstrom of a readjustment along all lines, and the physician can no longer close himself up in his shell and say that he has no interest. He must take his place as a citizen and do his duty as such. He must do something to show the public that he has the convictions of his belief. By this I do not mean advertising as individuals, which can never be done by legitimate, scientific men, and hold their self-respect. Our Constitution states boldly, as our object for existence that, "The purpose of this Society will be to federate and bring into one compact organization the entire Medical Profession of the State of California, and to unite with similar societies of other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members; to protect them against imposition, and to enlighten and direct public opinion in regard to the great problems of public health, so that the profession shall become more capable and honorable within itself, and more useful to the public in prevention and cure of disease and in prolonging and adding comfort to life"; a very laudable undertaking, indeed, and one capable of fulfillment if we all do our part.

Taking the component parts of Section 2, Article I, separately, let us consider where we, as a medical society, have not lived up to our well-meaning Constitution. The first object, "bringing into one compact organization the entire profession," is being slowly accomplished. The Council, through Dr. Saxton Pope, then our secretary, instituted a little over a year ago a survey of the entire profession throughout the state. Beginning with the larger cities, this work has been carried on in a number of the country districts, and is now going forward with signal success. A traveling representative of the secretary's office has been steadily at work interviewing each and every member of the Society in the counties visited, getting suggestions as to what the Society can do for the county member, what suggestion or help the State Society can give the County Society, and matters of this kind. I am very pleased to report that during the year just passed substantial progress has been made in this regard. Here I wish to say a few words about Dr. Saxton Pope, who resigned as secretary in February last. Dr. Saxton Pope accepted the

secretaryship of our Society in January, 1917. He did so at the earnest request of a number of our leading members, and upon the urging of practically the entire membership has continued in the secretaryship up to the time of his resignation. Doctor Pope, in his gentle and thoughtful consideration for every man who came to him with his personal problem, no matter what it might be, and in his constant effort to build up the Society at all points, has deserved and won our keenest appreciation and gratitude. In the same spirit in which he served he tendered his resignation and advocated the election of his successor, feeling that Doctor Musgrave, with more time and with his peculiar training, could make us a better executive. The second object, uniting with similar Societies to form American Medical Association, is accomplished. The third, to extend medical knowledge, advance medical science and elevate the standard of medical education, is being done to a great extent; but I feel that our colleges should amplify their curricula by adding thereto fuller courses upon the therapeutics, especially along the lines of physiotherapy, which was developed and advanced during, and since, the war, in the reconstruction and rehabilitating of men injured physically or mentally during that crisis. The fourth, to secure the enactment and enforcement of just medical laws, and to guard and foster the material interests of its members and to protect them against imposition, we have turned over to that organization, composed mostly of physicians, known as the League for the Conservation of Public Health. How well it has done its work you all know. It is superfluous for me to comment here upon the wonderful work achieved November 2 last, when, for the second time in American history, vital public health measures were submitted to a public vote, and science, led by the League, triumphed on every issue. It is not putting it too strong to say that the attention of the medical men everywhere has been focused upon our great organization, the League, during the past year, and the query is constant as to how this uniform success has been achieved. Perhaps it may not be out of place for me to say that progress in our Society and the progress of scientific medicine depend upon harmony and co-operation among the members of the profession. The subordination of personal views to the views of the majority. The cheerful compliance with requests for work or service made by our leaders; the elimination of all motives of personal vanity, egotism or self-aggrandizement at the expense of the organization. The last purpose, to enlighten and direct public opinion in regard to Public Health problems is, I am afraid, our greatest failure. The ceaseless and untiring propaganda put forward by the various cults, fads and isms is carefully prepared for consumption by the laity. Physicians hesitate to adopt their methods, feeling that to do so is beneath the dignity of our profession. The time has come, in my opinion, when we should devise and put into operation some method of reaching the public with unbiased facts about medicine and public health. I

realize fully that these problems seldom come before the Society as a whole, but are of a sort constantly before your Council—that body that has to do with the legislative and business duties of your Society. The new councilman soon learns that the directing of the affairs of our Society and of the profession has many sides and many problems. He soon learns of the work carried on persistently against medical standards and of the continuous work and watchfulness required to combat the various schemes.

What policies are necessary to bring about a complete understanding between the physician and the layman? What must we change in our present methods of dealing with the public so that the layman will desire the services of the highly trained, scientific physician, rather than those of the uneducated? Have we not been derelict in our duties toward the public in spreading our ideas to them? The ordinary person, I believe, has less idea about the most important thing in the world, namely, himself, than any other subject one can bring to his attention. His knowledge, if it can be so called, is mostly derived from sensational articles in the public press and from advertisements of the various cults. His quoting of this pernicious trash shows clearly that he has a thirst for knowledge, but is not capable of differentiating the true from the false. In fact, the general public knows very little about us or our ideals, so it seems to me it is time to educate, and in doing so we must begin at the fundamentals and proceed from grade to grade until they attain a knowledge of our present high standard of altruism and service. The public follow the crowd to some popular physician, who may have become popular through various agencies, rather than through his scientific knowledge. The layman, with no basis to judge by, is satisfied with what is given him as an examination, and misses the superior assistance he might have had by going to the physicians' physician, the man whom his colleagues respect for his knowledge and scientific attainments.

At no time in its history has the medical profession been assailed from all sides by various cults, pathies, etc., and through as vicious proposed legislative measures and advertising as at the present time. This again leads us to the necessity of education of the public in the knowledge that one small branch of therapeutics cannot be made to cover all the ills that humans are heir to. It also brings us to the place where we must realize that the wrangling and jealousies of the individual practitioners must be replaced by harmony among ourselves. We must realize that before the student is a doctor of medicine he is a human being, and as such is afflicted with the frailties that exist among human beings, regardless of whether they are engaged in the practice of medicine or in other vocations. In other words, the physician may be honest or dishonest. The work of a dishonest practitioner reflects upon the efficiency of the entire profession, for the reason, as has been stated before, that the public have no adequate method of distinguishing between the honest and dishonest. This

brings up the mooted question as to who should be a member of our State Society, and who should be the judge. The method was adopted some time ago of leaving the determination of the question to the Local or County Society, for the reason that the members were in closer relation to the applicant, therefore, in better position to know him personally and the character of his work. This has now been supplemented by an additional safeguard of having the secretary of the State Society furnish the Local Society with any data in his possession as to the applicant's fitness for membership. This still leaves us in an undesirable position, for if any inquiry comes to the state office concerning a certain member of our Society, it must be referred to his county unit for answer. It seems to me some further method should be devised whereby the State Society would have a closer touch and insight as to the qualifications of members, in order that the fact that one belongs to the Medical Society would act as a guaranty of his or her ability and honesty in the practice of medicine. When this step is taken, and the public learns of it, there would be less complaint about the inadequacy of medicine than we have at the present time. To meet these conditions the State Society is about to inaugurate, through the secretary's office, what might be termed new lines of communication with the county units. The county units will receive helpful and progressive suggestions. They will be kept in closer communication with the state office, and methods for properly interesting the lay public in scientific medicine will be evolved. Your Council and officers keenly appreciate the necessities of the situation and have plans for the definite solution of these matters. Appropriate action might make our Society smaller, but membership in it would mean something more than a stepping stone to membership in the American Medical Association.

The Legal Department, during the past year, has again proved its superior excellence to all other forms of protection from the many unjust claims against us. Our attorneys have handled the usual number of claims and cases with their same unwavering fidelity and devotion to duty in the interests of the physician in each individual case. Many of our members do not understand that this department is their sole protection if they do not carry insurance, and if they have no insurance it means that all the cost of any litigation in malpractice cases, including all attorney fees, are borne and paid by the Society—that is to say—the State Society provides legal counsel in malpractice suits for *all* members, whether they have contributed to the Indemnity Defense Fund or not. If suit is decided against a member, the Defense Fund pays assessed damages *only* for those who *are* contributors to that Fund. As the officers and Council of the Society have frequently stated, every member is recommended to join the Indemnity Defense Fund, if he has not already done so, regardless of whether he carries insurance or not. As the report of our attorneys will show,



DR. JOHN C. YATES

Dr. John C. Yates, born near Roberts, Illinois, June 29, 1874; graduated from Peoria High School, then two years' college work at Hedding College. Graduated from Rush Medical College, 1897. House surgeon, Union Hospital, 1898 to 1906. President of San Diego County Medical Society, 1916. Member Council State Medical Society.

this protection has proved most satisfactory and has operated most successfully.

In closing, I wish to make a few recommendations:

FIRST—On account of the increasing size of our Society, and consequently the greater number of very excellent papers that cannot be accommodated on our program, that the time of meeting be lengthened to five days instead of three, as at present, or else two meetings be held during the year.

SECOND—That the Secretary of each County Society be made a delegate to our annual State Society meeting, whenever practicable, as it is the secretary of the Local Society who usually carries the burdens of the Society.

THIRD—That a joint meeting of the secretaries of Local Societies, together with the secretary of the State Society and Council, be held during the annual session. The secretary of the State Society should act as chairman of these meetings, which should be devoted to a free and full discussion of all problems of interest to the profession.

FOURTH—That more intensive work be taken up by the president and secretaries of Local So-

cieties as to the legal protection afforded by our State Medical Society.

Again, in turning over the gavel of this Society to my successor, Dr. John H. Graves, I want to thank you for the generous support given me by the Council and officers, and for the high honor you have conferred upon me as the president of this Society.

Minutes of the House of Delegates

THE FIFTIETH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

FIRST SESSION

Held at Hotel del Coronado, Coronado, Tuesday Evening, May 10, 1921, 8:30 O'clock.

ROLL CALL

Fifty-three (53) Delegates were seated, and the President, John C. Yates, declared a quorum present.

REPORT OF THE PRESIDENT

The President made the following report: Members of the House of Delegates:

I note upon the program that the President is at this time supposed to give you a report. I have already covered a great deal of what should come in this report in my address of this morning. About the most important thing that has occurred out of the ordinary this year is the change of secretaries. It seems a peculiar coincidence that just previous to the last meeting in Coronado, on account of the death of our good friend, Dr. Phillips Mills Jones, a change had to be made. As you all know, Dr. Jones had always combined the secretaryship with the editorship. Dr. Saxton Pope and Dr. Reed immediately resigned, so that now Dr. Musgrave will act as both secretary and editor.

I wish to again thank you for the men you elected to the Council, who, under the leadership of our good old friend, Dr. Kenyon, have so ably conducted the business affairs of your Society. The work in the office has been conducted in the usual efficient manner.

APPOINTMENT OF THE REFERENCE COMMITTEE

The President appointed the following Reference Committee: Jas. H. Parkinson, Chairman, Sacramento; Alfred C. Reed, San Francisco; George H. Kress, Los Angeles, and Hartley F. Peart, San Francisco, General Counsel, ex-officio.

REPORT OF THE COUNCIL

To the President and Members of the House of Delegates:

In conformance with my duty as Chairman of the Council, I beg to make the following report:

In the year 1872, it was my pleasure to attend the reorganization meeting of this Society. In attendance were Doctors Logan, Curtis, Simmons, of Sacramento, Doctors Morse, Taylor and the Gibbons, of San Francisco, and others throughout the State—most all representatives of Argonauts of the early history of California. These were able men, fully abreast of the profession of the United States. Through the lapse of time, up to the present day, I am pleased to say that the position which they took in medicine has been main-

tained. For over twenty years I have had the honor of presiding over a body of men, whose influence has been most uplifting.

During the year the Council has lost one of its most valued members, Dr. Andrew W. Hoisholt, of Napa, Councilor from the Ninth District, a man who served the Society faithfully for many years, and whose presence in the Council was of great value to the medical profession at large. In his death we have sustained a loss which cannot be repaired.

In this last year, the Council has called its members together on six different occasions, one being held in Los Angeles, January 29, 1921. Five were regular sessions—the sixth was specially called for the purpose of considering the resignation of our highly esteemed secretary, Dr. Saxton Pope, under whose guardianship the office of the Society has been for the past four years. Dr. Pope was elected secretary, you will recall, to take the place of the late Phillip Mills Jones. This period in the growth of the Society has been one of prosperity and harmony. The finances of the organization have been in splendid condition, and there has been more unity of purpose and less discord than ever before.

The Journal has been edited by our worthy editor, Dr. Alfred C. Reed, and it is a credit to the organization and stands in the foremost rank of state journals.

It had been recognized, however, that it would be to the advantage of the Society to have the two offices, that of secretary and editor, combined and the secretary should be a full-time man.

At his last election, Dr. Pope stipulated that if the proper person should appear to take his place as secretary that he should be permitted to resign. Therefore, when it became apparent that the services of Dr. W. E. Musgrave could be obtained as secretary, at the request of Dr. Pope a Council meeting was specially called, at which time he tendered his resignation, suggesting that the Council appoint Dr. Musgrave to fill his unexpired term. Considering the long training of Dr. Musgrave in executive positions and in the work of medical organization, we can consider ourselves very fortunate to have obtained his services in the capacity of secretary.

At the succeeding meeting of the Council, Dr. Alfred C. Reed tendered his resignation as editor of the California State Journal of Medicine.

In this combined position, Dr. Musgrave has already shown his value by his active co-operation with the League for the Conservation of Public Health in the work attempted at Sacramento during the recent legislative session.

The work of the Council during the past year has been directed toward three main issues.

Operating through the Publicity Bureau, the Society has maintained a field secretary in the person of Mrs. R. V. S. Berry, whose business it was to go throughout the State and obtain new members for the State Society, assist in the better organization of the County Societies, and reconcile the differences among doctors in the various communities. It has been necessary in some instances to reorganize some of the County units, and as the result of her work, our membership has grown to a figure of very flattering proportions. There is an increasing cohesion and co-operation between the County Societies and the State office. She is still at work, and has added to her duties that of increasing the membership in the Indemnity Defense Fund.

This portion of our legal protection work has been very satisfactory. The Fund now contains 1060 members, its assets are intact, and no material deductions have ever been made from them. The interest accrued from the fund has almost covered such small compromises as have been found necessary to make. Five years have elapsed

since its beginning, and the Council has now decided that it is time to levy a small assessment.

The Fee Schedule for Industrial Surgery, as adopted by the House of Delegates at our last meeting, has become operative with most of the insurance carriers. The Council has endeavored to do its part of the work by fulfilling the obligation the State Society bears to the insurance companies. Some difficulties have arisen throughout the State between the carriers and the County Societies, but these have been adjusted amicably and the situation bids fair to continue in a harmonious way, with a gradual increase of fees until a satisfactory compensation for this type of service has been obtained.

Under the authority of the Council, the work of Dr. Musgrave is to be greatly amplified, and the influence of the Society will be felt throughout the entire state.

As chairman of the Council I am pleased to bear witness to the ability and efficiency of the splendid work of our attorneys. It is largely due to the services of General Counsel Hartley F. Peart, that California is well in the forefront of State organizations.

Your Council, therefore, reports a year of progress, of reorganization, of scientific advancement, and of perfect peace and harmony.

I beg to thank the Society for the honor conferred upon me as chairman of the Council. It is fair to state that the honors and continued favors extended to me, for which I will always hold feelings of gratitude, are far beyond the merits of a grateful recipient.

C. G. KENYON,
Chairman of the Council.

REPORT OF THE EDITOR

Annual Report of Editor of the California State Journal of Medicine.

Gentlemen: It is with peculiar pleasure that I introduce this report with my hearty congratulations to you on having selected Dr. Musgrave to serve as editor and secretary of the California State Society. Dr. Musgrave's acceptance of this position affords every prospect of progressive and constructive advancement of the interests and influence of the State Society. It has been my frequently expressed belief during the last few years that the interests of the Society would best be served by one full-time secretary and editor, and in Dr. Musgrave the qualities necessary for the successful prosecution of such a function are blended with peculiar fitness.

It is, therefore, with a feeling of confidence in the future, and of assurance that the development of the State Society is proceeding constructively, that I have placed my resignation as editor in the hands of the Council. In terminating four years in this position, I wish to pledge once more my loyalty to the cause of scientific medicine, and to assure you that my service will be always available in the interests of the State Society whenever the call comes. I wish, also, to pay a well-earned tribute to the never-failing enthusiasm and efficiency of the office staff of the State Society. Miss Bowie, Miss Bradford and Miss Lubbock have rendered a service to the medical profession which can never be repaid.

As in the previous years, so again now I prefer to make the Journal report a matter of reference to the Journal itself. Its successes and its failures are on record. In the way of looking ahead, I can only call attention once more to the need for a larger Journal issued more frequently, with an attractive cover.

Assuring you once more of my continued cordial and loyal relationship to the development of the State Society, I am,

Very sincerely,

ALFRED C. REED.

REPORT OF THE AUDITING COMMITTEE

Audit for 1920

April 7, 1921.

Medical Society of the State of California,
930 Butler Building,
San Francisco, Cal.

Gentlemen:

I have audited the books and accounts of the Medical Society of the State of California for the year 1920. In connection therewith, the following statements are attached hereto; viz:

Balance Sheet, December 31, 1920.

Income and Expenditures for the year 1920.

Survey of Cash Receipts and Disbursements for the year 1920.

These statements have been prepared from the books and accounts, and I hereby certify that, in my opinion, they exhibit a true record of the affairs of the Society.

UNFINISHED BUSINESS**Adoption of the Report of the Committee on Industrial Accident Work**

Jas. H. Parkinson, Chairman of the Committee on Industrial Accident Work, reported as follows:

When the report of this Committee, as presented to the House of Delegates at the meeting of 1920 was adopted, the matter was referred to the Council with instruction to put it into operation at the earliest possible date.

The Council at its meeting of May 13, 1920, continued the Committee, with orders to make the new fee bill effective by June 1, or as soon thereafter as practicable. Arrangements were also made for issuing the report blanks under proper restrictions. There was some difficulty regarding immediate operation of the fee bill, as instructions to the carriers on this Coast had not been received from the New York Board, and no adjustment of rates had been made. In spite of this, some of the companies voluntarily assumed the increase, making the new schedule operative June 1.

The standard report blanks were readily accepted, most of the companies expressing their willingness to use them. Where large quantities of blanks were on hand, use of the Society's blanks, it was stated, would be postponed until stocks had been exhausted. In view of the high cost of paper and printing, this suggestion was regarded as fair and reasonable.

On January 1, 1921, there were thirty-five companies writing compensation insurance in California. Of these, sixteen belong to the so-called Board Companies. On May 1, 1921, the new fee bill had been adopted and placed in operation by practically all companies doing business in the State as well as by the Industrial Accident Commission. On this date, standard report blanks were being used by five of the companies who had accepted the Society's imprint and signed the receipt prepared by our legal department.

This comprises the work of the Committee for the year. Owing to disturbed financial and industrial conditions, the Committee did not believe it advisable at this time to seek any change in fees or modification in conditions. When times are favorable, a further modification can be taken up in whatever direction promises best results.

The question of a permanent committee along lines suggested by the Casualty Underwriters Board in San Francisco was considered and was decided to be impracticable owing to the necessary loss of time and expense to members of the Committee. A suggestion by the attorney that a woman with experience in compensation insurance offices be employed was also taken up, but it was felt the funds of the Society would not admit of provision for the necessary salary and expenses. It was decided that every effort should be made to induce the profession to forward its

complaints to the office of the Society. Through the employment of a full-time secretary it was felt that more time could be given to this work, and a fair estimate of the proper requirements for efficient service could thus be made.

The Committee believes that no more necessary work can be done for the profession than the adjustment of its differences with the insurance carriers. To do this efficiently and in such manner as to be acceptable to all concerned, demands careful study of conditions and methods, and the creation of adequate machinery. This cannot function unless properly financed. The expense must not be burdensome upon the Society, nor must it be lessened by imposing upon voluntary service.

While a further increase of fees is regarded as in abeyance for the present, there are two questions that may properly be considered at this time. The first is that of the flat fee originally proposed by Dr. Graves and taken under advisement by the Casualty Underwriters Board. The Committee believes that members of the profession, as individuals, should consider this in relation to themselves and their work. It is evident that the time limitations originally suggested by the Committee must be abandoned, and with these eliminated the private companies seemed willing to accept it. It would, however, be necessary to clearly define the difference between medical or surgical and industrial recovery. In actual practice these are not identical nor do the treatment periods coincide. A definition based upon surgical recovery would probably be fair to all.

The second, of even greater interest to the profession, is the enlargement of the so-called panel. This is a vital one, and it must be taken up and pushed to an early and satisfactory conclusion. Members of the Society who are familiar with the workings of the Compensation Act where it touches the profession, and who have watched it closely since its inception, are agreed that it has worked out very much as was expected. Even those who originally held that this work should be open to every member of the profession, no longer hold that view. It was inevitable that a process of selection must take place not only from the business standpoint of those carrying the insurance or paying the premiums, but also from that of the injured man. It is practically true that the best financial showing for the carrier means the best results for the employe.

The most that the profession should ask is, that every man qualified to undertake compensation work should be permitted to do it. The profession should not demand more, it must insist on nothing less. It is obvious that the determination of professional fitness must not be left to the carriers. It should be assumed by this Society on behalf of its members. How this shall be determined demands most careful consideration. The situation is here, and the machinery to deal with it must be provided.

In connection with this question, and bearing directly upon it, are certain details that must be kept constantly before the profession.

Your Committee has endeavored to provide better remuneration, a simplified and standardized working system, and having achieved these two, will now try to make compensation work available to the largest possible number. The profession in return must demonstrate, by its work, that any agreements or commitments by authorized agents of the Society will be lived up to by the membership.

Complaint is made that the insurance carriers select certain members of the profession and employ them to the exclusion of all others. That is true, but the profession is not blameless in the matter. There are very definite reasons for this on the part of the carriers. They are engaged in a commercial pursuit, and for profit. All unnecessary expense must be eliminated, and the

doctor, unfamiliar with the clerical side of this work and careless and dilatory in its execution, is a constant and unnecessary expense.

The profession must grasp the fact that compensation payments, not medical fees, are the great source of expense to all companies. The compensation feature absolutely depends upon the medical reports. The Company has no other source of information and no other data upon which to figure.

The doctor who wishes to do this work, and who would be an asset rather than a liability, must master the very elementary details of "paper work" and must report his cases immediately, sending in subsequent reports promptly and regularly. These reports relate to his fee only indirectly, but they are vital to the question of compensation and its payments. In the same way prompt replies to letters should be assured, as they usually relate, first, to compensation matters.

On the question of fees it should always be borne in mind that the schedule in operation represents minimum or basal figures. Extra fees, extra attendance, larger fees than are specified, longer attendance, special service, consultants' fees, will all be paid if the ordinary and common-sense methods of obtaining them are followed. The Company knows nothing about the case except what it hears from the medical attendant. It is not reasonable to expect payment of fees in excess of the schedule that are unaccompanied by any explanation.

Where increased expense is inevitable, or where the carrier, in his own interests, should spend more money, send a written explanation. If the case seems likely to prove expensive, write and say so. If complications arise, say so by mail. If you want help, write for it. In every case if you want more money, write for it. If it is not worth writing about, don't put it in the bill. In case of trouble or difficulty, write the secretary of the Society, and don't waste time or energy on the carrier, nor seek to relieve your feelings or express your convictions with pen or typewriter. This is the only way to conduct an unsatisfactory business in the least unsatisfactory manner.

The carriers have made agreements with the Society, the members must act up to these agreements. They must demonstrate that this Society offers the best means of transacting compensation insurance work efficiently and economically. First-class work means a material saving in compensation payments, which, when demonstrated, furnishes the only real basis for an increase in fees.

In conclusion, it will be of interest to mention briefly and without comment, some insurance features of the last legislature.

Early in the session, a bill was introduced prohibiting any private or commercial insurance company from writing compensation insurance in California. This bill did not pass.

A bill radically amending the present Compensation Act provided, among other things, for widows' pensions, old age pensions, medical and hospital rehabilitation, including all medical and surgical treatment of the employe and his dependents. To offset in some measure the material increase in expense that this would necessitate, the State Commission sought authority to collect from industry the death benefits in all cases of employes where there were no dependents.

These changes were not authorized by the Legislature. Most of them under another name were, upon referendum, defeated by the people at the last election. A very definite advance in the insurance situation has been achieved by A. B. 1266, which is now in the hands of the Governor. This provides for the appointment of two independent Boards of Medical Referees, one in Los Angeles, and one in San Francisco. To these Boards must

be referred all cases in which questions in dispute that are purely medical or surgical are involved. The decision of the Boards will be final, and will be binding on all concerned, or equally on the Industrial Accident Commission and on the commercial carriers. The creation of an impartial tribunal in these cases marks a distinct advance in Industrial Accident Insurance.

JAMES H. PARKINSON,
JOHN H. GRAVES,
GAYLE G. MOSELEY.

On the motion of Parkinson, seconded by Bine, the report was unanimously adopted by the House of Delegates.

REPORT OF THE COMMITTEE ON EXPERT MEDICAL TESTIMONY

Gayle G. Moseley, Chairman of the Committee appointed on Expert Medical Testimony, read the report of the Committee.

This subject was considered so important, and to cover such a wide field, that the Committee felt further data should be secured including suggestions from the various County Societies.

It was felt that the material could be more definitely and properly co-ordinated, and some conclusions reached as to definite recommendations to the Society, by the establishment of a special bureau or committee working directly with the secretary of the Society, and in co-operation with the Society's legal department.

The need of such an arrangement is apparent, when one considers the amount of work and study that has been given this problem by such men as Dr. Lobingier. Such studies have resulted in the formation of definite plans, the carrying out of which, however, has been difficult on account of lack of proper co-operation from the organized medical profession. Your committee feels that through such a bureau as suggested, the force of the medical society could be utilized to accomplish such necessary changes and additions to existing law as would place expert testimony on such a high plane that it would have the unqualified respect and confidence of both the medical profession and the public.

Your committee, therefore, recommends that the House of Delegates instruct the Council to establish such a bureau or committee.

The data collected by your present committee would be turned over to the secretary of the Society, who, it is recommended, would become the secretary of the bureau. In this way all information concerning the subject of expert testimony would be collected in the office of the State Society and become a part of the records of the Society.

(Signed) GAYLE H. MOSELEY, Chairman.
ANDREW S. LOBINGIER,
A. H. ZEILE,
JOSEPH CATTEN.

On the motion of Phillips, seconded by Van Zwalenburg, the Report was referred to the Reference Committee.

In accordance with the rules of the Society, the following resolutions were presented and referred to the Reference Committee:

RESOLUTION NO. 1

Organization of Physiotherapists

(a) Resolved, That the Medical Society of the State of California hereby approves the organization of Physiotherapists in a State Association under the terms and conditions of a Constitution in words and figures, as follows:

PREAMBLE AND CONSTITUTION OF THE CALIFORNIA ASSOCIATION OF PHYSIOTHERAPISTS

PREAMBLE

For all the purposes of the California Association of Physiotherapists, including its Preamble and Constitution, Physiotherapy is defined as a group of physical therapeutic procedures to be prescribed by doctors of medicine and administered under the physician's direction by specially educated and trained technical assistants.

The diagnostic and therapeutic agencies and activities included for purposes of this organization under the general term of Physiotherapy are: therapeutic massage, muscle training, postural work, therapeutic gymnastics, re-educational gymnastics, hydrotherapy, electrotherapy (except Roentgen rays and radium, thermotherapy, actinotherapy, mechanotherapy, psychotherapy, occupational therapy, therapeutic vocational training, therapeutic shops, and other forms of mechanical and physical therapeutics, based upon scientific facts.

Physiotherapists, therefore, in the meaning of this organization, comprise the educated, trained technical assistants to the members of the medical profession who subscribe to and are imbued with the ethics, ideals and spirit of service that inspire and govern the physician in the practice of the healing art.

As practical physiotherapy is an integral part of modern medicine, physiotherapists should form an effective unit of the organized medical profession. It is, therefore, the permanent purpose of this organization to become intimately identified with local, state and national organizations of the medical profession devoted to improving the practice and progress of scientific medicine for the promotion and protection of the public health.

CONSTITUTION

Article I

Name

Section 1. The name of this Association shall be The California Association of Physiotherapists.

Article II

Purposes

Section 1. The purposes of the Association are as described in the Preamble, which is hereby made a part of the Constitution.

Additional purposes are: to encourage and assist in the proper education of students of physiotherapy; to establish and maintain adequate standards in physiotherapy; to hold meetings, conferences and otherwise promote increased efficiency and mutual benefits for members of this organization.

Article III

Membership

Section 1. Members shall be active, associate and honorary.

Sec. 2. Men and women shall be accepted in membership on the same basis.

Sec. 3. Any person who is actively engaged in physiotherapy and who by education, personality, character and experience meets the minimum requirements effective at the time of the application is eligible for active membership. The

minimum educational requirement for charter and active members is that they shall have completed a four-year high school course or its equivalent. In addition they shall have had six months of instruction in physiotherapeutic subjects, in a school acceptable to the Advisory Council, with six months' experience in the actual practice of physiotherapy in an institution or hospital accredited by the Advisory Council, or an equivalent acceptable to the Advisory Council.

Personal qualifications shall be determined by the Executive Committee.

Sec. 4. Any active member of the State Medical Society or any educator or scientist who is actively interested in and has contributed to the knowledge and practices of physiotherapy is eligible for associate membership.

Sec. 5. Physicians or physiotherapists who have rendered distinguished service to physiotherapy may be elected honorary members by the Executive Committee.

Article IV

Officers and Committees

Section 1. The officers of this Association shall be a President, a Vice-President and a Secretary-Treasurer, who shall be elected at the annual meeting. The terms of all officers shall be one year.

Sec. 2. There shall be an *Executive Committee* of seven members, consisting of the President, Vice-President and Secretary-Treasurer of the Association and four members elected by the Association at its annual meeting to serve for one year.

Sec. 3. One-third of the members shall constitute a quorum at any meeting of the members of this Association.

Sec. 4. The Advisory Council shall consist of the Council of the Medical Society of the State of California and the Executive Committee of the League for the Conservation of Public Health acting with the Officers and Executive Committee of this Association.

Sec. 5. Vacancies in office or in the membership of committees may be filled by the Executive Committee.

Article V

Duties of Officers and Committees

Section 1. The duties of officers are those provided for herein together with those ordinarily pertaining to the respective offices.

Sec. 2. The Executive Committee shall do all acts and things necessary to carry out the purposes of this Constitution and shall be the permanent administrative body of this Association. It shall fix the time and place of its meetings and of the annual and other meetings of the Association. The Executive Committee shall meet at the call of the chairman or upon request of two of its members.

Sec. 3. All matters of policy affecting the educational and ethical activities of this Association and its contact with the practice of medicine or with public health shall be referred to the Advisory Council and its opinion and advice shall govern the position and action of this Association; and upon all such matters, the opinion and advice

of the Advisory Council communicated to this Association, without reference by it, shall in like manner govern the position and action of this Association.

Sec. 4. The Advisory Council, representing in part the medical and public health bodies under whose authority and direction this Constitution is formulated and this Association is formed, shall furthermore finally determine whether any act or proceeding of this Association or any member thereof is consistent with the foregoing preamble and the purposes of this Constitution, and what disciplinary steps or proceedings, either of censure, suspension or expulsion shall be imposed upon any member or members hereof for any reason.

Article VI

Membership

Section 1. The name of an applicant for active membership with such other data as is required hereunder and prescribed by the Executive Committee shall be presented in writing to the Executive Committee by an active member. Election shall be by majority of the Executive Committee.

Sec. 2. Associate members shall be nominated and elected as are active members, except that honorary or associate members may submit nominations to the Executive Committee.

Sec. 3. All nominations for honorary membership shall be made in writing at least three months before the annual meeting. Honorary members may be elected only at the annual meeting by the active members of the Association and not more than two may be elected in any one year.

Article VII

Dues

Section 1. The dues for active and associate members shall be six dollars per annum, payable semi-annually or annually in advance. Honorary members shall not be subject to dues.

Sec. 2. Only members whose dues are paid shall be in good standing, and delinquency in the payment of dues for one year automatically forfeits membership.

Article VIII

The official and only publications of this Association are the "Journal" of the Medical Society of the State of California, and "Better Health" of the League for the Conservation of Public Health.

Article IX

Ethics

In matters not herein expressly defined, the code of ethics of the American Medical Association, insofar as the same is applicable, shall be the code of ethics of the members hereof.

Article X

Amendments

Section 1. This Constitution may be amended by a two-thirds vote of the active membership, which may be taken by mail ballot after the proposed amendment has been approved by the Advisory Council.

May 17, 1921.

(b) Be it Further Resolved, That the Council be and is hereby authorized to take any necessary steps and proceedings to effectuate such an

organization; and it is hereby authorized to consent to any clarifying changes in said Constitution deemed by it necessary or desirable.

And be it Further Resolved, That the Council be and it is hereby authorized and empowered to act as a part of the said Advisory Council, in said Constitution provided for.

RESOLUTION NO. 2

Authorizing the Council to Effectuate Organizations of Technical Specialties of Medicine.

Resolved, That the Council be, and it is hereby authorized to take any necessary steps and proceedings to effectuate organizations of technical specialties of medicine, in accordance with the general plan heretofore approved by this Society in the matter of physiotherapy.

RESOLUTION NO. 3

Reapportionment.

(a) Resolved, That Article III, Section 3, of the By-Laws, be amended so as to eliminate Section 3 as it now reads, and substitute the following in lieu thereof:

ARTICLE III, SECTION 3

"The House of Delegates shall consist of not more than one hundred members, so made up that every county society shall have at least one delegate: The Board of Councilors to decide before November of each year, what the numerical ratio of delegates to membership of county medical societies shall be, on the basis of a House not to exceed one hundred members as above provided."

(b) Resolved, That Article V, Section 6, of the By-Laws, be amended to read as follows:

ARTICLE V, SECTION 6

"The Council shall divide the State into Councilor districts, according to the number of districts fixed by Article VI, Section 1, of the Constitution, specifying what counties each district shall include."

RESOLUTION NO. 4

Section Arrangements—

Resolved, That the Section organization of the Society be modified so as to provide Sections with such Sub-Sections for each Section as may best meet the needs of modern medicine.

RESOLUTION NO. 5

Increase of Annual State Dues—

Resolved, That the annual State dues shall be fixed at \$8 per annum for the year 1922—an increase of \$1.

RESOLUTION NO. 6

Resolution Calling for a Section in Anesthesiology in the California State Medical Society—

Whereas, The safety of patients, the advancement of surgery, and the requirements of hospital service demand the rapid extension of the Specialty of Anesthesiology; therefore, be it

Resolved, That a new Section, or Sub-Section, be authorized in the Scientific Program of the California State Medical Society, to be known as the Section on Anesthesiology.

RESOLUTION NO. 7

Resolution Calling for a Section in Anesthesiology in the American Medical Association—

Whereas, The safety of patients, the advancement of surgery and the requirements of hospital service demand the rapid extension of the Specialty of Anesthesiology; therefore, be it

Resolved, That the California State Medical Society, in session assembled May, 1921, does hereby petition and urge the House of Delegates and the Council on Scientific Assembly of the American Medical Association, to establish a Section on Anesthesiology during the Boston Meeting, June, 1921, and further, be it

Resolved, That the Delegates from this Society to the American Medical Association be instructed to vote in favor of granting a Section on Anesthesiology in the American Medical Association.

RESOLUTION NO. 8

Signing of Irregular Death Certificates—

Whereas, It is becoming a frequent occurrence that members of this Society sign death certificates in cases that have been under the charge of religious or medical cults, and

Whereas, This procedure encourages the illegal practice of medicine and protects illegal practitioners in such practice; therefore, be it

Resolved, That the membership of this Society be urged and instructed to refuse to sign any death certificate in cases in which he has not been in bona fide and continuous attendance up to the time of death.

RESOLUTION NO. 9

Endorsing the Work Being Done by the American Committee for Devastated France—

In consideration of the great needs existing in the devastated areas of France, subsequent to the Great War, be it

Resolved, By the California State Medical Society, at its annual meeting, that we heartily endorse the work being done by the American Committee for devastated France in endeavoring to provide agricultural implements, medical care, clothing and supplies to the destitute people of France.

RESOLUTION NO. 10

Providing for a Special Committee to Report on Local and State Expenditures for Medical and Sanitary Measures—

Whereas, The expense of living and the cost of all necessities has become more and more burdensome to the people, and

Whereas, Taxation local, state and national is becoming so intolerable as to menace existing institutions; therefore, be it

Resolved, That the medical profession records its desire to lessen this cost as far as it can through disbursements within its control;

Resolved, That for this purpose a special committee be appointed by the President, at his discretion, to inquire into medical and sanitary expenses, both local and state, that reflect themselves in taxation;

Resolved, That the Committee shall report to this Society at its next annual meeting with such recommendations as it may deem proper to make.

ADJOURNMENT

There being no further business, the meeting was adjourned to meet Wednesday evening, May 11.

SECOND SESSION

Wednesday evening, May 11, 1921

ROLL CALL

The roll being called, seventy-four (74) Delegates were found to be present, and the President, John C. Yates, in the chair, declared that a quorum of the House of Delegates was present and that the House was ready for business.

PLACE OF MEETING—1922

The President made the announcement that the Council had selected Yosemite National Park, Yosemite, Cal., as the place of meeting for 1922.

ELECTION OF OFFICERS

President-Elect—H. G. Brainerd of Los Angeles was nominated for President-Elect by Joseph M. King of Los Angeles. The nomination was seconded by C. G. Kenyon of San Francisco. Acting under authority of a positive motion the Secretary cast the ballot, and H. G. Brainerd was declared elected President-Elect of the Society for the year 1921.

First Vice-President—Alfred C. Reed of San Francisco was nominated for First Vice-President by George H. Kress of Los Angeles. The nomination was seconded by C. Van Zwalenburg of Riverside. Acting under authority of a positive motion, the Secretary cast the ballot, and Alfred C. Reed was declared elected First Vice-President of the Society for the ensuing year.

Second Vice-President—Joseph Catten of San Francisco was nominated for Second Vice-President by Dudley Smith of Oakland, said nomination being duly seconded by Frank H. Paterson of San Jose. Acting under authority of a positive motion, the Secretary cast the ballot, and Joseph Catten was declared elected Second Vice-President of the Society for the ensuing year.

Secretary—W. E. Musgrave of San Francisco was nominated for Secretary by René Bine of San Francisco. The nomination was seconded by Frank H. Paterson of San Jose. Acting under authority of a positive motion, the President cast the ballot, and W. E. Musgrave was declared elected Secretary of the Society for the ensuing year.

COUNCILORS

First District—Paul M. Carrington of San Diego was nominated for Councilor for the First District, said nomination being duly seconded. Acting under authority of a positive motion, the Secretary cast the ballot, and Paul M. Carrington was declared elected Councilor for the First District for the ensuing three years.

Third District—T. C. Edwards of Salinas was nominated for Councilor for the Third District, said nomination being duly seconded. Acting under authority of a positive motion, the Secretary cast the ballot, and T. C. Edwards was declared elected Councilor for the Third District (to succeed himself) for the ensuing three years.

Fourth District—Dwight H. Trowbridge of Fresno was nominated for Councilor for the Fourth District, said nomination being duly seconded. Acting under authority of a positive motion, the Secretary cast the ballot, and Dwight H. Trowbridge was declared elected Councilor for the Fourth District for the ensuing three years.

Ninth District—James H. McLeod of Santa Rosa was nominated for Councilor of the Ninth District, said nomination being duly seconded. Acting under authority of a positive motion, the Secretary cast the ballot, and James H. McLeod was declared elected Councilor for the Ninth District for the ensuing three years.

At-Large—Saxton T. Pope of San Francisco was nominated for Councilor-at-Large, said nomination being duly seconded. Acting under authority of a positive motion, the Secretary cast the ballot, and Saxton T. Pope was declared elected Councilor-at-Large for the ensuing three years.

Committee on Scientific Program—Walter V. Brem of Los Angeles was nominated and elected a member of the Committee on Scientific Program.

The Committee on Scientific Program is as follows:

- Lemuel P. Adams, Oakland, 1922
- F. M. Pottenger, Monrovia, 1923
- F. F. Gundrum, Sacramento, 1924
- Walter V. Brem, Los Angeles, 1925
- W. E. Musgrave (as Secretary of the Society), Chairman.

Delegate to the American Medical Association—John H. Graves of San Francisco was nominated and elected Delegate to the American Medical Association for two years.

Delegates to the American Medical Association are as follows:

- H. Bert Ellis, Los Angeles, 1921 and 1922
- Albert Soiland, Los Angeles, 1921 and 1922
- John H. Graves, San Francisco, 1921 and 1922

Alternate to the American Medical Association—E. C. Fleischner of San Francisco was nominated and elected Alternate to the American Medical Association for two years.

Alternates to the American Medical Association are as follows:

- C. Van Zwalenburg, Riverside, 1921 and 1922
- Edw. N. Ewer, Oakland, 1921 and 1922
- E. C. Fleischner, San Francisco, 1921 and 1922

Presentation of the President

John H. Graves of San Francisco, the incoming President, was then escorted to the Chair, and addressed the House of Delegates briefly and informally.

Presentation of the President-Elect

H. G. Brainerd of Los Angeles, President-Elect, was then presented and voiced his appreciation of the honor conferred upon him.

REPORT OF THE GENERAL ATTORNEY

General Counsel, Hartley F. Peart, made a brief verbal report of the status of the work of the Legal Department.

Upon the motion of Joseph M. King, seconded by T. C. Edwards, a unanimous vote of thanks was extended to Mr. Hartley F. Peart and Mr. Hubert T. Morrow for the excellent work which they had done.

REPORT OF THE REFERENCE COMMITTEE

James H. Parkinson, Chairman of the Reference Committee, reported as follows for the Committee:

1. President's Address—

The Committee directs attention to the ex-

ceedingly practical character of the address of the President and to the excellent suggestions contained therein. Among these are:

- (a) Education of Public Opinion on Public Health Problems.
- (b) Qualifications for Membership in the State Society.
- (c) Secretary of County Society to be a Delegate to the State Society.
- (d) Joint Meeting of Secretaries of Local Societies with Secretary of the State Society and Council at Annual Meeting.
- (e) Intensive work of Presidents and Secretaries of Local Societies in the matter of Legal Protection.

The Committee recommends that these questions be referred to the Council for consideration.

(f) Extending time of Meeting or Provision for Two Meetings each year.

The Committee recommends that, commencing with the Meeting, 1923, the time be extended one day, the Meeting to commence on Tuesday and end on Friday. The order of business to remain as at present except that the morning and afternoon sessions of Tuesday be devoted to General Medicine and that of Wednesday to Section work. The day of Thursday, which permits of an evening session, to Section work and the day of Friday to General Medicine.

Further, that the question be referred to the Council to permit of conference with Chairmen and Secretaries of Sections and with the Program Committee.

Upon motion duly made and seconded, it was unanimously

Resolved, That the report of the Committee upon the President's recommendations be accepted and referred to the Council with authority to act.

2. Report of the Chairman of the Council—Assessment for Indemnity Defense Fund.

The Committee recommends that the House of Delegates authorize the Council to levy an assessment on all old members of the Indemnity Defense Fund in the sum of five dollars for the year 1922 and for each year thereafter until otherwise ordered, provided, that the admission fee for new members shall remain at thirty dollars.

Upon motion duly made and seconded, it was unanimously

Resolved, That the recommendation of the Committee regarding the Indemnity Defense Fund be adopted by the House of Delegates.

Report of the Editor—

The Committee, through two of its members, desires that the Society place on record its hearty appreciation of the excellent work and valuable services rendered our membership by Dr. A. C. Reed during his incumbency as editor.

Upon motion duly made and seconded, it was unanimously

Resolved, That the report of the Committee on appreciation of Dr. Reed's services as Editor be adopted.

4. Expert Medical Testimony—

The Committee recommends the adoption of the report and that it be referred to the Council to be made effective.

RESOLUTION NO. 1

5. *Organization of Physiotherapists.*

The Reference Committee recommends that the Society approve the organization of Physiotherapists and the Constitution as submitted, and that the Council be authorized to make the organization effective and to act with the Advisory Council.

Upon motion duly made and seconded, it was unanimously

Resolved, That the Medical Society of the State of California hereby approves the organization of Physiotherapists in a State Association, under the terms and conditions as published in the Resolution, and be it further

Resolved, That the Council be and is hereby authorized to take any necessary steps and proceedings to effectuate such an organization, and it is hereby authorized to consent to any clarifying changes in said Constitution deemed by it necessary or desirable, and be it further

Resolved, That the Council be hereby and it is authorized and empowered to act as a part of the said Advisory Council in said Constitution provided for.

RESOLUTION NO. 2

6. *Authorizing the Council to effectuate organizations of technical specialties of medicine.*

The Reference Committee recommends that the Council be authorized to organize other technical specialties under the same general plan as that already approved for physiotherapists.

Upon motion duly made and seconded, it was unanimously

Resolved, That the Council be and it is hereby authorized to take any necessary steps and proceeding to effectuate such organizations, and be it further

Resolved, That the Council be and it is hereby authorized and empowered to act as a part of the Advisory Councils, provided for in Constitutions of such organizations.

RESOLUTION NO. 3

7. *Reapportionment—*

(a) and (b) The Reference Committee recommends the adoption of the Amendments to Article III, Section 3, and to Article V, Section 6 of the By-Laws.

Upon motion duly made and seconded, it was unanimously

Resolved, That the Resolutions embodying the Amendments be adopted.

RESOLUTION NO. 4

8. *Section Arrangements—*

The Reference Committee recommends the adoption of the resolution submitted by the Council as providing a definite plan for organization without disturbing existing conditions.

After some discussion an amendment to the resolution was introduced and seconded, providing that there should be no sub-sections. While the amendment was under discussion a motion to table was made, seconded and carried. The original resolution was not acted upon.

RESOLUTION NO. 5

9. *Increase of Annual State Dues—*

The Reference Committee recommends that the

annual Assessment for the year 1922 be fixed at \$8 or an increase of \$1.

On motion duly made and seconded, it was unanimously

Resolved, That the annual State dues shall be fixed at \$8 per annum for the year 1922—an increase of \$1.

RESOLUTION NO. 6

10. *Resolution calling for a Section in Anesthesiology in the California State Medical Society—*

The Committee recommends that a Section on Anesthesiology be provided.

On motion duly made and seconded, it was

Resolved, That a Section of Anesthesiology be established.

RESOLUTION NO. 7

11. *Resolution calling for a Section in Anesthesiology in the American Medical Association—*

The Reference Committee recommends that the resolution petitioning the American Medical Association to establish a section on anesthesiology be not adopted.

Upon motion duly made and seconded, it was

Resolved, That the report of the Reference Committee be approved.

RESOLUTION NO. 8

12. *Signing of Irregular Death Certificates—*

The Reference Committee recommends that the society impress upon its members that the signing of irregular death certificates is contrary to law and renders them liable to criminal prosecution, and that the attention of all county societies be directed to this fact.

Upon motion duly made and seconded, it was

Resolved, That the recommendations of the Reference Committee be approved.

RESOLUTION NO. 9

13. *Endorsing the Work Being Done by the American Committee for Devastated France—*

The Reference Committee recommends the Society record its approval of this most worthy movement.

Upon motion made and duly seconded, it was

Resolved, That the report and recommendation of the Reference Committee be adopted.

RESOLUTION NO. 10

14. *Providing for a Special Committee to report on Local and State Expenditures of Medical and Sanitary Measures—*

The Reference Committee recommends the appointment of the Committee.

Upon motion duly made and seconded, it was

Resolved, That the Resolution be adopted and the Report of the Reference Committee be approved.

ADJOURNMENT

There being no further business, the Minutes of the Meeting were read and approved and the sessions were declared adjourned.

REPORT OF THE COMMITTEE ON LOCAL ARRANGEMENTS AT THE CORONADO MEETING

The following report of the Committee of the San Diego County Medical Society, who had charge of the arrangements for the State meeting, is so interesting, and reflects the sentiments of the members of the State Society so accurately, that it is published.

"Firstly, the co-operation of the doctor's wives with the Information Committee and the Fruit and Flowers Committee was unique, and provoked expressions of highest appreciation and gratitude throughout the convention. The work of Mrs. Wegeforth, Mrs. Jennison, Mrs. Little, Mrs. Lewis and Mrs. Kendall, in directing these most efficient and economical arrangements was very gratifying, and the Committee wishes to express, through you to them, our most cordial, personal gratitude for this co-operation.

"Secondly, there has never been any enterprise in the County Society that has had such general and loyal support as the financing of this convention. The Committee wishes to commend Dr. Weinberger's work most highly. It was necessary to raise over \$900 to provide for several contingencies that might have arisen, any one of which would have cost the Committee from \$150 to \$300. Fortunately, there was no such occurrence. The details of the financing of the convention will be included in Dr. Carrington's report.

"Thirdly, through the courtesy of Commander Richardson, the State Medical Society were taken to North Island as guests of the Commandant of the Naval Air Station. This feature was unique, and the Committee of the local society are very greatly indebted to Commander Richardson and Captain Tomb for their interest and courtesy.

"This official recognition by the Government authorities, provision for transportation, and demonstration of all types of naval air craft, as well as the inspection of barracks and shops, was splendidly worked out by Commander Richardson and Committee.

"Special attention should be called to Dr. Lewis' work in eliminating green fees, and securing a trophy from the hotel for the golf tournament. This was unusual, and meant work and provided a very attractive feature at the convention.

"Fourthly, we are also especially grateful to Dr. Fox for assuming the responsibility for the three dances.

"Fifthly, perhaps the most noteworthy feature of the convention was the president's banquet, with its special dinner and flood of floral decorations. We are greatly indebted to the Park Commission and the Coronado city manager for providing the decorations, and to Mrs. Kendall and Mrs. Jennison for securing them, and directing the arrangements.

"This Committee wishes to go on record as stating that it believes that such uniform and loyal co-operation in the County Society speaks for its absolute solidity, and its ability to carry on any project that comes within its scope.

LYELL C. KINNEY,

P. M. CARRINGTON,

PAUL WEGEFARTH,

Local Arrangements Committee."

Original Articles

SOME ASPECTS OF PERNICIOUS ANEMIA AND ITS TREATMENT*

By SAMUEL H. HURWITZ, M. D.,
Assistant Clinical Professor of Medicine, University of
California Medical School, San Francisco.

The treatment of pernicious anemia, generally employed until a few years ago, consisted of a regimen in which rest, special diet, and the administration of arsenic were the principal features. Within recent years, more radical measures have come into prominence, namely transfusion of blood, splenectomy and operations for the elimination of foci of infection. These innova-

tions have stimulated renewed interest in this disease, and inasmuch as the newer therapy is more elaborate and not always without immediate ill-effects, those who would apply it have not infrequently been confronted with the question of its possibilities and its limitations.

In order to view in their proper proportions the various therapeutic measures at our command, we must have a clearer knowledge of how they affect the disease process. The underlying cause or causes of pernicious anemia are as yet enveloped in theory; but without some theories as guiding motives, little progress could be made in the medical sciences. Accordingly, it is worth while, now and then, to take stock of the proposed explanations that are current and to learn what hypotheses have survived the criticism of competent observation or the test of investigation.

NEWER ASPECTS OF THE PATHOGENESIS OF PERNICIOUS ANEMIA

Pernicious anemia has not lacked investigation in recent years; but it still remains even at the present day one of the puzzles of the student of etiology. Regardless of what the primordial cause may be, one fact appears clear, namely that pernicious anemia is associated with increased blood destruction, and that during the remissions of the disease, this hemolysis may approach normal limits or may be counteracted by increased blood formation. This observation leads naturally to the assumption that some hemolytic substance is either the actual cause or the result of the disease. However this may be, there is good evidence that the substance in question is not alone a hemotoxin, but that it produces injury also to the body protoplasm as a whole, a conception which makes of pernicious anemia a disease in which treatment must be directed not only to replacement of the destroyed red blood cells, but also to the restitution of body tissue as well.

A more rational and a more specific therapy in pernicious anemia requires also a better understanding of the origin and the nature of the hemolysin at work. This problem still remains to be solved, but a little knowledge has come from experimentally produced anemias and from the spontaneously occurring disease in animals. And we may confidently expect through these channels much needed evidence as to the tenability of the hypotheses which are becoming more clearly defined from time to time.

In certain of the hemolytic anemias, which at times simulate pernicious anemia closely, the hemolytic poison is known. There is little doubt, for instance, as to the rôle played in dibothrioccephalus anemia by cholesteryl oleate, the cholesterol ester of oleic acid set free by the decomposing segments of this worm; and in the hemolytic anemia of pregnancy, a definite hemolytic agent seems to have its origin in the placenta. Numerous workers have also described hemolytic extracts obtained from the mucosa of the gastro-intestinal tract, spleen, etc., but this evidence is still incomplete, for active blood-dissolving agents have also been obtained from the organs of persons not having suffered from anemia.

Further knowledge of great importance as

* Chairman's Address—Section on Medicine—Read before the Fiftieth Annual Session of the Medical Society of the State of California, Coronado, May, 1921.

regards the etiology of pernicious anemia has come from the work done on an analogous disease in horses. This is a disease of horses, which is not infrequent in some parts of Europe, America, and Japan. The affected animals develop an anemia which has much in common with the pernicious anemia of human beings. Besides the extreme anemia with a high hemoglobin index, there is intense polychromatophilia, leucopenia, relative lymphocytosis and reduction of blood platelets. In its acute form, the disease may terminate fatally in a week or two, with all the manifestations of an acute infection; while the chronic form may proceed for months or even for a year. It has been found possible to transmit this disease to horses and donkeys by the injection of serum from diseased animals, but not to animals of other varieties; and because of the great similarity between the equine and human forms of pernicious anemia attempts have been made to transmit the human form to horses by the injection of the blood and the extracts of the spleen obtained from pernicious anemia patients; but these experiments have yielded negative results (Moffitt).

Whereas the majority of American and European investigators believe that equine pernicious anemia is an infectious disease caused by an ultra-microscopic virus, Seyderhelm has given some proof that a chemical hemolysin may play an important rôle in its causation. This worker made necropsies on eighty-one horses suffering from the disease, and found that in every case the stomach contained the larvæ of several varieties of fly belonging to the *oestridae*. From the bodies of these it was possible to extract a toxic agent of great activity, to which was given the name of "oestrin." The behavior of this toxic substance indicates that it is of a purely chemical nature, for it withstands heating in the auto-clave. Its administration to horses gives rise to an anemia in all respects resembling the spontaneously occurring disease, and the blood of these animals transmits the affection to others. This work, which rejects a living pathogenic micro-organism as a causative factor and introduces the conception of an insect carrier harboring a chemical hemolysin, has naturally aroused much interest and, although more recent observations (Van Es and Schalk; Hadwen) make the findings of Seyderhelm extremely doubtful, the latter's finding serves nevertheless to emphasize the fact that the study of the etiology of equine pernicious anemia and of the human form as well, should be approached both from the standpoint of infection and chemical hemolysis.

Whether the harmful agent be infective or hemolytic, or both, it should be emphasized that it acts not alone as a hemotoxin, but that it produces profound and widespread changes in the protective properties of the blood and in tissue metabolism. It is this feature of the malady which makes so ineffective the usual methods at our disposal of combating the disease. As a result of recent serologic studies we now know, for instance, that, while the resistance of the red blood corpuscles in pernicious anemia is usually increased,

at least to hypotonic salt solutions, the protective power of the serum of these patients against hemolytic agents is diminished. Thus Clark and Evans made tests of the protective power of human serum against the hemolysis of guinea-pig cells by sodium oleate, and found it remarkably constant in normal persons and in those suffering from a wide range of diseases without anemia. In anemias of various kinds and more particularly in hemolytic anemias with involvement of the spleen, the diminution of this protective power of the serum against chemical hemolysins is most marked. In pernicious anemia they found this very striking both in degree and in the regularity with which it is found. Of some clinical interest may be their finding that the protective power of the serum parallels more closely the general condition of the patient than the blood picture.

Of late further knowledge of the chemical processes at work in this disease and of the effects of certain therapeutic measures upon them has been gleaned from the application of more accurate methods of blood analysis and of clinical calorimetry. That the disease is attended by a toxic destruction of body tissue protein has long been known as a result of the work of earlier investigators; but we are only at the present time gaining a little insight into the effect which the disease process has upon general body metabolism and in what manner the energy exchange may be influenced by diet, transfusion, and other remedial agents. The well known calorimetric observations of Meyer and Du Bois have demonstrated in many instances, an increased basal metabolism in pernicious anemia, which may be especially pronounced when the hemoglobin content of the blood falls to 20 per cent of the normal. This observation has led to considerable speculation concerning the manner in which the body requirements of oxygen are met in the presence of a reduction of hemoglobin, a problem whose consideration is beyond the scope of the present paper. Its occurrence, however, would seem to point to some type of stimulation of the body cells in general.

The clinical application of the determinations of basal metabolism in pernicious anemia has been pointed out by Tompkins, Brittingham, and Drinker. They call attention to the fact that a knowledge of the energy exchange in these patients may serve as a guide to treatment, and more particularly as an index of the value of transfusion. Transfusion usually lowers the basal metabolic rate regardless of whether its initial level was normal, above or below normal, a change which they attribute not to a cessation of the compensatory muscular activity of the anemic individual, but rather to progressive tissue alterations which tend to reduce metabolism. It appears likely, therefore, that one of the good effects of transfusion may consist in the lowering of metabolism, and in the diminution of the tissue waste which is so frequently present in this disease.

THE SPLEEN IN PERNICIOUS ANEMIA

The advocacy of splenectomy as a therapeutic procedure on the assumption that the hemolytic cause of the disease resides in the spleen, gives to this subject an especial interest. That the

spleen plays an important rôle in pernicious anemia, and especially in hemolytic icterus, is certain, but that it is the site of production of the causative hemolytic agent is still not proved. In fact, notwithstanding the opportunities of modern times for experimentation, physiologists are even in doubt as to the function of the normal spleen. The work of Pearce and his co-workers has been fruitful, but not entirely conclusive. Nearly all investigators attribute to the spleen a rôle in the destruction of red cells, and some ascribe to it a part in red blood-cell formation; while still others are inclined to the view that this organ is concerned both with the regeneration and the destruction of blood.

Concerning the relation of the spleen to those diseases in which this organ may be enlarged there is still much speculation. Of interest is the fact, that in 1913, when Eppinger, Decastello, and Klemperer and Hirschfeld, working independently, advocated splenectomy for pernicious anemia, the reason assigned by each one in support of this procedure was different. Thus, Eppinger was led to adopt this measure by observing after splenectomy a diminished output of urobilin and other evidences of decreased hemolysis. Decastello, because he had noted improvement following splenectomy in the related conditions hemolytic icterus and Banti's disease, and Klemperer and Hirschfeld on the ground that the removal of the spleen provides a stimulus to the hematopoietic functions of the bone-marrow, the normal functions of the organ being to regulate the production of erythrocytes. The latter conception appears to be well supported by the study of the blood of patients after splenectomy. Evidences of this higher level of bone-marrow activity after splenectomy is shown by the appearance, after its removal of Howell-Jolly bodies, young, reticulated erythrocytes, and normoblasts in the circulating blood—the so-called blood crisis. It may well be, therefore, that the generally favorable results from splenectomy are attributable to the removal of an inhibitor to bone-marrow activity, supposedly present in the diseased spleen. If this conception be correct, it is not surprising to find that the blood crisis and the polychromatophilia, which follow splenectomy for splenic disease, are practically absent after extirpation of the normal spleen.

TESTS OF BONE-MARROW ACTIVITY AS A GUIDE TO TREATMENT

Due to the variations which occur in the natural course of the disease, it becomes extremely difficult to lay down any criteria for judging the value of different therapeutic measures. If the disease began insidiously and marched slowly but unremittingly downward, we could clearly enough demonstrate the value or worthlessness of treatment by the power of our remedial agents to halt, even though temporarily, this steady progress. Unfortunately, this is not the case. Every clinical observer since Biermer has emphasized that the natural course of the disease is marked by long and frequent pauses. Confronted by these facts, clinicians have been forced to judge of the potency of a given mode of treatment either on the basis of a prolongation of life or upon such evidence as

the occurrence after any given treatment of more frequent and longer remissions. Most of us, we must frankly acknowledge, estimate the results of our treatment largely upon clinical impressions. Such impressions nearly always come from the immediate effects of treatment as they unfold themselves during the period of observation. A patient critically ill is apparently snatched from the hands of death, and we may enthusiastically feel that our own treatment was life-saving. Although impressions gained from daily contact with the patient are invaluable, we must all admit that they constitute a very unsatisfactory standard, because they permit of the widest latitude to individual opinion. By far more helpful as an immediate index of the value of any form of therapy, as well as a guide to the ultimate prognosis, is the detailed study of the blood reaction in pernicious anemia—that is, the presence or absence of blood features indicating bone-marrow stimulation or depression. This permits us to predict, whether the patient is about to start upon a period of improvement or whether an advance of the disease is imminent, knowledge which makes possible a more precise and a more logical choice of our remedies.

For this reason much attention has been given during the past decade to methods of testing the relative activity of the blood-destroying and blood-regenerating forces at work in pernicious anemia. Inasmuch as the blood picture at any given period in the disease represents a balance between blood destruction and blood formation, it is possible to obtain valuable information concerning the progress of the disease by determining which of these two factors is in the ascendency. A single blood examination might not be helpful, but to follow the changes in the blood picture from day to day would tell us how the balance between destruction and formation was swinging, and also how much progress to anticipate from any given treatment.

Because of the hemolytic features of pernicious anemia there has been a tendency to emphasize, for the most part, the clinical and laboratory evidences of blood destruction, and to stress too little the evidences of compensatory bone-marrow activity, which from a therapeutic viewpoint is of the greatest importance. Clinical observers know well, for instance, that little is to be expected in the way of a marked remission in patients in whom the bone-marrow is inactive or its function greatly disordered. An accurate idea of the functional efficiency of the marrow should be based upon the behavior, not of any one of the elements there produced, but upon a careful interpretation of all the elements of bone-marrow origin. Thus in spontaneous remissions or in those induced by some therapeutic measure, such as transfusion or splenectomy, satisfactory bone-marrow activity will be shown by an increase over normal of the young red cells (reticulated cells) together with increases over the former low level of the polymorphonuclear leukocytes and of the blood platelets. Inactivity of the marrow, on the other hand, will be indicated by a diminution of the young red cells and by a marked diminution in the polymorphonuclear leukocytes and blood platelets. The

latter elements, in particular, have been found by Minot and others to be valuable indicators of bone-marrow efficiency, since transitory alterations in the number of these are less likely to occur than are changes in the polymorphonuclear leukocytes. By following the formed elements of the blood in this way, we may obtain a more precise index of bone-marrow function and a better criterion of the value of treatment.

THE TREATMENT OF PERNICIOUS ANEMIA

In the absence of more definite knowledge concerning the etiology of pernicious anemia, our best efforts must be confined to combating the symptoms of the disease. Such palliative treatment may rely only upon the time-honored regimen in which rest, diet and arsenic are the essential features, or resort also to the more radical measures of transfusion, splenectomy, and the removal of foci of infection. Notwithstanding that these more radical procedures have been in vogue for more than a decade in the treatment of this affection, we are only now getting more insight into their value and limitations, largely as a result of the painstaking observations of a number of workers in the best clinics of this country. These problems, after all, cannot be settled by the experience of a single observer, or of many observers for a single year, but by the results of many observers over a period of many years. And although it is my purpose to dwell more particularly upon the merits of transfusion, splenectomy and the removal of foci of infection, I wish first to emphasize a few points concerning the simpler therapy at our command.

Conservative Measures: It seems that many patients with pernicious anemia improve by rest alone. In all anemic states, and more particularly in the severe anemias, absolute rest will relieve patients not only of cardiac strain and fatigue, but make possible besides more rapid blood regeneration; and when combined with a suitable diet, symptomatic improvement may follow even in the absence of other remedial measures.

Particular attention should be given to the diet of these patients. It should be plain, generous, nutritious and well balanced. And inasmuch as a toxic destruction of protein is known at times to occur in this disease, forced feeding of protein food may produce a more normal nitrogen balance. That such foods exert also an especially favorable influence on the anemia has recently been emphasized by the experiments of Whipple and his co-workers. They have shown that the curve of hemoglobin regeneration proceeds much more favorably upon a diet of meat protein (beef, liver, etc.) than it does after the ingestion of carbohydrate food (bread, milk, rice, potatoes). The latter, however, as well as the fats, have an important protein-sparing action and help to lessen the excessive protein breakdown which frequently results from the cause of the anemia itself or from the changes it has produced.

It may well be that these dietetic-hygienic measures have been responsible for the improvement noted in many patients whose well-being has been attributed to the use of iron and arsenic. The medical tradition as regards the beneficial effects

of arsenic, although very strongly rooted, seems to be weakening as a result of more careful clinical observations. There are those whose experience justifies the view that arsenic has not the hematopoiesis-exciting and anti-hemolytic properties with which its advocates have endowed it. The chief value of arsenic doubtless resides in the beneficial effects which it has upon the metabolic functions, and for this reason should be given a place in the management of these patients.

Radical Measures: The permanency of the benefit derived from transfusion, splenectomy and the removal of foci of infection is difficult to determine. Whereas the early effects of these remedial agents may be gauged somewhat by the responsiveness of the bone-marrow to stimulation and by the readiness with which a remission is induced and its duration prolonged, it is much more difficult to find out whether these measures possess any more lasting value. Some knowledge concerning this point has been gathered by a comparison of the total duration of the disease in patients treated by the simpler and the more elaborate methods. Comparative clinical reports of this character have come more especially from the medical clinics of the Johns Hopkins Hospital, the Massachusetts General Hospital, the University of Pennsylvania and the Mayo clinic, and it is mainly upon these studies that we must rely for our information.

Transfusion: Our judgment concerning the therapeutic value of transfusion in pernicious anemia has been based almost entirely upon its usefulness as an immediate emergency measure in tiding a patient over a severe relapse or in inaugurating a remission. Anyone who has employed transfusion extensively in this disease can testify to the remarkable symptomatic benefit which at times follows its use; the patients rest more comfortably, eat more and sleep more. And in those who are not in a stage of the disease refractory to any form of treatment, a remission has come on more often when transfusion has been performed. In the Johns Hopkins Hospital series, analyzed by Bloomfield, remissions occurred in 51 per cent of the transfused patients as compared with 28 per cent of spontaneous remissions in those who were not transfused. The duration and character of the remissions, however, were essentially the same whether induced or spontaneous.

The immediate benefit to be derived from one or more transfusions can be foretold to a certain extent by means of the simple tests of bone-marrow function briefly mentioned before. Any direct evidences of marrow activity, such as definite increases in the number of reticulated cells, platelets, and polymorphonuclear leukocytes, or any diminution in the degree of hemolysis, which points to a more favorable balance between the factors of blood formation and destruction, augurs well for this mode of therapy. On the other hand, older patients, those with a chronic, prolonged course and those exhibiting signs of marrow exhaustion and excessive hemolysis, often fail to respond well to transfusion.

A point of practical importance which should

be emphasized in this connection is the fact that patients with chronic anemia may be harmed more than they are helped by such large transfusions (1000 to 1500 cc.) as some advocate. This observation has been made clinically by Minot and demonstrated experimentally by Robertson. The explanation for this appears to be that the bone-marrow has adjusted itself to the small number of circulating erythrocytes, and the injection of a large bulk of blood may produce a serious depression of the already relatively inactive marrow. In such cases, multiple small transfusions would probably be more desirable than a single large one.

Concerning the ultimate effect of transfusion upon the prolongation of life in pernicious anemia, no definite data are available. From the very careful statistical study of Bloomfield, although based upon a small series of cases, it would appear that transfusion brought about no appreciable increase in the duration of the life of these patients. This observer was able to trace seventeen of twenty-six patients who had received transfusions of blood varying in number from one to seventeen. Thirteen of these were dead and four were alive, the symptoms in the latter having been present one, two, two and four years, respectively. Patients treated by the older general methods, however, may also live for a period of four years or longer. Thus Cabot, in an analysis of 647 cases, found 79 patients who lived four years. Transfusion, therefore, cannot be regarded as more curative in the sense that it modifies the duration of the disease than any of the older and simpler modes of treatment.

Splenectomy: Although splenectomy for pernicious anemia has been practiced for almost a decade, and has already been abandoned in some of the best clinics of this country, it is well to emphasize that we possess as yet only meager data concerning the effect of this procedure upon the prolongation of life. Its immediate beneficial effects in selected cases cannot be doubted. In patients with clinically enlarged spleens, icteroid appearance, signs of hemolysis, and evidences of active bone-marrow, the results of splenectomy have been remarkably favorable. Splenectomy in such instances not only reduces the red cell destruction, as may be clinically shown by the various tests, but it also brings about, by some unknown mechanism, an increased activity of the bone-marrow, with a rise of the reticulated red blood cells, platelets, and polymorphonuclear leukocytes. Beneficial results cannot be expected, however, in patients with an aplastic or an exhausted bone-marrow. When one compares, however, the actual results obtained with the possible results if operation had not been undertaken, the argument for the early employment of splenectomy becomes decidedly weaker. Thus, whereas removal of the spleen may cause a quick and marked improvement in from 64 per cent (Krumbhaar) to 70 to 78 per cent (Minot, Giffin) of the cases, natural remissions occurred one time or another in over 80 per cent of the patients of Cabot's series treated by the older conservative methods.

If, then, splenectomy merely induces a remission, and this is at present the opinion of the

majority of observers, it should be logical to undertake it only as a last resort, when all other measures have proved unavailing, and perhaps with the hope of prolonging life. That the duration of life of splenectomized pernicious anemia patients may actually be lengthened has been very recently shown by Giffin in a statistical survey of the patients observed in the Mayo Clinic. In a study of the post-operative life of fifty patients operated upon more than three years ago, Giffin found that ten patients (21.3 per cent) of those who recovered from the operation survived splenectomy three years or longer, and that five patients (10.6 per cent) have survived splenectomy more than five and one-half years and were still living at the time of the report in January, 1921. The total length of the history of these five patients averages about six years, which is clearly longer than the average expectation of life of pernicious anemia patients (four years, Cabot). So that it may be said with reasonable accuracy that, in addition to the immediate remission which occurs with considerable constancy following splenectomy, splenectomy prolongs life in at least 20 per cent of the cases. The hopefulness of this outlook is still further increased by the gradual reduction in the operative mortality from 20 per cent (Krumbhaar, 1917) to 6 per cent (Giffin, 1921).

Elimination of Foci of Infection: The importance of oral sepsis as an etiologic factor in pernicious anemia has long been emphasized by William Hunter. And as a result of the observations of Billings, Rosenau and others in this country, the doctrine of focal infection in its relation to disease production has come especially to the front during recent years. Notwithstanding that rapid improvement has frequently followed the treatment of oral sepsis or the removal of foci in the nose, ear, sinuses, tonsil, appendix, gall-bladder or where not, it is not yet proved that the association of these foci with pernicious anemia is a causal one. One must be cautious in assuming an etiologic relationship between a disease entity, which runs such a typical clinical course as pernicious anemia, and lesions of such frequent occurrence as local foci of infection. That such a viewpoint is justifiable appears from the careful statistical study made by Bloomfield upon fifty-seven pernicious anemia patients treated at the Johns Hopkins Hospital. This clinical observer found in twelve of these patients in whom foci of infection were localized and eliminated wherever found, that the total duration of life and the extent and degree of remissions were in no way different than in a control group of patients in whom foci were not found, or if found were not treated. Unfortunately, the data upon this point obtainable from other sources are not so precise, but are based for the most part upon clinical impressions. For the present, therefore, definite conclusions concerning this subject are not permissible. As part of a general plan of treatment, it goes without saying that the eradication of foci of infection has a very important place, for the existence of such foci contributes to the ill-health of the patient. However, one must not be over-enthusiastic about eliminating local infections with-

out weighing carefully the gravity of their removal against the good to be obtained in a given case. It is in such decisions that the common sense and the best judgment of the physician will be required.

SUMMARY

The nature of the noxa responsible for the blood destruction in pernicious anemia are unknown. The evidence that either a chemical hemolysin or an infectious agent is the cause is inconclusive. Studies of the equine form of pernicious anemia support the view that in horses an ultra-microscopic virus is the cause of the disease.

The causative agent, whatever its nature may be, acts destructively not only upon the red blood corpuscles but also upon other body cells as well. The disease is accompanied by a toxic destruction of tissue protein and by metabolic changes.

The evidence that the spleen is the site of production of the unknown hemolytic substance is not conclusive. There is some foundation for the view, however, that the function of the normal spleen is to regulate the production of erythrocytes and that splenectomy in pernicious anemia and in other diseases associated with a diseased spleen removes from action an inhibitor of bone-marrow activity.

More emphasis should be placed upon tests of bone-marrow function. It is often possible by means of them to gain some knowledge concerning the presence or absence of marrow exhaustion. Such knowledge gives valuable information in prognosis and serves as a guide to treatment. Very little is to be expected from any mode of treatment when the bone-marrow is inactive or depressed.

The essential factors of importance in the general care of a patient with pernicious anemia are diet and rest. The latter in particular should be emphasized. Iron and arsenic are of secondary importance. Transfusion of blood is a valuable emergency measure to tide a patient over a severe relapse. It gives remarkable symptomatic relief, and in patients who are not in a state of the disease refractory to any form of treatment, transfusion helps to bring on a remission. It does not prolong a spontaneous remission, nor does it lengthen the average duration of life of patients suffering from the disease.

Removal of the spleen in pernicious anemia may produce an immediately beneficial effect in selected cases by increasing the activity of the bone-marrow, provided the latter does not show evidences of depressed function or exhaustion. Splenectomy may also prolong life in about one-fifth of the patients.

One must be cautious in assuming an etiologic relationship between a disease like pernicious anemia, which runs such a typical clinical course, and lesions of such frequent occurrence as local foci of infection. A rational plan of treatment should, however, include the judicious eradication of foci of infection wherever found, for their existence contributes to the ill-health of the patient.

References.

- Barker, L. F. and Speunt, T. P.—*J. Am. M. Ass.*, 1917, LXIX, 1919.
- Bloomfield, A. L.—*Bull. Johns Hopkins Hosp.*, 1918, XXXIX, 361.
- Cahot, R.—Osler and McCrae, *Modern Medicine*, 1915, IV, 619.
- Clark, H. M. and Evans, F. A.—*Bull. Johns Hopkins Hosp.*, 1921, XXXII, 113.
- Decastello, A. von—*Deutsch. Med. Wehnschr.*, 1914, XL, 639.
- De Kock, S. V.—D. W. Seventh and Eighth Reports, Director of Veterinary Research, Union of South Africa, 1918, 587.
- Eppinger, H.—*Berl. Klin. Wehnschr.*, 1913, XXIX, 2409.
- Giffin, H. Z.—*J. Am. M. Ass.*, 1917, LXVIII, 429.
- Giffin, H. Z. and Szlapka, T. L.—*J. Am. M. Ass.*, 1921, LXXVI, 290.
- Hadwen, S.—*J. Am. Vet. M. Ass.*, 1919-1920, LVI, 439.
- Hamman, L.—*N. Y. State J. M.*, 1919, XIX, 420.
- Klemperer, G. and Hirschfeld, H.—*Therap. d. Gegenw.*, 1913, LIV, 385.
- Krumbhaar, E. B.—*J. Am. M. Ass.*, 1916, LXVII, 723.
- Meyer, A. L. and Du Bois, E. F.—*Arch. Int. Med.*, 1916, XVII, 965.
- Minot, G. R. and Lee, R. I.—*Boston M. & S. J.*, 1917, CLXXVII, 761.
- Moffitt, H. C.—*Am. J. M. Sc.*, 1914, CXLVIII, 817; *Boston M. & S. J.*, 1914, CLXXI, 289.
- Robertson, O. H.—*Jour. Exper. Med.*, 1917, XXVI, 221.
- Seyderhelm, K. R. and Seyderhelm, R.—*Arch. f. Wissenschaft u. Prakt. Tierh.*, 1914-15, XLI, 50.
- Seyderhelm, R.—*Arch. f. Exper. Pathol. u. Pharmacol.*, 1917-1918, LXXXII, 253.
- Tompkins, E. H., Brittingham, H. H. and Drinker, C. K.—*Arch. Int. Med.*, 1919, XXIII, 441.
- Van Es, L., and Schalk, A. F.—*Ann. de l'Inst. Pasteur, Par.*, 1918, XXXII, 316.
- Vogel, K. M.—*J. Am. M. Ass.*, 1916, LXVI, 1012.
- Whipple, G. H., Hooper, C. W. and Robscheit, F. S.—*Am. J. Physiol.*, 1920, LIII, 151, 167, 206, 236, 263.

PERIPHERAL NERVE SURGERY

By CHARLES L. TRANTER, M. D.,
San Francisco.

(Continued from Page 245, June Issue 1921.)

The Surgical Procedure.

(1) *The Time of Operation.* I think it will be conceded by all that the sooner a severed nerve is sutured, the better the result will be. In badly infected cases it was the usual Army procedure to wait three months after the healing of the wound before operation was undertaken in order to lessen the liability of infection. Infection not infrequently followed operation even after three months. This period can be materially cut down in our industrial cases, for the severity of the infection is uniformly much less than it was in the War cases. If there is no reaction to massage of the wound two or three weeks after its healing, it is usually safe to operate.

(2) *The Incision.* Many of our cases have large and deep disfiguring scars which can be removed entirely by an elliptical incision. The patients appreciate the removal of these disfiguring scars, and a point of considerable importance with industrial cases is that unless they are removed they are frequently exhibited as indications of disability. The formication test is of value in indicating the location of the end of the proximal segment under a long scar.

The incision should usually be a long one, both to allow for identification of the nerves above and below the lesion, and to permit of their mobilization.

(3) *Mobilization of Proximal and Distal Segments.* If the lesion is an incomplete one, or if there is not much separation of the nerve ends, it will be unnecessary to mobilize the nerves for a considerable distance. To immediately separate the nerves for many centimeters below and above when the nerve ends are not separated is a mistake, for in so doing many small blood vessels are ruptured. However, if the defect is great, there is no choice and then there must be free mobilization for a considerable distance, often for

the whole extent of the upper or lower segment of the extremity.

Preliminary to this mobilization, all of the deep scar tissue should be removed and attention paid to hemostasis. Flexion of neighboring joints frequently helps in the dissection. When muscular branches are found which hinder free mobilization of the nerve, these branches can be dissected for a considerable distance up the nerve trunk if a sharp scalpel and care are used. Likewise the motor nerve may be loosened for a variable distance in the muscle belly. When this dissection of motor branches of the nerve trunk is carried out with care it is possible to avoid even a temporary paralysis of the muscles supplied by the motor branches. Both the proximal and distal nerve ends should be sufficiently mobilized so that the lesion may be completely excised and a good end-to-end suture done.

(4) *The Choice Between Neurolysis and Resection and Suture.* As time went on in the Army hospitals, it was felt that many of the cases which had been treated by neurolysis would have recovered a greater degree of function had resection and suture been employed.

The musculospiral nerve has an excellent prognosis, and I believe that resection and suture is to be preferred to neurolysis in all doubtful cases.

With the ulnar and median we must be more conservative. The formication test as above mentioned, is often of great value in the decision between the two operative procedures. In industrial practice one meets with many cases in which the diagnosis of complete physiological interruption is made and where the lesion is found to be a nerve surrounded by scar tissue or callus. A neurolysis usually suffices in such cases.

A neuroma in continuity which is firm and hard on palpation had better be excised, particularly if there is an absence of formication below it.

Partial lesions of the nerve are not rare, and in such cases a neuroma may be dissected from a portion of the nerve, and suture done. It is then necessary to separate by careful dissection for a centimeter or two above and below the nerve fibres which are intact, and when the suture is completed the intact fibres are left as a loop to one side. It is sometimes possible to resect a neuroma from the center of the nerve, leaving a loop on either side. It is no mistake to thus salvage as few as a fifth of the fibres of an important nerve.

(5) *The Suture.* In the majority of cases by means of mobilization of the nerve, by flexion of joints, together with the most favorable position of the limb, a sufficient gain can be made to permit resection of the neuromata and end-to-end approximation without tension. The avoidance of tension is an extremely important thing, and there is no doubt that many failures are due to the fact that nerves were sutured under too great tension. It is of advantage to place a marker of black silk in the sheath of either end of the nerve before the nerves have been dissected out of their beds in order to prevent axial rotation.

It has recently been demonstrated that the nerve

fibres destined for particular muscle groups occupy definite and constant positions within the nerve trunk, and that their function will be lost if the nerve is so rotated that motor fibres penetrate sensory sheaths. Occasionally, it is possible to match up small blood vessels in the sheath of the nerve, and thus prevent axial rotation.

It has been thought that the better prognosis in the musculospiral nerve is due to the fact that this nerve is predominately motor in character, and that there is less chance of motor fibres being functionally lost by penetrating sensory axones, and vice versa.

It is unnecessary to state that the nerves should be gently handled; small forceps which will grasp the sheath alone should be used. In preparing the nerve ends for suture, serial sections should be made at right angles through the neuroma, and these should be continued at intervals of two or three millimeters until good nerve bundles are reached. Too much care cannot be used in making these sections absolutely at right angles to the long axis of the nerve. To accomplish this the nerve should lie almost flat and not be brought at an angle to the limb. A very sharp scalpel used for no other purpose should be employed; a Gillette razor blade held in a suitable clamp has been found exceedingly convenient. A small wooden block cut from a piece of cigar-box wood can be held underneath the nerve when sectioning it.

The appearance of the neuroma when sectioned is dull white, fibrous and avascular, without the appearance of nerve bundles. As the sectioning is continued centrally, a few nerve bundles are seen at first; a few millimeters further the maximum number of nerve bundles or funiculi are seen to stand out prominently. The sectioning should be continued until there is no further scar tissue found and until the maximum number of funiculi present themselves. There is usually a little bleeding from the central vessels, but this, as a rule, stops itself, though it may be facilitated by the gentle application of pledgets of cotton dipped in warm Ringer's solution.

The peripheral end of the nerve should be treated in the same manner. If some months have elapsed since injury, the peripheral segment and its funiculi will be found to be smaller than the central end.

Fine silk is to be preferred as suture material; linen has been used extensively in England, but the use of catgut has been practically given up. A small round needle should be used, and the sutures should be introduced into the sheath some two or three millimeters from the end of the nerve in a longitudinal direction. It is better to take a good bite than to include too little, and if care is used the end of the needle will find its way through the connective tissue between the funiculi without transfixing them. Simple sutures are preferred, and six or eight sutures in the median or ulnar at the level of the elbow are none too many. It is preferable to introduce all of the sutures before any are tied, and to be sure that they are introduced at corresponding points. They should be tied so that the nerve ends just come together. If they are tied too tightly the

funiculi will be bent at an angle and regeneration will be made more difficult. No attempt should be made to have the nerve sheath longer than the funiculi or to put sutures in the connective tissue between the funiculi in the attempt to get better approximation of the nerve ends as has been advocated by some.

A single catgut suture placed through either end of the nerve about 5 mm. from the end has been advised in order to get an approximation of the centers of the ends of a large nerve. This may be of some value where there has been bleeding of the central vessels and where a clot might form. The speaker, however, feels that such a procedure is very rarely indicated.

Much has been written about the investment of a sutured nerve with flaps of fat or fascia, or about the use of foreign material such as Cargile membrane to afford protection. These are all bad and tend to defeat their purpose, for they induce scar tissue formation. The best protection a sutured nerve can have is a bed in uninjured muscular tissue which has been rendered dry from bleeding.

(6) *Methods of Obtaining Apposition of Nerves With Large Defects.* When free mobilization of both proximal and distal ends of the nerve and flexion of neighboring joints are insufficient to permit of good end-to-end suture, there are two methods which are applicable. First is the transposition of nerves so that they occupy a shorter course in the limb, and second, the two-stage operation by which a gradual lengthening of the nerve is accomplished.

The transposition of the nerve to a shorter course is applicable to the ulnar and musculospiral nerves. Transposing the ulnar nerve from behind the internal condyle so that it occupies a position anterior to it, permits of a considerable gain. A gap of 10 cm. can thus be closed by free mobilization of the nerve, by transposing it to the anterior surface, and by completely flexing the elbow and wrist with the arm adducted to the body. The incision should be a long one and should extend high enough to free the nerve at the point where it pierces the internal intermuscular septum about three inches above the condyle. The motor branches to the flexor carpi ulnaris and anterior heads of the flexor digitorum profundus should be dissected up the nerve sheath so that they will not have to be sacrificed. The ulnar nerve can be left beneath the subcutaneous tissue after transposition of it can be put under the deep fascia and the superficial flexors.

With lesions of the musculospiral posterior to the humerus, the nerve can be transposed so that it lies anterior to the humerus beneath the biceps muscle. Two incisions are necessary, the lower one on the outer side, and the upper one over the brachial sheath on the inner surface. To accomplish this it is necessary to sacrifice the branches to the outer head of the triceps, while the other branches to the triceps and the branch to the supinator longus may be dissected up the nerve trunk if necessary. When the musculospiral is so transposed and the arm is completely flexed at the wrist

and elbow and adducted to the body, a defect of 10 cm. can be overcome.

(7) *The Two-Stage Operation.* When transposition of the nerves and flexion of the joints will not permit of good approximation, we are able to accomplish a preliminary stretching of the nerves, after which good end-to-end suture can be done. This is accomplished by overlapping the scarred ends of the nerves and suturing them with silk. The limb is then put up in flexion and gradual extension of the limb is accomplished within six or eight weeks. At the second operation a slight diminution in the size of the nerves is usually noticed, but yet the blood supply is good, and satisfactory regeneration occurs.

(8) *The Use of Grafts.* The use of grafts is uniformly disappointing, though occasionally we see a satisfactory case of regeneration following their employment. The satisfactory results following the experimental grafting in animals has not been borne out with grafting in humans. No single case of nerve grafting was found necessary at the Army Neurological Center on Staten Island during eight months, though during this time several unsuccessful grafts were removed and sufficient lengthening of the nerve was found to permit end-to-end suture. There are certain cases, however, where firm ankylosis of joints would prevent their flexion and where nerve grafts using sensory nerves from the same individual, can be used.

(9) *The Post-Operative Treatment.* This, the speaker believes, is quite as essential as the operative treatment. Fortunately, we now have in many hospitals physiotherapy aides—women who were thoroughly trained in our Army hospitals, and who can give the necessary physiotherapy. Re-education of paralyzed muscles to bring back finer movements, is quite essential.

Summary.

The determination that the logical end-to-end suture is practically always possible when free mobilization of nerves, flexion of joints, transposition to shorter courses, and the two-stage gradual lengthening operation are employed has accounted for a great advance in the surgery of the peripheral nerves, and means that many of the patients who formerly would have been doomed to a permanent paralysis, can now be restored to usefulness.

The clarifying of our ideas concerning diagnosis with the addition of certain new signs, have been of almost equal value.

209 Post Street.

AMOEBIAC ABSCESS OF LIVER WITH PULMONARY SEQUELAE.*

By REXWALD BROWN, M. D.,[‡] Santa Barbara, Calif.

It can hardly be refuted that an abscess of the liver can break directly through the diaphragm and invade the lung. Yet certain observers believe the formation of an abscess in the lung secondary to an abscess in the liver is not always

*Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

[‡]From the Santa Barbara Clinic.

the result of direct extension, but is rather due to the deposition of micro-organisms from the blood stream, metastatic from the liver to the lung. A few research workers have demonstrated that the lungs catch and retain bacteria as readily as other organs, or perhaps more so. A recent case of amœbic abscess in my care is presented as an exhibit in support to the latter viewpoint.

Omitting the non-essential details of the review of the case, the history is as follows: Mr. H. I. was referred to me by Dr. L. E. Heiges of Lompoc in November, 1920. Mr. H. I. had never been out of California, and for two years previous to the onset of his disease not out of the vicinity of Lompoc, in Santa Barbara County. It is well to note at this point that amœbic dysentery has a foothold in California. Cort and McDonald write convincingly in the December, 1919, issue of the *Journal of Infectious Diseases* of its danger to California citizens. The disease is brought into the State by carriers, immigrants from Japan, China, India and Mexico, where intestinal protozoa are common.

Fourteen months ago H. I. had a severe attack of dysentery, which, with remissions, has been continuous to the present time. Three months ago, following a choking attack, he coughed up a large quantity of pus. Progressive exhaustion and toxemia ensued and patient entered the Cottage Hospital in poor condition. Physical examination of the chest and abdomen, supplemented by X-Ray findings, revealed what was considered an abscess of the right lung continuous with an abscess of the liver. Dullness reached from the fourth rib above to two finger breadths below the costal margin, where lower margin of liver was plainly felt. Examination of the stool showed bodies suspicious of but not proved as amœbæ.

A very large abscess, involving both liver and lung, being thought present, it seemed wise to attack it in such way that gravity drainage would be in force. Hence the abdomen was opened. Though the liver was markedly enlarged, no hint of abscess was revealed on the antero-inferior surfaces. As the hand swept over the dome of the liver adhesions were encountered. It then being thought the floor of the abscess was in the superior aspect of the liver, a transpleural approach was made by resection of the ninth rib. The liver was needled in several directions without aspirating pus. Following these discouragements, a needle was inserted below the angle of the right scapula and the aspirating needle filled with pus. The rib in that section was resected and a large tube was placed in an abscess of great size. The patient died nine days later.

The autopsy was performed by Dr. L. W. Rothschild, pathologist of the Cottage Hospital. His report follows:

Body is that of a young white man. There is marked pallor and emaciation, with bilateral edema of the extremities.

There is a closed right rectus incision about eight cm. in length. On the right side, just above the diaphragm, a large rubber drain has been inserted into the pleural cavity. External examination otherwise negative.

On section the thoracic and abdominal organs are in normal situation. Both lungs are bound down throughout by dense fibrous adhesions from the apex to the base. These are most marked in the right side, where pleural adhesions bind the lung to the costal surface laterally, to the diaphragm beneath and the pericardial sac. When these are stripped it is found that there is no empyema, the pleural cavity in the right being free from exudate. The visible surface of the liver, while pale, shows nothing remarkable.

On lifting up the diaphragm, however, it is found that there is a cup-shaped depression 9x5 cm. in the topmost portion of the right lobe of the liver immediately below the diaphragm. The cavity, with crater edges, presents a shaggy, trabeculated lining, which has the typical appearance of an abscess cavity. The diaphragm above has also a shaggy exudate 2 mm. deep coating its inner surface and is adherent to the edges of the liver abscess. No gross rupture is found in the diaphragm leading upwards. There is a small amount of pus in the abscess, but most of it seems to have been drained.

On examination of the right lung it is found, on stripping the pleura from the pericardium, that the lung tissue in the lower three-quarters of the right lower lobe has been destroyed and that immediately beneath the pleura lies a large pulmonary cavity. This has a diameter 12x8 inches in its greatest dimensions and represents the destruction of about three-quarters of the lower right lobe of the lung. It is lined with a shaggy, trabeculated lining membrane, in which are exposed large blood vessels. The diaphragm beneath is firmly adherent to the lung above and the liver below. Pleura and diaphragm are firmly bound together and form lower wall of the abscess cavity, which seems definitely closed off, and presenting no visible opening between the liver abscess below and the lung.

A second smaller abscess cavity is found in the left lower tube, measuring 7x4 inches in its greatest dimensions. Not having been drained, the abscess shows a semi-liquid necrotic center, which is everywhere surrounded by consolidated lung tissue. This represents an earlier stage abscess, presumably resulting from aspiration of the material in the abscess in the right side.

The kidneys present a slight distortion of the cortical texture, with a granular appearance and evident increase in connective tissue. The pelves of both kidneys were somewhat enlarged. The spleen was enlarged, weighing approximately 300 gms. It presented no gross lesions.

The other viscera presented no gross changes.

Microscopically. Section from the lining wall of the liver abscess shows an inner zone of cell detritus in which many leucocytes are found. This has undergone extensive necrosis. Leading back from this is an area of granulating tissue, an active process in which the fibroblasts are accompanied by innumerable new capillaries and wandering cells. Here it is that the amœbæ are found. They are present in large numbers as palely straining bodies about thirty microns in diameter, showing varying number of nuclei from

one to six, lying scattered in the tissue, showing no surrounding reaction other than the diffuse wandering cell infiltration throughout. Over one hundred can be counted in a low-power microscopic field.

Section from the lung shows the alveoli in the tissue under the abscess are filled with epithelial detritus, leucocytes and endothelial phagocytes. The preliminary epithelium is stripped from the walls, which are undergoing necrosis, and the varying stages can be traced from early purely cellular exudate in the alveoli to extension of the process to the interalveolar membranes, necrosis of the same, with obliteration of the septa and fusion of the exudate in the alveoli to form abscess area. Amœbæ can be demonstrated in the cellular exudate in alveoli, which are necrotic and fusing to form abscesses.

The case in retrospect, therefore, presents three interesting features. One, the most important, is the absence of an opening through the diaphragm connecting the liver and lung abscesses. The distribution of the amœba from liver to lung must then have been through the circulation, unless perhaps there was an opening at one time which closed over. The autopsy, however, does not justify such a conclusion. Two, the discovery of an abscess in the left lung, which was overlooked in the diagnosis. This finding could have been made by a more careful study of the X-Ray pictures, as was determined later. A bilateral amœbic lung abscess is of sufficient importance because of its rarity to warrant its being reported. Three, operative approach in suspected abscess of the liver is not standardized and depends largely on the operator's interpretation of findings.

URETERAL DIVERTICULA.*

By NATHAN G. HALE, M. D., and CHAS. E. VON GELDERN, M. D., Sacramento.

The rarity of this interesting anomaly is well known and in consequence practically nothing is found in the literature concerning it.

Dr. Alberto Pepere, in 1808, described a unique case of multiple diverticula found at autopsy. There were four diverticula of the right ureter and three of the left ureter, varying from three to five cm. in length. The ureters were greatly dilated and shortened, and the kidneys transformed into large sacs.

In this resumé he states that some diverticula extended from the ureter like pendant bags, others had developed from the wall of the ureter or from the wall of the pendant diverticula, and were in communication with the ureter. The diverticula proved to be an obstacle to the urinary outflow, and had led to a slow but progressive hydronephrotic atrophy of both kidneys, and death from uremia. The diverticula were constructed anatomically like the ureters, and showed alterations caused by back pressure.

In 1895 Lindermann succeeded, after partially ligating the ureters close to the bladder in young rabbits, in producing ureteral diverticula. His

experiments were successful in three out of four animals operated on on the same day and killed on eighth, twenty-third, forty-third and sixty-second day after, and he noted a horn-shaped appendage, which communicated with the ureter by a narrow lumen. One of the diverticula contained forty cc. of urine, with considerable albumen.

On microscopical section of these diverticula the same coats as found in the ureter were seen, but the muscular coat was thinner, while the external connective tissue layer was thicker than those found in the ureter.

Lindermann believes that these diverticula are produced by the raising of the intrarenal pressure, aided by the contractions of the ureter, especially in the distal portion. The loss of elasticity and resistance of the connective tissue, due to the operative procedure, play an important part. The production of these diverticula, with the accompanying dilatation of ureters, is compensatory and they play an important role in the relief of back pressure on the kidney.

Lindermann did not succeed in producing diverticula on other laboratory animals, such as the dog and older rabbits, and he ascribes this failure to the greater resistance of the connective tissue layer.

In 1900 Lipman Wolf presented a specimen secured at post-mortem from a patient whom he had had under observation for two years, and on whom he had made a diagnosis of ureteral diverticulum, with the aid of the cystoscope. The patient had had a right nephrectomy performed fifteen years before and a left nephropexy five years later. The diverticulum produced no symptoms, and death was due to cardiac disease. He believed that the diverticulum in this case was of an acquired type, due to increased work of the left kidney after the removal of the right one, and that it was, like the dilated ureter, a compensatory change.

In his brief discussion Wolf states that ureteral diverticula are, as a rule, congenital, and are situated to the medial side of the ureteral orifice. When of considerable size they produce symptoms and present a puzzling picture, so that they may be mistaken for bladder tumors or cysts.

Erich Wossidlo in 1920 reports a case of ureteral diverticulum which was a rare form of ureterocele, diagnosed by cystoscopic examination of the bladder.

The following case report of a true ureteral diverticulum is herewith presented:

History: An American farmer, 27 years of age, was referred by Dr. James H. Parkinson. The family history is essentially negative. For the last seven years the patient has had pain, variable in character, non-radiating, and located in the lower left quadrant; accompanied by vomiting, frequency of urination and dysuria.

The patient had pertussis at 4, measles at 10, with no complications.

He has had two operations, an appendectomy five years ago and a tonsillectomy six months ago.

Gonorrhœa was contracted when 25 years of age, complicated by a left epididymitis.

His general health has been good, with the exception of his present trouble. About seven years

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, Mex., 1921.

ago he first noticed pain in the lower left quadrant, situated about one inch from the anterior superior spine, associated at times with nausea and vomiting.

He has, since the onset, had six similar attacks of varying intensity. Two of these have occurred within the last six months, and were preceded by constipation or irregular bowel movements. In the more severe attacks there is nausea and vomiting, the pain is sharp and colicky, there is burning and frequent micturation and prostration occurs so that the patient usually remains in bed for two weeks. At no time has he noticed hematuria, or has the pain radiated to the external genitalia, or to the lumbar region. He states that the attacks have been progressive in their severity, the last being the worst.

Physical Findings: The patient is of slight stature, and under weight, the muscles are well developed, the skin firm and of good color, the mucous membranes are moist and normal in appearance.

The palpable lymph nodes present no abnormalities. The muscles are firm. The bones are normal. The joints are freely movable.

The radial pulse is regular, there is no hypertension. No varicosities of the veins or pulsations of the arteries noted.

The respiratory movements are thoracic, regular and equal on both sides.

The head is symmetric, the facies somewhat anxious. The pupils are of equal size, reacting to light and accommodation. The gums are firm; there are no sordes. The teeth have no apparent cavities. The hearing is good.

The chest is symmetrical, the respiratory movements equal. The lungs present no abnormalities or fremitus on percussion or auscultation. The apex of the heart lies within the fifth interspace within the nipple line. No abnormally, accentuated sounds or murmurs heard.

The abdomen is of regular contour. There is an old operation scar in the right lower quadrant. The liver and spleen are not apparently enlarged nor palpable. No masses felt. There is no rigidity of the abdominal muscles. However, on deep palpation, over the left lower quadrant, there is slight tenderness.

The knee jerks are active and equal. There is no disturbance in the distribution of sensation. Neither kidney is palpable.

The inguinal rings admit the tip of the index finger; slight impulse felt on coughing; no hernia present.

The penis is normal; no discharge at meatus. No scars on glands or induration of the shaft. The scrotum is normal; the cremasteric reflex is hyperactive.

The testicles are normal in size, shape, and resiliency.

The right epididymis is slightly enlarged at its lower pole, and indurated throughout its entire extent.

There are no hemorrhoids or fissures. The anal sphincter is of good tone.

The prostate is small, the median furrow and groove are palpable. Posterior left lobe is of

regular contour, indurated in the upper external portion, and having a rather precipitous lateral border. No lateral adhesions.

The seminal vesicles are palpable, extending upward and outward, not particularly indurated, nor are they distended. The intravesicular plateau presents no abnormalities. The massaged secretion contained 10 per cent pus, 50 per cent lecithin, no amyloid bodies, many motile spermatozoa. The stained specimen showed no organisms.

Cystoscopic Examination: The cystoscope was introduced, meeting no urethral obstructions. There is no residual urine, bladder capacity 300 cc. The prostatic orifice presents no irregularities of outline. The trigon and mucous membrane of the bladder wall show no abnormalities. No stones or tumor masses seen.

The ureteral orifices are slit-like, located at the usual site and not injected or otherwise abnormal. Both are seen to contract and emit a clear urine. Number 6 F. bismuth impregnated catheters were inserted, the right ureteral catheter meeting no obstruction. The left ureteral catheter, however, was definitely obstructed about 10 cm. from the ureteral orifice.

X-ray Examination: The right kidney region was not outlined, due to gas in the ascending colon.

The lower pole of the left kidney is opposite the upper border of the third lumbar vertebra, and 6 cm. from the midline. The greatest diameter of the kidney measuring 6 cm. is opposite the transverse process of the first lumbar vertebra. The upper pole cannot be made out. There are no irregularities of the kidney outline, nor are there areas of greater density in this kidney region.

The right ureteral catheter follows the usual ureteral course about one cm. external to the bodies of the vertebra, ending opposite the upper portion of the third lumbar vertebra. There were no areas of greater density along the course of the catheters.

The left ureteral catheter ends opposite the promontory of the sacrum, its tip $1\frac{1}{2}$ cm. to the left of the midline.

A 15 per cent thorium nitrate solution was injected with the gravity method, the patient being in a modified Trendelenburg position. A few cc. inserted caused the patient pain similar to that associated with his attacks. One exposure was made, the plate examined hurriedly, and it was noted that the kidney pelvis was not outlined, therefore, another attempt to introduce the thorium was undertaken. Before the second exposure, 8 cc. of the solution was used before discomfort was noted in the kidney region.

Examining the first film, an ovoid shadow $4 \times \frac{1}{4}$ cm. is seen lying diagonally over the first sacral vertebra, its long axis runs upwards and inward, the upper extremity lying one cm. from the midline. The tip of the catheter lies within this oval shadow.

The second X-ray examination shows a well-distended kidney pelvis, of three major calyces and six minor calyces distinct in outline. The distance between the upper and lower calyces is

6 cm. The upper is opposite the upper border and 2 cm. external to the first lumbar vertebra. The lower calix is opposite the lower border of the transverse process of the second lumbar vertebra. The calyces are joined to a tube-shaped kidney pelvis, 1 cm. in width, which becomes ureter without diminution in diameter.

The ureterogram is distinctly outlined, 1 cm. in width, curving internally to the lateral margin of the body of the second lumbar vertebra, from there the course pursued is 3 cm. to the right of the midline over third and fourth vertebrae, with but slight diminution in size. In the region of the fifth lumbar vertebra, the ureter cannot be definitely outlined, however, the pointing of the ureteral catheter would suggest a gentle curving to the spine of the fifth lumbar.

The ureter ureterogram follows a somewhat semi-circular course, commencing at a point about the middle and 2 cm. to the left of the body of the second lumbar vertebra, thence running to the right and downward to a point between the third and fourth lumbar vertebrae, where it lies $2\frac{1}{2}$ cm. from the right of the spine of the third vertebra. From here its course is indistinct, but from the direction the catheter assumes, it may be supposed that it runs downward and to the left, crossing the spine of the fifth lumbar vertebra.

Laboratory Findings: The bladder specimen of urine examined was cloudy. Specific gravity 1015, slight trace of albumin, no casts, no sugar, few pus cells and colon-like bacilli.

The right ureteral specimen, centrifuged, contained no pus or infection. The left ureteral specimen had a small amount of pus, and a few colon-like bacilli.

The total phtalein was 55 per cent the first collection, and 15 per cent, the last.

The phtalein from the right kidney with the ureteral catheter in place appeared in 2 minutes, 25 per cent in 10 cc. of urine. From the left kidney, the phtalein appeared in 4 minutes, and 18 per cent was estimated in 7 cc. of urine. There was a leakage of 8 cc. into the bladder that contained phtalein, making a total of 50 per cent in one-half hour with the ureteral catheters in place.

The blood Wassermann was negative.

Diagnosis: The clinical diagnosis was made of an abnormally dilated ureter, probably congenital, and that the attacks of pain were due to kinking of the ureter, the cause of which was not definitely known, but leading one to suspect retroperitoneal pressure or constriction about 10 cm. from the uretero-vesical orifice, this constriction being intermittent in character, since there was no impairment of kidney function, and the pyelogram showed no blunting of the minor calyces.

Surgical Treatment and Findings: At operation, Dr. A. C. Hart made a left rectus incision, exploring the organs of the abdominal cavity and finding no abnormalities. The left kidney was palpated. On tracing the ureter upward, he found at about 10 cm. from the bladder an appendiceal-like projection that was attached to the ureter. The entire length of the anomaly was

approximated by loose adhesions to the ureter. This anomaly lay to the medial side, and approximately parallel to the ureter. It was more or less fusiform in shape, about 5 cm. in length, and joined to the ureter at its constricted lower extremity. The anomaly was ligated and removed.

Pathological Examination: The diverticulum was fixed in 95 per cent alcohol, and paraffine sections made, which were stained with hematoxylin and eosin.

The transverse section measures 3 mm. in diameter. The lumen is irregular in shape because of the collapse of the specimen when fixed. The following layers were noted, namely, a fairly thick adventitia, a fairly thick circular, smooth muscle layer, a broken-up layer of longitudinal muscle fibers, a thick layer of areolar fibrous tissue, and the epithelium.

The circular, smooth muscle layer is continuous, and many bundles of obliquely arranged muscle fibres are noted.

The longitudinal fibres hardly constitute a true layer, for they are arranged in bundles varying greatly in size and imbedded in areolar tissue with considerable space between the bundles.

The areolar tissue, lying between the muscle layer and the epithelium, is made up of connective tissue bundles, running in all directions. In certain areas there is a round cell infiltration, especially surrounding the blood vessels.

At the junction with the epithelium, a definite basement membrane is noted, and beneath this are seen many large, clear cells which appear vacuolated.

The epithelium, unfortunately, has been destroyed to a great extent, and only in parts, as in the protected crypts of the lumen, can it be studied. It is of the unrogenital type.

Animal Experimentation: Lindermann's success in producing diverticula in very young rabbits by partially ligating the ureter and his inability to produce the same in older rabbits, led us to undertake a series of similar experiments on three young and three older rabbits. We were unable to produce diverticula. However, a specimen from one of the young rabbits showed bud-like projections from the ureter.

Discussion—In the discussion of this case, the attacks of pain, the appearance of the kidney pelvis, and the probable cause of the diverticulum present themselves.

The attacks of pain were due, no doubt, to the diverticulum (which was closely approximated to the ureter by adhesions) becoming acutely inflamed. The acute inflammation of this appendiceal-like projection from the ureter would cause enough increased pressure on the ureter to give the urinary symptoms and the localized point of tenderness.

This hypothesis is strengthened by reports from the patient at intervals of three months for the last nine months, in which he remains free from all discomfort.

The kidney pelvis has the appearance of being congenital, or in fact being absent, and its place assumed by a uniformly dilated, bowed ureter.

As stated in the introduction, the occurrence of ureteral diverticula is extremely rare, consequently conclusions as to their etiology is correspondingly difficult. Nothing more will be

attempted in this paper than the determination of the probable origin of the diverticulum in this case.

Three possibilities present themselves, firstly, is this diverticulum a secondary budding of the metanephric anlage; secondly, is it a compensatory structure following a congenital stenosis of the ureter, and thirdly, is it an acquired structure occurring later in life, following an acquired ureteral stricture.

It may not be amiss at this time to give a short description of the development of the kidney and ureter.

The anlage of the kidney and ureter, first makes its appearance in the fourth week of embryonal life as a hollow evagination on the dorsal aspect of the mesonephric duct near its junction with the cloaca. This stalk-like evagination becomes dilated at its extremity and grows dorsad into the mesenchyme and thence cephalad along the vertebral column. The dilated extremity forms the renal pelvis and the collecting tubules and the stalk forms the ureter.

The proximal portion of the primitive ureter empties into the mesonephric duct at an acute angle. During the later development with the division of the cloaca by the uro-rectal fold, into uro-genital sinus and rectum, the mesonephric duct and ureter assume independent openings with the latter at a higher level.

It becomes evident that if, at the time of the development of the ureter, a secondary budding should occur, it would undoubtedly be absorbed by the bladder and either disappear or assume a separate opening into the latter. If, however, a secondary budding should occur after the formation of the ureter and kidney pelvis and after these structures had assumed their approximate anatomical positions in the body, such a budding might in later life, assume the appearance of the diverticulum as represented in this case. Such a diverticulum may be likened to an abortive attempt at the formation of a second ureter. This supposition is rendered improbable by the finding of a stenosis of the ureter just below the opening of the diverticulum and the presence of two distinct abnormalities in such close relation must necessarily be more than a mere coincidence and one is justified in considering one the cause of the other.

Let us assume that the stenosis is of congenital origin, which is not unlikely, then with the establishment of the function of the kidney, there would be an increase of pressure in the ureter and a compensatory diverticulum might result. This is borne out by the experiments of Lindermann on young rabbits. That the diverticulum may have formed in utero is likely as shown by Young and Fontz in their observations on congenital strictures of the ureter with formation of diverticula and dilatations.

The third possibility, namely, that the diverticulum followed an acquired ureteral stricture later in life, is unlikely. With the numerous cases reported of such obstructions to the ureter, there have been no reported instances of similar diverticula complicating the strictures.

It may be argued that the ureteral stenosis is secondary to a congenital diverticulum, namely an inflammatory process in the diverticulum might produce a stricture below its opening. There is no evidence to support or combat such a supposition.

The most plausible view is to consider the diverticulum here presented as a secondary compensatory structure, following a congenital stricture and that it is formed either in utero or shortly afterwards. That it produced no symptoms until adult life is not unusual, as similar examples, such as bladder diverticula, have shown.

That its presence was not essential as a compensatory structure is shown by the post operative history of the patient. That its presence, due to acute inflammation, increased the obstruction to the urinary flow is shown by the history of the severe attacks and the fact that its removal caused a subsidence of the symptoms.

Bibliography

- Pepere, Alberto: *Fol. Urol.* 1808-1809, p. 3-396.
 Linderman, W.: *Central. f. allg. Path. u. path. Anat.* Nov. 16, 1895, Vol. 6, No. 20, p. 801.
 Wulf, Lipman: *Vereins. Beitr. d. Deutsch. med. Wehnschr. Leipsig.* 1900, Vol. 26, No. 15, p. 267.
 Wossidlo, E.: *Ztschr. f. Urolog.* 1920, Vol. 14, p. 217.

ONE HUNDRED CONSECUTIVE PERINEAL PROSTATECTOMIES: A CRITICAL REVIEW.*

By ARTHUR B. CECIL, M. D., Los Angeles

This study is based on a critical review of one hundred consecutive perineal prostatectomies. Ninety per cent of the cases were benign, and 10 per cent of the cases were malignant. The study has been limited to the clinical condition of the patients who have presented themselves for treatment to a brief sketch of the preliminary treatment, to the operative technique, and to the results which have been obtained by the method of Young's conservative perineal prostatectomy.

It is of considerable interest to study the ages at which it has been found necessary to perform prostatectomy for the relief of urinary obstruction, and a review of these cases shows that most careful consideration should be given to the differential diagnosis of obstructions to urination occurring in men under 50 years of age. It is not uncommon to see men younger than this on whom prostatectomy has been performed, but it is probably true that most of the obstructions occurring in men under 50 come under the heading of posterior bar formation or contracture of the vesical neck, and would best be treated by the punch operation or some variations of this procedure. The youngest case in this series was 52 years of age. The oldest was 90 years and 4 months. There were seven cases between 80 and 87 years of age. Sixty-one per cent of the cases presented themselves for treatment between the ages of 60 and 74 years of age, and 21 per cent came for treatment between the ages of 70 and 74.

The duration of time which had elapsed since onset of trouble was found to be very variable. Twelve per cent had noticed nothing unusual until the preceding year. On the other hand, 18 per cent had had trouble for ten years, and 10 per cent had had trouble for between eleven and fifteen years. Three of the cases had had urinary trouble as far back as they could remember. This study of the duration of time which had elapsed since the onset of trouble shows definitely that in a large number of cases the symptoms were early so distressing as to demand treatment, but if the patients succeeded in getting along for five or six years they did not seek relief until their general health was so deteriorated or complete retention had occurred, to compel them to have something

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

done. This is brought out very strikingly by the fact that, while 12 per cent of the cases came for treatment within the first year, between the sixth and tenth years only 10 per cent came for treatment, while in the tenth year alone 18 per cent came for treatment.

By far the most frequent initial symptoms were frequency and difficulty of urination. The increase in frequency was generally first recognized by nocturia. This is true for two reasons. First, because having to get up at night to urinate is an inconvenience which, with a similar degree of frequency, does not disturb during the day; and, secondly, because prostatic hypertrophy is not only a cause of kidney deterioration, but occurs also in that period of life in which general deterioration may be taking place, and in which there may be actually more secretion of urine at night than during the day. This has been explained by assuming that the kidneys, on account of their slowness of excretion, excrete at night the water which has been drunk during the day, instead of, as in the young individual, the excretion having occurred before bedtime. Thirty-one per cent of the cases complained of nocturia as the initial symptom, while 40 per cent gave as their complaint frequency and difficulty of urination. Seventy-one per cent, therefore, complained of frequency and difficulty. Among the other initial complaints were pain, which consisted of the pain of the desire to urinate, pain in the penis and suprapubic pain. Four cases had as their initial symptom complete retention of urine. None of the cases showed hematuria as the initial symptom. The symptoms present on admission differ from those of the initial group, in that various new symptoms, due to the result of prostatic obstruction, were found to be added. In other words, the initial symptoms, and for a considerable time, were usually entirely urinary, but the prostatic patient defers operative procedures as long as he can, and when he seeks operative relief he usually comes after toxemia has developed and various derangements of kidney function and perhaps circulatory disturbances have taken place.

The striking thing about the entire series is that at the time of admission 50 per cent of the cases sought relief on account of complete retention. Not all of the cases of complete retention were at the time of admission suffering pain, as some of them were using a catheter constantly. Fifty-five per cent of the cases suffered considerably with pain, usually associated with urination or the desire to urinate or following urination. Five of the cases on admission had hematuria, so that the bladder was filled with blood clots. Five of the cases had incontinence of urine from overdistension of the bladder. Three cases were brought in unconscious and three were wildly irrational. One case was having convulsions. One case was in marked stupor. Four cases had hemiplegia. Seven cases showed marked gastric disturbances. Two of the worst risks complained only of gastric disturbances; both had had urinary frequency and difficulty years before, and both considered themselves well, so far as their bladder was concerned, at the time of admission, but

complained of eructation of fluid into the mouth and vomiting. One case showed 880 cubic centimeters of residual urine and the other 1100 cubic centimeters. Nothing is more instructive than to review the initial symptoms in these cases and then go over the dreadful risks which come to ask for relief.

The method which has been employed in preliminary treatment almost routinely has been catheter drainage. Six of the cases had suprapubic drainage. In two of the latter this method was chosen on account of vesical calculi, which interfered with catheter drainage. The other four had suprapubic drainage at the time of admission, which had been done elsewhere. Little or no difficulty has been encountered in carrying out catheter drainage. The author has not considered suprapubic drainage advisable as a routine procedure for three reasons. Firstly, because when all is said and done it is an operative procedure carried out when the patient is least able to stand any type of disturbance; secondly, the particular susceptibility of the suprapubic space to infection is well recognized; and, thirdly, it immobilizes the bladder, which should be a freely movable contractile organ, and fastens it to the bladder wall, which in some instances tends to keep up a painful cystitis and discomfort from bladder tug.

The time of treatment has in the majority of cases been between two and three weeks. Twenty-five per cent were treated between two and four weeks, and in one case catheter drainage was carried out for sixteen months with no ill effects to the urethra. At the end of this time this patient was successfully operated with a total phthalein output extending over two hours and ten minutes of only 7 per cent. One case in which suprapubic drainage had been carried out for two years had a phthalein output for two hours and ten minutes of 12 per cent. This case was successfully operated.

In every instance the essentials of Young's procedure has been carried out. These essentials are, firstly, the definite preservation of the external sphincter muscle, and, secondly, proper exposure of the prostate by taking advantage of the fascia of Denonvillier, thus allowing the rectum to be stripped back and in this way giving an exposure so that proper enucleation can be carried out under the eye. As far as the enucleation is concerned, it is necessary to vary the technique at this point in such a manner as to accomplish proper enucleation of the obstruction, which evidently will vary as to whether one is dealing with a carcinoma, a carcinoma and adenoma associated together in the same case, a fibroadenoma, an adenoma pure and simple affecting the lateral lobes, or a general enlargement involving the vesical neck. The proper appreciation of what is to be done at this point is necessary to the successful operation of these cases.

In the ninety benign cases of this series one death occurred. This man was 84 years of age, had a right hemiplegia, and died on the fourteenth day of pneumonia. Of the ten carcinoma cases one death occurred. This man was also a hemiplegic, was 84 years of age, at the time of

operation had marked oedema of the left leg, probably from glandular involvement. This patient died on the fifteenth day of pneumonia. Two other hemiplegics were cured. One of the principal reasons for the low mortality rate has been the readiness with which perineal wounds tend to close, and thus allow the patient to early take up a normal mode of life. In the entire series the drainage tube has been removed on the second day and not replaced, and it is believed that this absence of foreign bodies has a good deal to do with the low mortality rate of perineal prostatectomy. Sixty-five per cent of the cases healed within less than thirty days. Twenty-five per cent of the cases had healed in two weeks or less, and 4 per cent of the cases were entirely healed between the fifth and ninth days.

It seems to the author that the technique of Young's perineal prostatectomy offers as advantages—firstly, a much lower mortality rate than any procedure yet devised, therefore, secondly, a higher operability rate, and, thirdly, a convalescence which is less than half as long. Fourthly, better functional results, and in this procedure by taking advantage of the natural immunity of the perineum, duplication of operation, such as in two-stage suprapubic prostatectomy, has been avoided.

SOME OBSERVATIONS IN CASES OF FRACTURED SKULLS SEEN IN THE SAN FRANCISCO EMERGENCY HOSPITALS *

By EDMUND BUTLER, M. D., San Francisco.

Two hundred and eighty cases of brain injuries, diagnosed as fractures of the skull, were treated in the San Francisco Emergency Hospitals during the year 1920.

The injuries were received in the following manner:

- 27 By collision between automobiles.
- 108 By being struck with automobiles.
- 2 In automobile-street car accidents.
- 8 In street car accidents.
- 28 By being struck with street cars.
- 68 In falls from buildings, scaffoldings, swings.
- 9 Received during fights.
- 3 Received during hold-ups.
- 11 By being struck with falling objects.
- 8 In motorcycle accidents.
- 8 By unknown causes.

Fracture of the skull is serious or not serious, depending upon the extent of the brain injury, the subsequent development of intracranial pressure, edema and meningitis.

All cases of brain injury require close and frequent observation, particularly during the first few hours subsequent to the accident. Sudden changes in temperature, respiration, pulse or blood pressure, are to be viewed with deep concern.

The average rate of pulse at the time of entering the hospital in this series of cases was 90, the most rapid, 150, and the slowest, 46.

The average rate of respiration was 23, the most rapid, 42, and the slowest, 12.

The nearer the pulse and respiratory rates approach the extremes, the more grave the prognosis.

Temperature was normal or subnormal in all cases upon entry.

One hundred and five patients were unconscious upon entry; one hundred and thirty-five were semi-conscious, and forty were sufficiently clear to give their names and addresses.

Hemorrhage from the ear or ears was recorded forty-eight times. Discharge of pulped brain material from the external auditory canal was noted in three cases. The progress of cases having hemorrhage from the ears has been more favorable than in those of apparently equal severity where bleeding was not present.

Nine of the fractures were depressed, and seven of these resulted from falling objects.

Twenty-nine of the two hundred and eighty cases were distinctly alcoholic. Alcohol is more of a factor than these figures would indicate. Frequently, the person operating the automobile is intoxicated, but we have no record of this.

All intoxicated persons having head injuries are treated as serious cases and never allowed to leave the hospital, except under the care of a physician.

Head injuries in old people are never to be regarded lightly, even if they may appear very insignificant upon entry. Many lapse into coma, and death may rapidly follow. This may be explained by the inelasticity of the skull and the senile changes in the cerebral vessels.

Fractures of the skull are distributed to the fossa and vault in about the following percentages:

| | Per Cent |
|-----------------------|----------|
| Vault | 10 |
| Anterior fossa | 14 |
| Middle fossa | 36 |
| Posterior fossa | 40 |

We must always remember that very serious traumatic brain injuries may take place without any fracture of the skull.

The location of the brain injuries is governed by the force of impact, and whether or not the head is in motion. If the head is in motion and strikes some solid object or material, as telephone pole or pavement, the brain will be injured directly beneath the skull at the point of impact; also a more extensive injury takes place on the opposite side of the brain.

If the head is not in motion and is struck by some moving object, such as a falling brick, the brain injury is located directly below the area of impact.

The most valuable and reliable localizing sign as to the side of compression has been the state of the pupils. The pupil on the side of the beginning compression reacts very sluggishly, often showing a hippus. As compression increases, this pupil slowly contracts, reacting at first, later fixed and finally dilates slowly, followed by the same course of events in the other pupil.

In an extradural hemorrhage from branches of the middle meningeal, with the dura intact, this pupillary phenomenon may take twelve to seventy-two hours, or even longer, to go through the various stages. The reflexes, superficial, deep and

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

pathological, spasticity and paralysis, are of value, but they are more changeable and unreliable where the injuries are multiple.

In a case, for example, having a direct injury in the right parietal-temporal region, with tearing of the anterior or posterior branch of the middle meningeal, and a contrecoup contusion and laceration of the cortex, the reflexes and paralysis would probably indicate the contrecoup injury, but the pupils would give evidence of the increasing extradural clot on the right and, along with properly interpreted X-ray, would indicate the location for decompression.

Operation is not indicated, (1) brain injuries so extensive that all reflexes, superficial and deep, are suspended. (2) When the pulse is above 110, if the rapid rate is due to shock alone; given time it will slow down and then decompression may be performed, if indicated; if due to destruction of brain the pulse continues to increase, and any operative interference would only hasten the end. (3) When all the signs of compression develop very rapidly, for example, in thirty minutes to one hour. (4) Medullary edema manifested by rapid pulse, respiration and rising temperature.

Operation is indicated—(1) Depressed fractures. (2) Any case of gradual increasing cerebral compression, regardless of whether it is due to extradural hemorrhage, intradural hemorrhage of parenchymatous edema. (3) Any case showing definite localizing irritative or paretic signs.

Post epileptic coma, often because of the presence of recent scalp injury, is at times mistaken for fracture, with brain injuries. Cerebral apoplexy in cases that have had recent scalp injuries and comas, uremic, diabetic, or narcotic poisonings, are likewise an occasional cause for confusion.

Treatment consists in complete rest in a quiet, dark room, head and shoulders elevated, ice cap to head, heat to extremities, and constant observation.

CONGENITAL PYLORIC STENOSIS *

By ALANSON WEEKS, M. D., San Francisco, Cal.

This subject has been so thoroughly handled in the literature of late years, that the only excuse for bringing it up again is to remind us all that we are probably overlooking some of these cases. It does not seem reasonable that the pediatricians in San Francisco and Los Angeles should see as many of these babies as they do, and yet so few be reported from the rest of the state. It has been variously estimated that from one to three per cent of young babies needing doctors' care suffer from this disease to a greater or less extent.

The diagnosis, it would seem, is simple, the symptoms usually appearing on an average of from four to seven weeks after birth. The most marked symptom is vomiting, which is characteristically projectile, and with this vomiting a rapid loss of weight; the loss of weight and the character of the stools depending, of course, upon how much or how little food passes the pylorus. Upon the appearance of these symptoms, if the baby is in-

spected in a good light, the visible peristaltic waves in the epigastric region moving from left to right as the stomach is making violent efforts to force material past the pylorus are easily seen. A number of men have reported that they are able to palpate the tumor. I have been able to do so only a few times and I do not think, in as much as the other signs are so evident, that either the X-ray or the palpation of the tumor are necessary for prompt and proper diagnosis. This statement is based upon the fact that in only one patient out of forty operated upon with this diagnosis, have we failed to find the very definite hard tumor.

The question of medical or surgical treatment constantly arises. I wrote to twenty pediatricians in the State of California and received answers from ten, and asked them the following questions:

"Will you please tell me what is your present treatment for congenital pyloric stenosis?"

"How long do you use the thickened feedings before resorting to surgery?"

"What percentage of babies, in your experience, suffer from this condition?"

The consensus of opinion of the ten who specialized in the treatment of children was, that these babies should be tried on thickened feedings if received early enough, and if this treatment did not, within two days, show that the baby was holding its own or improving, the patient should then be subjected to surgical treatment.

Dr. Langley Porter answered as follows:

"Our present treatment for pyloric stenosis, if the baby is in good condition, is always to try it on thick cream of wheat or farina feeding. If it still vomits, or if a diarrhoea is set up, or if there is a loss of weight for four consecutive days, then we refer to the surgeon."

Drs. Dietrick and Berkley, of Los Angeles, made the following answer:

"Our present treatment in pyloric stenosis is thick feedings with surgery later, if necessary.

"We recommend surgical interference as soon as, in our judgment, the continuation of medical treatment seems to be jeopardizing the infants' chances of ultimate recovery.

"We do not believe in reducing the child's operative risk to zero before operating."

From the above, and also from the fact that we know of a number of patients with the same men making the diagnosis who made them when we operated upon so many others, that many babies have recovered with the use of the thickened feedings. We have, therefore, to modify our dogmatic statements of a few years ago and admit that a certain percentage of these patients will recover on medical treatment alone, but it is also evident from the answers received that in no case should the baby be allowed to be injured by medical care when it is so perfectly evident that the surgical risk is so much smaller.

We have operated upon sixteen babies since the spring of 1919, with one death. This death occurred in a baby five weeks old, referred to us by Dr. Langley Porter. The child was premature and of low vitality, and was suffering with a marked enteritis at the time the operation was

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

performed. A typical tumor was found at the pylorus. The Fredet operation was done, and even though the child had vomited everything before the operation, he did not vomit following the operation. However, the enteritis continued, and death occurred sixteen days after the operation. This death was undoubtedly due to the enteritis, which Dr. Porter feels could reasonably be blamed to the thickened feeding.

The last baby of this series of sixteen was an eight months' premature, and was one month old when brought to operation. He weighed six and one-half pounds at birth, and at operation weighed four and one-half pounds. Dr. Fleischner, with whom we saw this patient within an hour after it was brought into San Francisco, had his doubts about the baby being able to stand surgery, but in as much as it seemed hopeless otherwise, we urged operative treatment, and within another hour a marked tumor was exposed and divided by the Fredet method. Anesthesia for this operation lasted fifteen minutes. The baby is now well and in apparently good condition.

Some years ago we reported a series of some twenty other cases of patients with congenital pyloric stenosis subjected to surgery. In that series of twenty were two babies of the same mother. These were her first two children—boys. She had after that time a third boy who was perfectly normal and healthy. One of the patients in the present series is a girl baby, the fourth child of this same mother, upon whom the Fredet operation was done. We report this fact of the same mother having three babies with the same condition, and one without, with the hope that it may in some way aid in clearing up the cause of congenital pyloric stenosis because, being purely in the realm of conjecture, no definite logical reason so far has been offered.

The Fredet operation, improperly named after Rammstedt, has been so thoroughly pictured and described that it is only necessary to remark that the simple splitting of the tumor mostly by division down to the mucus membrane, with care being used at both ends, and especially at the duodenal end where the tissues are so thin, so as not to tear through the lumen of the stomach or bowel, is so simple and can be done so rapidly that, from a surgical standpoint, one should have no mortality if the babies are not kept under observation and medical care until it is too late for either medicine or surgery to be of value.

Since using the incision high up in the middle of the right rectus over the liver, suggested by Dr. Butler, in as much as the liver drops back over the operative wound, we have no trouble from hernia or protrusion of the delicate omentum. The abdomen should be closed in layers exactly as in an adult.

The rate of illegitimate births in the United States, insofar as we can assume that the sections for which adequate data are available are representative, is considerably lower than that in most European countries. Inadequacy of birth registration in this country makes it impossible to make proper comparisons, but apparently the usual proportion of illegitimate births to total births is from 3 to 4 per cent.

SURGICAL RESULTS FROM AN ECONOMIC STANDPOINT*

By GAYLE G. MOSELEY, M. D., San Francisco.

problem, but it is a problem which, owing to

The economic result of surgery is not a new new experiences and changed conditions, presents a new viewpoint. The most important function of surgery, of course, is to prolong human life and relieve pain. After these are accomplished, the outstanding problem is the economic result. Medicine and surgery are recognized as important factors in industrial production. No large business enterprise is now undertaken without competent medical supervision, and it is the duty of the medical profession to study industrial needs from a medical standpoint, and be prepared to offer suggestions to industry that will make the service of the physician more valuable.

In the past, the initiative in this line has come from industry, and unless the medical profession, by proper organization and education, prepare themselves to furnish the necessary service and advice, industrial medicine will soon be dominated by industry, instead of by the physician.

One very important problem before the profession today, and the issue should be squarely met, is that of standardizing surgical results. Dr. Harry Mock¹ states the case very clearly, when he says, "All standards of treatment in the future must be judged by the economic end results obtained."

The same forces which have operated to standardize medical schools and hospitals, will in time bring about, within reasonable limits, the standardization of surgical results. While we all realize that in any particular case, there may be peculiar conditions present, such as old age or previous disease, which may modify the result, yet when you take a very large number of the same kind of surgical patients, the average result, and the average lost time, should not vary greatly. The records of any large insurance company, doing compensation business in the State of California, will show that there is a great variation in the results obtained in cases of approximately the same kind by different physicians. This variation is so great, that it cannot be wholly accounted for by the different conditions present in the individual patient. The statistics of the large insurance companies, if tabulated, will very quickly show who are the best surgeons in the state, judging from the economic results obtained and, after all, results are what count.

When you consider that the insurance companies writing compensation business in the State of California are paying about \$3,000,000 yearly for medical and hospital services, it is evident that, with the record of results before them, they are going to employ those physicians who get the best results in the shortest time, and this is the answer to that much-discussed question that the injured employe should have free choice of physicians. Until such time as all physicians are equally competent, this would be an economical

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

impossibility. The demands for medical and surgical service are subject to the same law of supply and demand as every other commodity, and those purchasing the commodity will always seek to get the best available for the amount of money expended.

The interest of the patient must always be the first consideration, and certainly no law of medical ethics is violated when those responsible for the treatment of those injured in industry, select the surgeon whom they think most competent to bring about a speedy cure, and return of the injured person to his place in industry.

The importance of returning injured persons to industry at the earliest possible moment has not been sufficiently emphasized, and it should be borne in mind that the early return of the injured person to industry is just as important in those cases seen in every day practice, as in the cases that are industrial. The time lost by patients that are not industrial is just as valuable to the individual and to society at large, as is the time lost in cases covered by the Workmen's Compensation Law.

To give some idea of the immense amount of time lost, on account of industrial accidents, it might be well to call attention to the fact that in 1919 a total of 7,228,983² days were lost on account of industrial injuries. This includes time lost on account of total disabilities, and deaths. A death disability is figured as a loss of six thousand days. If you add to this the amount of time lost through accidents, that are not industrial, it will give you an idea of the tremendous economic problem involved.

In 1919, there were approximately sixty thousand industrial accidents in the State of California which caused loss of time from work. If through good surgical treatment an average of two days could have been saved on each case it would represent a saving of 120,000 days, which would represent an economic saving of approximately 328 years.

Surgeons frequently have given insufficient consideration to the problem of getting the injured person back to work promptly. This is largely due to the fact that surgeons fail to consider treatment from the economic standpoint. The surgeon's duty is to restore function, and his obligation to the patient has not been fulfilled until the patient is back on the job. In the past, many surgeons have considered that they were through with the patient when he was able to leave the hospital. As a matter of fact, in many cases the important part of the treatment is just beginning when the patient leaves the hospital. The fact is that the patient should be under the direct supervision of the surgeon until he is back at work, and should feel that at all times he is under treatment. The fact that many patients in the past have not been properly supervised from the time of leaving the hospital until they return to work, is responsible for a large economic loss, as well as many mental invalids or so-called traumatic neuroses. Injured persons today are certainly entitled to the help which comes from properly applied physiotherapy, occupational therapy,

graduated exercises, and such other measures as experience has shown to be of value in the rehabilitation of the injured.

One important point to be emphasized in connection with rehabilitation work is that it must be under the direct supervision of the surgeon. If this rehabilitation work is permitted to get into the hands of laymen, we will very soon have another separate and distinct profession, who will, in a certain sense, be competing with the medical profession, but over which they have no control. This line of treatment is going to be an important part of medicine in the future, and it behooves the medical profession at the very beginning to so organize this work that it will be a part of regular medical treatment, and not a specialty in itself.

Many surgeons will complain that they have not the time to give to this particular line of work, in which case they should see to it that their patients are referred to some institution which is directly under the control of a physician, or to some physician who makes a specialty of this kind of work. There is vast possibilities for good in all lines of rehabilitation work, and it has been so very well advertised to the public, that in the interest of all parties concerned the conduct of this line of treatment must be under the direct supervision and control of the medical profession.

References.

1. Industrial Medicine and Surgery (Mock).
2. Report of Industrial Accident Commission.

CHRONIC DILATATION OF THE DUODENUM*

By HARLAN SHOEMAKER, M. D., Los Angeles, Calif.

Dilatation of the duodenum must occur when an obstruction exists distal to that part of the gastrointestinal tract. It could naturally occur as a sequence to a dilatation of the entire length of the small intestine. It does occur much more frequently as a dilatation of the duodenum without an involvement of the intestine distal to the duodeno-jejunal angle, which is supported by the ligament of Treitz. There is invariably associated with it vague, or sometimes profound, gastric changes. The stomach symptoms are due to first a back-up, and eventually an atony of the stomach from stasis. In the hope that the one case reported in this paper may help to clear up some of the symptoms caused by this rather infrequent condition this history is offered for your consideration.

At a recent meeting of the Clinical Congress of Surgeons the writer noted the dismay of an operator who failed to find a gastric, or duodenal ulcer, but did find a very markedly dilated duodenum with an extremely patent pylorus. The appendix was removed and the abdomen closed. I am sure that the symptoms exhibited by this patient were unimproved. Undoubtedly many other operators have been confronted by the same situation and used a similar means of egress from a perplexing situation. In all honor to the

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Roentgenologist, I shall state that the condition of the patient in the above-mentioned case was clearly and properly diagnosed prior to the operation. Such a diagnosis is not always easy.

I can add nothing to the cause of such a condition. I am willing to believe any theory of its causation. Congenital malformation; an attack of infantile paralysis of the intestinal type, possibly undiagnosed; or an obstruction due to dragging of the viscera sharply at the duodeno-jejunal angle; or perhaps an anomaly of the origin of the superior mesentery artery might be determining factors in the dilatation of this portion of the small intestine. The symptomatology is mostly gastric, although the early stage of hypertonicity of the stomach, due to a failure of the duodenum to pass along the bolus of food, will reproduce all the classical stigmata of duodenal ulcer, particularly the pain at the end of digestion and excessive acidity. Later on an atony of the stomach follows and the acidity may be entirely lost, especially if the pylorus has also lost its control. Vomiting is a marked associated symptom of the latter stage of dilatation of the upper portion of the gastro-intestinal tract.

I am presenting one case history for discussion because there is incontrovertible evidence that this patient suffered from a dilated duodenum.

Case History: Miss B., 55, referred by Doctor J. V. Barrow, had a gastroenterostomy done two years previous at Doctor Barrow's request by a colleague. She now complains of the same symptoms, that is, nausea and vomiting, auto-intoxication and retention of food in the stomach during that part of her day spent out of bed.

Family History: Father died at 87. Enlarged prostate. Mother died at 78—obstruction of bowels. Post mortem diagnosis—obstruction of the small intestine. Two brothers, one sister, dead. One brother, cancer of the liver, one brother, pneumonia; sister, appendicitis.

Social History: Patient is not married. Had diseases of childhood—measles, mumps, whooping cough. Has always been in good health, but thin and sallow. Was hurt in a runaway twenty years ago, when she was thrown on her head. After this she complained of some internal trouble.

Previous Medical History: In 1906 the right kidney was fixed for "floating kidney." Was ailing and nervous after attending father. Menstrues began at the age of thirteen and ended in 1913 at forty-nine. Patient was irregular a few times but course was uneventful. Consulted Doctor Barrow because she was miserable and sick two years ago. Had had attacks of dizziness and nausea.

Fluoroscopic findings showed a nine-hour retention and at an operation the gall bladder was drained and an anastomosis of the stomach and small bowel made. History shows a posterior no loop gastro-enterostomy. Six months later the patient suffered an attack of severe pain in the upper abdomen and returned to the hospital for three weeks, with agonizing cramp-like pains. She was in bed at home for three months. At that time her body weight was 104 pounds.

On November 5, 1919, I reopened the abdomen

for symptoms above mentioned and a nine hour retention in the stomach.

Old scar resected, gall bladder not removed. Transverse colon raised and no evidence of scar in colon seen. The jejunum from the ligament of Treitz lies free. Old history brought into surgery and read—states posterior no loop gastro-enterostomy done.

Operation: Window opened in transverse mesocolon and stomach drawn out. An anastomosis of the stomach to a very large dilated transverse duodenum, which was covered by a complete peritoneum, was noted, with a large stoma patent. The duodenum was apparently not recognized at the previous operation.

An anastomosis of the jejunum to the opposite side of the duodeno-gastric anastomosis—or a duodeno-jejunal anastomosis made. Abdomen closed.

1-28-21. Complains of being uncomfortable in bowels. Is toxic. Has a burning pain in the region of the gall bladder, with pain down the leg. Has waves over body. Complains of gas but not nearly as much as prior to last operation.

Scars of right kidney, right rectus and stab wound above gall bladder all firm and freely moveable over underlying tissue. Fluoroscopic 100a. Hurried eating is followed by gaseous distention below umbilicus. Pain down right limb. No numbness of foot.

2-1-21. *Fluoroscopic and Plates:* Stomach empties through stoma of anastomosis. Regurgitation into duodenum toward the pylorus. Barium Sulphate appears in the jejunum rhythmically from the stomach. Patient is tender upon pressure over the gall bladder.

Six Hour Examination: No retention in the stomach. Head of barium meal in splenic flexure. Caecum moves with difficulty.

Twenty-four Hour Examination: Large intestine filled. Ileum empty.

3-23-21. Weight 127 pounds. Color good. Pain in right leg subsided. Digestion good. Tongue clear. Bowels move daily. Stool and urine examination good. Very little gas. Able to eat pickles and horseradish without pain. Complains of feeling bad in mornings. Growing stronger—able to get about town unaided.

The interesting points to be noted are that first the window made by the previous operator through the mesocolon had so perfectly healed that no scar was evident. When a new window was opened in the mesocolon the anastomosis of the stomach to the duodenum was immediately seen. I maintain that this dilatation of the duodenum pre-existed the first operation or the operator could not have drawn the organ into the Roosevelt clamp; moreover the symptomatology remained the same after the operation as before—pain, vomiting and retention.

The duodenum with the stomach sutured to one side was still so large that ample room was found to anastomose the upper jejunum to its lower side, using a Roosevelt clamp and the ordinary gastro-enterostomy technique.

The patient made an uneventful recovery in contra-distinction to her stormy recovery at the

previous operation. The fluoroscope shows a small amount of barium caught in the duodenum as it passes from the stomach transduodenally to the jejunum. The patient, a rather tall, spare woman, has taken on twenty-three pounds of weight.

In the literature some nineteen methods are discussed for the relief of this condition. It is very significant that in the histories of forty-one cases presented by Kellogg and Kellogg twenty-two cases have been previously operated upon, eight gastro-enterostomies, two gall bladders drained, removed, two kidneys fixed. My patient had two previous operations, one kidney fixation, one gall bladder drainage and gastro-duodenostomy.

I might conclude that a widely dilated pylorus should suggest to the mind of the surgeon the possibility of obliterating the duodeno-jejunal angle by a duodeno-jejunosomy.

Kellogg & Kellogg, *Annals of Surgery*, May, 1921.

ACUTE SUPPURATIVE THYROIDITIS

By P. K. GILMAN, M. D., F. A. C. S., San Francisco.
(From the Surgical Clinic, Stanford University Medical School, San Francisco, California.)

It was not until some time after the earlier writers had observed and recorded instances of thyroiditis, both purulent and non-purulent, that the difference between an inflammation of the normal thyroid and a goitre was made. Later a further advance was made when Kocher, in the latter half of the nineteenth century, stated that all inflammations of the gland were secondary to a focus elsewhere. Bacteriological proof of this was made a few years afterward.

While this condition is not rare it is sufficiently uncommon to merit the recording of cases, but one instance having come under observation in this clinic during the past several years. Indeed, the thyroid is one of the least susceptible glands of the body to infection.

Thyroiditis is an inflammation of the normal thyroid gland. It is secondary to a focus elsewhere in the body, this latter often being obscure and difficult to demonstrate.

Three possible routes of infection exist, that by contiguity from a pre-existing perithyroiditis, that by direct inoculation from the introduction of organisms on a needle or knife, and that by way of the blood stream. When the organisms have obtained a foothold in the gland their activities may result in either a non-purulent or progress to a purulent inflammation.

In the non-purulent stage the greatest reaction may be observed in either the supporting portion of the gland or in the epithelial elements, or the process may be generalized, both supporting and epithelial portions being equally involved. Where the process has gone on to suppuration, of course, all elements are affected, though not always to an equal extent, the stroma often proving the more resistant.

While thyroiditis may occur apparently spontaneously, it is rare. The more common manner of occurrence is during the course of or following an infectious condition elsewhere in the body, and during the period of convalescence.

The list of diseases which have been complicated by thyroid inflammation is a generous one, and includes those of the upper, middle and lower air-passages; inflammations of the gastro-intestinal tract; acute exanthemata, and general infections. From the infected gland have been isolated, in addition to the ordinary pyogenic bacteria, the pneumococcus, the typhoid bacillus and members of the colon group. Thyroiditis has been observed at all ages from the very young to the old, although the majority of cases occur after the second decade. Women are more frequently affected than men.

The amount of gland involved in the inflammatory process varies from a portion of one lobe to the entire gland, the greater number of cases recorded being unilobular. The early picture differs in no material feature from an inflammatory process of any glandular structure. Congestive changes are followed by, at first, proliferative changes in the epithelial elements, then by desquamation and destruction. The acinal contents become liquefied, and the usual gathering of inflammatory elements takes place. There is generally a rich collection of leucocytes infiltrating the various structures within the involved area.

If the process be arrested at this point, resolution may follow promptly or more gradually in weakened subjects. If suppuration ensues, numerous abscess cavities occur which later coalesce to form a large area that may even involve the entire gland. Depending upon the rapidity of the process, which in turn is dependent upon the type and virulence of the causative organism and the resistance of the patient, the character of the pus varies within wide limits. In some instances it is thin and watery, in others thick and creamy. Its color is determined not only by the organism, but by the amount of hemorrhage which has taken place into the necrosed areas.

According to Lebert, suppuration occurs in 60 per cent of all cases of thyroiditis, and 25 per cent of all cases terminate fatally. Other writers and reviewers quote statistics to show that thyroiditis terminating in resolution is the more common.

In its early stages thyroiditis may be difficult to diagnose, and several days may elapse before the symptoms are sufficiently definite to point to the seat of trouble. Depending upon the condition of the patient and the activity of the invading organism, the onset may be gradual or, more often, sudden. As would be expected there is usually high fever and often a chill, prostration and weakness, loss of appetite with, not infrequently, gastro-intestinal disturbances.

Pain in the thyroid region is soon complained of. The pain may at first affect any portion of the neck above or below the level of the gland before becoming localized. The pain becomes more and more severe as the process develops, and sooner or later interferes with and is increased by swallowing.

Swelling of a portion of, or the entire gland, becomes manifest—early in some cases, delayed in others. With the development of the trouble the patient's head is apt to assume a certain posi-

tion, a sign noted by different observers. The head is flexed, as any attempt at extension causes pressure upon the gland between the muscles covering it and the vertebræ behind. Hoarseness from inflammation of the upper air-passage is not uncommon. Examination at this stage will show an enlarged, painful, tender gland of firm—even hard—consistence that gives the usual thyroid sign of movement with swallowing.

If the disease be arrested now, the gland may return to normal with a subsidence of symptoms. This return may be prompt or may be delayed over some weeks. Cases may subside for a period only to flare up later and progress to suppuration.

If the inflammatory process goes on to suppuration, there is usually an increase in the severity of the symptoms and physical signs. Prostration becomes more marked, the fever ranges higher and the blood pressure keeps pace.

Locally, the swelling loses its hard character, changes in form as the surrounding structures become edematous and the skin takes on an inflammatory reaction which may eventuate in necrosis and rupture of the abscess if surgical drainage be not instituted. The size of the swelling in thyroiditis will never become extreme while in infectious processes of a goitre—strumitis—the size is limited only by the size and character of the pre-existing condition.

In the pre-suppurative stage the treatment should be so directed as to relieve the symptoms.

If suppuration has developed, and it is not always readily detected, the abscess should be opened and drained. The question of diagnostic puncture is one which has its advocates as well as those who condemn it. Certainly, it is better to err towards too early rather than too long delayed incision. Unfortunately the immediate good result is not necessarily an indication of the final outcome, as these patients in many instances develop symptoms referable to subsequent thyroid disease. These sequelæ may be the result of either hyper or hypothyroidism.

Case, J. J., Disp. No. 83,894, Italian, laborer, age thirty-nine years, was admitted to the surgical service of Dr. Stanley Stillman. Patient complained of a swollen, stiff and painful neck of five days' duration. He states he had influenza a short time ago, returned to work before he was fully recovered, and the neck trouble developed soon afterwards. The onset was sudden, the neck being painful when patient awoke one morning.

Patient's family and past history is unimportant. He came from Italy eighteen years ago, and has done laborer's work in various regions since.

On admission, patient's temperature was 101° F., his pulse 120 per minute, and his respirations above 30 per minute. He complains of severe headache, and has a cough. His voice is hoarse.

At this time there was a painful, firm swelling conforming to the shape and position of the thyroid gland. To the left of the mid-line, and in front, there was an area of redness of the skin beneath which existed the greatest point of tenderness and probable fluctuation.

The patient was kept in bed for twenty-four hours with hot compresses to his neck. At the end of this period his neck was better, his temperature had dropped to 98.2°, and he seemed generally better. In spite of advice he left the hospital.

Four days later he returned to the hospital,

looking very ill and with a temperature of near 100° F., a pulse of 120 per minute. At this time the entire area of the thyroid was swollen, tender, the skin red, and the area of fluctuation had spread to include not only the isthmus region, but both lobes as well. Patient's leucocytes were 14,750 with 72 per cent polymorphonuclear cells.

He was given a general anesthetic, and pus withdrawn from the fluctuant area over the left lobe of the thyroid by means of a needle and syringe. An incision was carried down along the needle before withdrawing it. This incision was stretched with a curved clamp, and between one and two ounces of a thick, creamy pus obtained.

The cavity was then carefully explored with the finger, and was found to invade both lobes and the isthmus, there being apparently a thin wall of gland tissue lining the capsule, this surrounding in turn, more or less structureless, softened and broken down thyroid. Drainage tubes were inserted well up within both the right and the left lobes.

Smears from the pus showed many gram-positive, encapsulated diplococci, and a few cocci in short chains. Cultures yielded a growth of pneumococcus, type 1.

The patient made an uninterrupted recovery, the immediate result being good. He left the hospital ten days following the operation to return to the out-patient department for dressings. He returned twice, the last time being five days after discharge from the hospital. Since then he has been, unfortunately, lost sight of, and it will probably not be possible to complete our records in this case as to the ultimate result, whether or not disturbances will follow from an abnormal thyroid function.

Bibliography

- Barling: *British Med. Jour.*, 1905.
 Bonney: *Lancet*, London, July, 1911.
 Bradshaw: *Med. Record*, Nov. 2, 1895, p. 640.
 Delafield: *Med. Record*, 1873, p. 40.
 Evans: *British Med. Jour.*, 1905.
 Gallard: *Med. Record*, July, 1895, p. 140.
 Koher: *Arch. f. Chirur.*, XXIII, No. 113.
 Lahey: *Boston Med. and Surg. Jour.*, 1917, 176, p. 94.
 Lebert: *Trans. Am. Surg. Assn.*, 1894, p. 275 (abst.).
 Lydston: *New Orleans Med. and Surg. Jour.*, 1891, p. 92.
 Meara: *Arch. of Pediatrics*, Aug. 1906.
 Melchoir: *Berliner Klin. Wochenschr.*, 1914.
 McArthur: *Chicago Med. Recorder*, Dec., 1903.
 Musser: *Phila. Med. Bull.*, 1887, p. 67.
 Oulment: *La France Medicale*, 1880, p. 767.
 Phillmore: *British Med. Jour.*, 1899.
 Ransohoff: *Ann. Surg. Dec.*, 1894.
 Ransohoff: *Trans. Am. Surg. Assn.*, 1894, p. 275.
 Romaine: *Sajous Annual*, 1888, p. 338.
 Robertson: *Lancet*, London, April, 1911.
 Roque & Bancel: *Lyon Med.*, 1903, p. 263.
 Roth: *Am. Jour. Med. Sci.*, 1904.
 Secord: *Canada Lancet*, 1903, p. 365.
 Shaw: *Arch. of Pediatrics*, Feb., 1899.
 Sherris: *Guy's Hosp. Gazette*, London, 1916, XXX, p. 35.
 Tavel: *Centralb. f. Chirur.*, 1892, No. 12.
 Voorhees: *Med. Record*, N. Y., 1914, 86, p. 883.

Make each hospital in a community a health center and a life extension institute for its neighborhood, advises the superintendent of a New York City hospital, who has fauit to find with the institution which stands isolated and apart in its community. As health centers, he believes hospitals would render their utmost service to the community.

Louis J. Frank, superintendent of the Beth Israel Hospital, New York City, proposes the extension of hospital service and suggests a zone system as the most practicable means of bringing citizens and the hospital into closer touch. According to Superintendent Frank, physicians are as much in need of a broadened policy for the hospital, as the public is in need of the health service which hospitals could perform, if developed as health centers. Physicians frequently lose their connection with medical progress on the day of their graduation from college, says their critic. This is so because their professional relations with hospitals, dispensaries, and clinics are restricted, whereas if each hospital were made a health center all the physicians in the locality and their patients would be served by the hospital.

The patient might either remain at home, become an out-patient of the dispensary at the health center, or temporarily enter the hospital for treatment, remaining at all times under the direction of his own physician. The facilities of the hospital-health-center, which now benefit none but hospital patients, would under the zone system be extended to serve the sick in homes of the neighborhood.

FOCAL INFECTION

By F. F. GUNDRUM, M. D., Sacramento

The last decade has seen an enormous amount of work and printer's ink devoted to the investigation and discussion of the focal infections. Many of the therapeutic results following ablation of foci of chronic infection have been most brilliant. Many other patients have failed to improve after tonsillectomy, tooth extraction, and a multitude of tinkering. The most disheartening stumbling block for the clinician is the inability to tell whether a given focus is related in a causal way with the symptoms complained of. We may remove many foci, but if we leave the critical collection undrained, no relief follows, to our own distress and the disgust of the patient.

There is an especial difficulty in the paranasal sinuses because neither X-ray, transillumination, or direct inspection will show infection in 100 per cent of cases. It is of the greatest importance to have the patient collect for examination, all nasal and throat discharge for twenty-four hour period. The presence of a definite muco-purulent secretion means a sinusitis without any further examination.

The current method of shrinking the mucous membrane and looking into the nasal passages is too often useless, because the secretion sought is in the sinus, where it cannot be seen, or upon the handkerchief, which is too often omitted upon investigation.

subject of the biography must have been worth while.

The career of General Sternberg was one that was truly remarkable not only in its achievement but also in its variety. The chapters dealing with his life during the Civil War and in the campaigns against the Indians are charmingly written and read more like romance than fact. The list of scientific achievements is too great even to enumerate, but a few must be mentioned in order to give an idea of their variety. General Sternberg was the pioneer bacteriologist in this country. It was he who discovered the pneumococcus. He was the first to demonstrate the tubercle bacillus in this country. He did the pioneer work in solving the yellow fever problem and was responsible for the work of Reed, Carroll, Lazear, and Agramonte. He established the Army Medical School, the Army Nurse Corps, the Dental Corps, and the General Hospitals at the time of the Spanish-American War. At the same period he was responsible for the working out of typhoid fever prevention by sanitary means. Sanitary measures always attracted him. He did some of the earliest the best work on disinfectants.

But why go on giving a partial list of the achievements of the man who stands out pre-eminently as the medical officer who saw the greatest amount of active field service and who turned out and supervised the greatest amount of scientific work of high character? Get the book and read it!

A. L. F.

Book Reviews

Medical Clinics of North America. Volume IV, Number 4 (Philadelphia Number, January, 1921). Octavo of 255 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1921. Published bi-monthly. Price per clinic year: Paper, \$12; Cloth, \$16.

Alfred Stengel: On the use of serum and blood of convalescent patients in the treatment of lobar pneumonia and influenzal pneumonia. **Thos. McCrae:** Pain in the lower back. **M. H. Fussell and Leon Jonas:** Calorimetry. **David Riesman:** Phlebitis and thrombosis. **Joseph Sailer:** Case of pernicious anemia. **G. W. Norris:** Tophaceous gout. **E. H. Funk:** The diaphragm. **H. R. M. Landis:** Aneurysm of thoracic aorta. **O. H. P. Pepper:** Medical aspects of retinal hemorrhage. **J. H. Musser, Jr.:** Observations on nephritis. Some unusual manifestations of cerebro-spinal syphilis. **J. P. C. Griffith:** Types of anemia as seen in early life. **F. X. Dercum:** Problems in diseases of internal secretions. **B. B. V. Lyon:** Discussion of treatment of a case of chronic arthritis, with lambiasis, by duodenal biliary drainage. **E. J. G. Beardsley:** Necessity for and importance of routine procedures in clinical medicine. **C. G. Wolferth:** Abnormal cardiac rhythms and their differentiation by simple methods. **T. G. Schnabel:** Gastric dysfunction in cases of internal secretory disturbance. **H. K. Mohler:** Pernicious anemia—gastro-intestinal and spinal cord symptoms. Addison's disease. **T. G. Miller:** Carcinoma of the esophagus. **J. C. Doane:** Some manifestations of alcoholism.

George Miller Sternberg. A biography. By Martha L. Sternberg. 326 pp. Chicago. American Medical Association, 1920.

If one knew nothing whatsoever of the life and activities of General Sternberg, a glance at the index of this book would make one desirous of learning something about the man; for in this index are to be found the names of almost all the Americans who have had to do with the prevention of infectious disease. And to have been an associate of these men argues in itself that the

A Text-book of Physiology, for Students and Practitioners of Medicine. By Russell Burton Opitz, M. D., Ph. D., Associate Professor of Physiology, Columbia University, New York City. Octavo Volume of 1185 pages with 538 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$7.50 net.

This book embodies the subject-matter of lectures delivered at the College of Physicians and Surgeons, Columbia University. As Dr. Opitz has been particularly interested in problems of circulation, the advanced student of physiology will find the chapters on that subject the most interesting. The book appears to be well written and well illustrated and is a welcome addition to the physiological shelf.

W. C. A.

Surgical Clinics of Chicago. Volume IV. Number VI (December 1920). Octavo of 1336 pages, 57 illustrations and complete index to Volume IV. Philadelphia and London: W. B. Saunders Company, 1920. Published Bi-monthly. Price per year: Paper, \$12; Cloth, \$16 net.

A. D. Bevan: Exstrophy of the bladder. Abscess in deep cervical fascia of neck. Hypernephroma. Stone in cystic duct. Stone in kidney. **Kellogg Speed:** Tendon transplantation for wrist-drop. **T. J. Watkins:** Post-operative atonic ileus. **G. L. McWhorter:** Birth fracture of the humerus reset with aid of fluoroscope. **A. B. Kanavel:** After-treatment of infections of hand. **Dr. Gatewood:** Acute diverticulitis of sigmoid. **G. E. Shambaugh:** Acute perichondritis of epiglottis. Acute sphenoid sinusitis. Primary syphilitic sore on faucial tonsil. Suppuration of labyrinth followed by intracranial complications. Chronic suppurative otitis media with cholesteatoma. **A. J. Ochsner:** Carcinoma of pancreas. **Carey Culbertson:** Fibroid of uterus. **D. N. Eisendrath:** Pyelitis of pregnancy and puerperium. **H. L. Kretschmer:** Elusive ulcer of bladder. **Edmund Andrews:** Large strangulated umbilical hernia. **V. C. David:** Treatment of acute suppurative arthritis of knee-joint. **Hugh McKenna:** Spina Bifida. **Carl Beck:** Tuberculosis of appendix and both adnexae. Arteritis obliterans. Tuberculous arthritis of knee-joint. **C. M. McKenna:** Stone in ureter. Tumor of posterior urethra. **A. H. Montgomery:** Bone cysts. **R. L.**

Moodie: Amputation of fingers among ancient and modern primitive peoples and other voluntary mutilations, indicating some knowledge of surgery.
Harry Culver: Papilloma of posterior urethra. Benign epithelial tumors of ureter.

Pharmaceutical Bacteriology. By Albert Schneider. 2d ed. 441 pp. Illustrated. Philadelphia: P. Blakiston's Son & Company. 1920. Price, \$4.

The author has taken great pains in his description and segregation of data in his book. The general method of studying micro-organisms is carefully, logically and fully set forth. In fact, in my opinion, the only general fault of the author is that he goes into more detail than the average student of pharmacy could hope to digest, and at times would be apt to be discouraged on account of his inability to absorb such details.

In the chapters on Bacteria in the Industries, Yeast & Moulds and Microscopical, Analytical and Bacteriological Laboratory, the author enters into detailed discussion on such subjects as the difference between sake and beer, the Howard Method, etc., all highly specialized subjects, admirable as an original paper, but in the writer's opinion, out of place in a work of this type. However, I believe this book, in spite of these minor faults, has its place in any laboratory in which the science of bacteriology is practiced.

C. S. A.

Diagnosis and Treatment of Brain Injuries. By Wm. Sharpe. Philadelphia and London: J. B. Lippincott Company. 1920.

A seven hundred and fifty page book including many case histories. Over two hundred pages are devoted to a consideration of acute and chronic brain injuries in new-born babies and children. The author is a strong advocate of the sub-temporal decompression for the relief of intracranial pressure. He emphasizes the value of the ophthalmoscope and the spinal manometer in determining its presence.

The technic of the operation is that developed and practiced by Dr. Harvey Cushing. The principles advocated as governing treatment are those generally recognized although one gains the impression that the author leans more to the operative side of treatment than most neurological surgeons. The recommendations for sub-temporal decompression in cases showing the effects of old birth hemorrhages should be accepted with some reservation, pending confirmation by the experiences of others. With the exception of the case histories, the book could be considerably condensed and repetition avoided.

H. C. N.

Basis of Psychiatry. By Albert C. Buckley. 447 pp. Illustrated. Philadelphia and London: J. B. Lippincott Company, 1920.

This is a text book on Psychiatry designed especially for medical students. The subject is approached from a biological standpoint. Following this biological chapter is a psychological introduction which is in turn followed by chapters on etiology, symptomatology and examination methods which conclude the first part.

The second part deals with the various groups of insanities in detail. The work is a satisfactory and comprehensive review of the subject, although the limited size necessarily makes full consideration impossible. In view of the necessary condensation it is strange that so much space should be allotted to Wassermann technique, a subject not more bound up with psychiatry than with another department of medicine.

There are good bibliographies at the chapter ends and a useful glossary. Proof was apparently hurriedly read. On page 211 the heading belies the text. Huntington on pages 142 and 219 becomes Huntingdon on page 409 and in the

index. The book makes a very favorable impression and may be recommended as a good guide for student and practitioner. E. W. T.

A Manual of Pathology. By Guthrie McConnell, M. D., Associate in Pathology Western Reserve University, Medical School, Cleveland, Ohio. Fourth Edition. Thoroughly revised. 12mo. volume of 611 pages, with 18 illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$4.50 net.

If there is any virtue in "rapidly acquiring the salient point" of such a subject as pathology this manual, as evidenced by its continued appearance, has some merit. As its preface states, "no attempt is made to present the several views . . . of any one subject." J. O.

Physiology and Pathology of the Cerebrospinal Fluid. By William Boyd. New York: Macmillan Company. 1920.

The author states that "the object of this book is to present some of the fascinating physiological problems connected with the cerebrospinal fluid, and to show how they are related to the pathological problems which more directly concern the clinician."

The book contains more than this. Part one takes up the anatomical considerations, the origin and destination of the fluid, circulation of the fluid, functions of the cerebrospinal fluid, pressure of the cerebrospinal fluid, lumbar puncture, physical properties, chemical composition, cytology, Wassermann reaction, colloidal gold reaction, bacteriological methods.

Part two takes up the spinal fluid findings in special pathological conditions, meningitis, syphilis of the central nervous system, organic disease of the brain, organic disease of the spinal cord, some of the mental diseases, general disease; and the last chapter is devoted to therapeutics.

The style is clear and concise, and there are very many appended references.

The book will doubtless find a useful place in the office and laboratory.

E. V. K.

Treatment of Wounds of Lung and Pleura. By Eugenio Morelli. 214 pp. Illustrated. Boston: W. M. Leonard, 1920.

In this book, which is to the surgeon well worth reading, is set forth the principle of treating wounds of the lung with artificial pneumothorax. If hemothorax is present, a pneumothorax of from six to twenty centimeters of water pressure is substituted, and a pleural lavage with chlorasol is made before the germs invade the pleura. In open pneumothorax the hole is plugged with a balloon. His mortality of but 5 per cent in over 100 unassorted cases, and the occurrence of empyema in but 2 per cent are in favor of the method. Pneumothorax, it is claimed, lessens hemothorax, pleural adhesions, pulmonary abscesses and pyothorax.

The operative treatment of lung wounds is not discussed, and the reader must edit for himself a bias toward conservatism, which runs through the book. What is probably an unsafe doctrine here is that with this treatment foreign bodies, even of fair size, will become safely encysted in the lung. For empyema double-walled balloon drains are utilized in a way very similar to Mozingo's method. Morelli shows that Forlanini in 1880 proposed the main principles of the latter method, though without the refinement of technique.

After giving a detailed account of the clinical pathology and physio pathology of wounds of the lung, and showing the value and principles of the production of pneumothorax, a description of the method and several apparatuses for using it are given. The exact indications for treatment are laid down for the various types of lung injuries, and a chapter is devoted to clinical examination in cases

of lung injury. Sixty-five case histories are reported and discussed and illustrated with thirty X-ray pictures, showing the final results. After reading the book one cannot but be impressed with the thoroughness of the work, the attention to detail, and the value of the principles expounded. The time and patience of the reader is presumed upon by a superfluity of words and repetitions, but with all he is rewarded by several new principles for thought, and a valuable method of treatment.

S. B.

A Text-Book of Pathology. By William G. MacCallum, M. D., Professor of Pathology and Bacteriology, Johns Hopkins University. Second Edition, Thoroughly Revised. Octavo volume of 1155 pages, with 575 original illustrations. Philadelphia and London: W. B. Saunders Company, 1920. Cloth, \$10 net.

The second edition of MacCallum's text-book is an extension of the early edition, particularly in those lines whose importance was emphasized by the war. The direct influence of modern warfare as exemplified by the sections on war gas-poisoning and surgical shock are considered, as well as those miseries and diseases such as epidemics and the effects of malnutrition, which are the back wash of war.

The sections particularly revised are those covering shock, acid-base, equilibrium, hydrocephalus, immunity in tuberculosis, meningococcal infection, pneumonia after measles, influenza, cholera, leprosy and aprasitic infections. As the author has been intimately concerned with the advances made in our knowledge of many of these subjects, they are particularly well handled.

J. O.

Diseases of Nutrition and Infant Feeding. By John Lovett Morse and Fritz B. Talbot. Second edition; 384 pages. New York: MacMillan Company, 1920.

The physician who has to deal with children and infants should have at least two texts for reference. One of these should deal with the general principles and practice of pediatrics. The other should be a compendium of the basic facts relating to the special problems of infancy and childhood. The first of these needs is met by several of the standard texts, of which that by Holt and Howland is perhaps the most widely known. The second need is met best, at least in English, by Morse and Talbot.

This admirable book gives a remarkably complete review of the known facts on physiology and metabolism; the chemistry of human and cow's milk; the methods of sterilization and pasteurization; the methods of milk modification; the bio-chemical aspects of rickets, scurvy, spasmophilia and acidosis; the bacteriology of the intestine. References to the original literature are given liberally.

The great value of the book consists in the mass of original data which has been brought together. The authors also present the subject of infant feeding in general as it is accepted by the Boston school of pediatricians, but not so unreservedly elsewhere. The feeding schedule on page 202, calling for feedings at intervals of 2½ to three hours between four weeks and four months and not mentioning the four hour interval until the ninth month, is not in harmony with modern feeding practice and should certainly be revised.

It is worth repeating that this book should be on the shelves of every pediatricist and of every general practitioner who attempts to keep in touch with modern pediatrics.

H. K. F.

Diabetes. By Philip Horowitz. 196 pp. Illustrated. New York: Paul B. Hoeber. 1920. Price, \$2.

Books on diabetes ought to be written for lay people, but they should be arranged so that they can be understood without an intensive type of study. There must be art in the diagrammatic illustration of articles else there would not be specialists in this line. Horowitz' book by way of diagrammatic illustration is far from helpful and for use by a layman far from useful. A physician treating diabetes should know far more than the book contains and a layman should have it presented to him in a far simpler and more easily understood way.

P. K. B.

New and Non-Official Remedies. Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1920. Cloth. Price, postpaid, \$1; pp. 72. Chicago: American Medical Association, 1921.

While New and Non-official Remedies consists in part of descriptions of those proprietary medicines which the Council deemed worthy of consideration by the medical profession, the Annual Reports of the Council on Pharmacy and Chemistry describe the preparations which the Council finds unworthy of recognition. In addition, these annual reports contain other announcements of the Council.

The present volume contains a number of interesting reports. Thus we find a statement which makes it clear that many of the large pharmaceutical houses are definitely opposed to the work of the Council and will remain antagonistic until a very large proportion of the medical profession will give the Council their active support. The volume also contains a report on some digitalis preparations which the Council examined and declared to be pharmacopial digitalis products and therefore do not require the control of the Council.

Of the reports on proprietary medicines found unacceptable for New and Non-official Remedies there are reports on the following which, because of the publicity given the products by their exploiters, will be of special interest to physicians: Platt's Chlorides, Syrup Leptinol (formerly Syrup Balsamea), Sukro-Serum, Spirocide, Libradol, Supsalvs.

Of considerable interest are reports on a number of products which were admitted to New and Non-official Remedies on the basis of evidence which at the time seemed to indicate the products to have therapeutic merit, but which did not stand the test of time and which therefore have been omitted from the 1921 edition of New and Non-official Remedies. These reports give evidence that great care is taken to keep New and Non-official Remedies up to date.

Those who are not familiar with the methods of the Council in the examination of new medicaments or who may even have been inclined to look upon the acceptance or rejection of a medication by the Council as a somewhat perfunctory procedure, should read the report of "Chloryptus"—a chlorinated eucalyptus oil. Its proprietor believed it to be a most efficient wound antiseptic. He presented to the Council many lengthy reports of laboratory tests and of clinical trial. The Council found the evidence inconclusive and refused recognition to the product. The discoverer of Chloryptus apparently has accepted the conclusion of the Council—at all events it is not being pushed—and thus many a physician is spared the temptation of experimenting with a new drug which in the end will but add to his long list of medicaments which have been tried and found wanting.

Diseases of the Ear. By Philip D. Kerrison. 596 pp. Illustrated. 2nd ed. Philadelphia and London: J. B. Lippincott Company. 1921.

In this second edition, the author has added to the first edition of his book by going into more detail in regard to the finer points of his topic; namely, diseases of the labyrinth and suppurative lesions of the brain and meninges. This field is well covered and is a welcome review of the recent advances in this line. The book as a whole is conservative and should be of help to aurists as a reference book. H. A. F.

County Societies

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held May 23. Dr. Clifford W. Mack was responsible for the program, which was as follows:

1. Case reports.
2. Applied Psychology in the Public School System—E. V. Dickson.
3. Mental Disease and Mental Defects in Relation to Public Health—C. W. Mack.
4. Symposium on "Legarthic Encephalitis and Its Sequelae"—C. L. McVey, Q. O. Gilbert, R. J. Nutting.

The following new members were admitted: Sheridan A. Lockwood, 3210 East Fourteenth Street, Oakland.

Jewel Fay, Livermore Sanitarium, Livermore, Edward Purcell, 748 Adeline Street, Oakland. J. M. Ward, 2320 East Fourteenth Street, Oakland. L. L. Sherman, Hutchinson Building, Oakland. E. M. Lundegaard, 2831 Webster Street, Oakland.

Dr. Florence Sylvester will be in charge of the June meeting, which will be held on the third Monday in June.

Thirty-nine members of the Alameda County Medical Association attended the State Convention at San Diego, and a number are now in attendance at the American Medical Association meeting in Boston.

LOS ANGELES COUNTY

The scientific meeting of the Medical Society of Los Angeles County were of unusual interest during the month of May.

Due to the inability of the members to find a parking space for their automobiles, the meeting place has again been changed from the Union League Club to the auditorium of the Friday Morning Club.

On May 5 Dr. Granville MacGowan presented a paper on Bloodless Surgery of the Posterior Urethra; Dr. H. W. Spiers discussed the merits of the Heterogenous Bone Transplant in Orthopaedic Surgery, and Dr. Charles L. Lockwood spoke of the Newer Aspects of Chest Surgery, illustrating his discussion with lantern slides.

The regular meeting on May 19 was marked by the presentation by Dr. John L. Tierney of St. Louis, Mo., of the Diagnostic Signs and Treatment of Ductless Gland Disorders, with particular reference to the pituitary. The series of pictures used by Dr. Tierney at the annual meeting of the State Society were shown.

Dr. F. M. Barnes, of St. Louis, discussed Ductless Gland Disorders from a neurological viewpoint, and Dr. A. B. Cooke, of Los Angeles, spoke on hyperthyroidism.

Dr. J. M. T. Finney, of Johns Hopkins, delivered the first Osler Memorial Lecture before the County Medical Society, on April 25, 1921.

At a special meeting on May 30, 1921, Dr. George Tyron Harding, of Columbus, Ohio, brother of President Harding, discussed the problems of the nervous ex-soldier.

The committee on the State of the Association dined at the Los Angeles Athletic Club on May 5, 1921, at which time the chairmen of the standing and special committees reports for the preceding year were presented. The report of the committee on Los Angeles County Hospital was of particular interest, for it has been largely through their efforts that appointments on the attending staff of this institution have been placed on a civil service basis.

The necessity for a permanent meeting place of the Society is an ever recurring one. A movement is now on foot to secure from each member a contribution toward financing of a building for this purpose. To paraphrase the immortal Pepys, "of subscriptions, taxes and like expenses, there is no end," but the need is so great that it will undoubtedly be necessary for each member of the Society to do his part toward making a success of this venture.

ORANGE COUNTY

Installation of the new officers for the Orange County Medical Society was held at Saint Ane's Inn, Santa Ana, on May 3.

This meeting was the largest and most successful held in the history of the county.

Dr. Wilfred C. Dubois, the retiring President, presented a paper upon "Crime and its Cause."

The newly elected officers of the Society for the coming year are as follows: President, Dr. J. H. Lang, Fullerton; Vice-President, Dr. Arthur H. Doman, Orange; Secretary, Dr. W. C. Mayes, Santa Ana; Treasurer, Dr. D. C. Cowles, Fullerton; Librarian, Dr. C. D. Ball, Santa Ana; Assistant Editor, Dr. C. R. Lane, Santa Ana.

PLACER COUNTY

Report by Robert A. Peers, Secretary

The Placer County Medical Society held its regular meeting in the Masonic Hall, at Auburn, Saturday evening, June 4, 1921.

There were present the following members: Doctors E. E. Ostrum, H. N. Miner, F. E. McCullough, Bradford Woodbridge, E. H. Bryan, J. L. Fanning, G. H. Fay, C. J. Durand, J. G. Mackay, J. W. Nielsen, R. F. Rooney and R. A. Peers.

The following visitors were also present: Dr. Poage, Colusa; Dr. Wheeler, Lincoln; Dr. W. E. Briggs and Dr. C. B. McKee, Sacramento; Dr. Dunbar, Roseville; Dr. R. J. Nicholls, Auburn; Dr. Law, Loomis; Dr. O. L. Barton, Loomis; Dr. S. J. Shipman and A. G. Foord, Colfax; and Dr. W. A. Whittington, Weimar.

Dr. C. B. McKee, of Sacramento, read a paper entitled "The Acute Infections of Nose, Throat and Ear," which was followed by a paper from Dr. William Ellery Briggs on "Focal Infections of the Nose and Throat." Both papers were well discussed.

Dr. Horace B. Dean, of Weimar, was elected to membership in the Society.

SAN JOAQUIN COUNTY

The regular monthly meeting of the San Joaquin County Medical Association was held at the San Joaquin General Hospital at French Camp, Dr. Linwood Dozier presiding. Sixteen members were present.

Dr. W. Friedberger was speaker of the evening, and discussed the method of handling surgical conditions as they have presented themselves at the San Joaquin General Hospital.

After adjournment, Dr. Friedberger showed the members about the hospital, and later served a chicken dinner. The members all voted Dr. Friedberger their appreciation for his learned discourse; then thanks for his courteous reception.

Department of Pharmacy and Chemistry

Edited by FELIX LENGFELD, Ph. D.

Help the propaganda for reform by prescribing official preparations. The committees of the U. S. P. and N. F. are chosen from the very best therapeutists, pharmacologists, pharmacognosists and pharmacists. The formulae are carefully worked out and the products tested in scientifically equipped laboratories under the very best conditions. Is it not plausible to assume that these preparations are, at least, as good as those evolved with far inferior facilities by the mercenary nostrum maker who claims all the law will allow?

Silver Arsphenamine—Sodium Silver Arsphenamine.—The sodium salt of silver-diamino-dihydroxy-arseno-benzene, containing approximately 20 per cent of arsenic and approximately 15 per cent of silver. The action and uses of silver arsphenamine are essentially those of arsphenamine (see New and Non-official Remedies, 1921, p. 41). Its claimed advantage over other arsphenamine preparation is said to be due to the silver, which improves the chemo-therapeutic index. In the presence of organic diseases of the heart, aneurism, aortitis, as well as other parenchymatous diseased conditions of the glandular structures, silver arsphenamine should be used with great caution, and in small doses. The dose of silver arsphenamine is from 0.1 to 0.3 gm. for adults. To administer silver arsphenamine, the product is dissolved in sterile, distilled water, without application of heat and without shaking, and then diluted with 0.4 per cent sodium chlorid solution to make 20 cc. per 0.1 gm. of silver arsphenamine (Jour. A. M. A., May 7, 1921, p. 1312).

Eruption After Luminal.—Luminal has been reported by two authors as producing an exanthem simulating urticaria; by two others, an eruption simulating measles; by three, as simulating scarlet fever; and by two, as an unclassified drug eruption (Jour. A. M. A., May 28, 1921, p. 1517).

Lash's Bitters.—A physician reports that he was called to see a patient who had consumed ninety-one bottles of Lash's Bitters in thirty-six days. Previously the patient had consumed Wine of Pepsin in about the same amount. The amount of Lash's Bitters consumed is equivalent to about twenty ounces of straight whisky daily. The label on the Lash's Bitters' bottle declares, "Guaranteed free from habit-forming or injurious drugs" (Jour. A. M. A., April 9, 1921, p. 1029).

Cod Liver Oil in Rickets.—For many years cod liver oil has been regarded almost as a specific against rickets in children. During recent years it has been made reasonably certain that the administration of cod liver oil alters the calcium balance in such a manner that calcium will be retained in the body, and that it increases the capacity of rachitic children to take up and hold calcium. Since the beneficial effects of cod liver oil on rickets may be due to its liberal content of vitamine A, frequently described as the Fat-Soluble food accessory, it is interesting to know that crude unrefined cod liver oil may be 250 times as rich as butter in vitamine A, and that samples of refined oil, although not so active as the crude oil, were also far superior to butter in the vitamine potency. The ease with which the Fat-Soluble A Vitamine of cod liver oil is destroyed by reagents and drastic manipulations make the various "refinements" of cod liver oil products sold as proprietary preparations even more reprehensible than they have seemed in the past (Jour. A. M. A., April 9, 1921, p. 1009).

The Council on Pharmacy and Chemistry holds that intravenous medication generally is not as safe as oral medication, even with relatively harmless substances, and that it does not give "improved clinical results" except under rather narrowly confined circumstances, namely, if the drug

undergoes decomposition in the alimentary tract, if it is not absorbed, if it causes direct local reactions, or if time is an urgent element. The Council has recognized intravenous preparations which satisfy these requirements. The Council concluded that these solutions did not meet these conditions (Jour. A. M. A., April 16, 1921, p. 1120).

Benzyl Benzoate.—This drug has been widely accepted, chiefly on the basis of experiments on excised organs as an efficient antispasmodic agent for smooth muscle in various regions. Few observations have been made, however, as to its action on intact organs. Recent investigation has raised serious doubt as to the efficiency of benzyl benzoate as an antispasmodic for the intact uterus, intestines, stomach and bronchi. Large doses injected into dogs intravenously (so that the drug might act on the smooth muscles of these organs) gave almost totally negative results. This investigation suggests that allowances should be made for impressions, reflex influences, the psychic state and natural recovery before drawing definite conclusions as to the beneficial effect of benzyl benzoate, especially in such capricious conditions as hiccough, whooping cough, asthma and dysmenorrhea, for which it has been advocated (Jour. A. M. A., April 30, 1921, p. 1252).

Conversation with many physicians, who have used benzyl benzoate freely, shows that not one of these feel that he can give benzyl benzoate in any particular case, with any assurance that he will get the desired effect. Practically every physician who has used benzyl benzoate reports failure in most cases in which it has been used, although now and then it does seem to have given good results. However, it has failed in practically identical cases. The introduction of benzyl benzoate into medicine was announced as a triumph of scientific medicine, and its use has been almost as scientific as carrying a buck-eye in the pocket for rheumatism. Laboratory experiments and a few clinical observations have shown that benzyl derivatives might be useful in certain cases. The drug was sprung upon the medical profession without sufficient clinical evidence regarding its use and its limitations. One manufacturing concern presented it to the public, and as benzyl benzoate is not a new compound, other firms soon took it up with the result that it has been recommended for everything, excepting dandruff and in-growing toe nails. Now, benzyl benzoate has a little brother, benzyl succinate, and soon we may expect other additions to the family, such as benzyl tartrate, benzyl malate, benzyl salislate, etc. It is not claimed that these compounds are any more active than benzyl benzoate, but simply that they are easier to administer and more readily tolerated. It requires no prophet to see that all these benzyl derivatives will soon be in the discard unless some carefully controlled work shows just what they are good for.

Salicylic alcohol stands in marked contrast to benzyl benzoate. The work of Macht seems to indicate that benzyl alcohol under certain conditions is an excellent local anesthetic and a substitute for novocain. However, it has not become popular, clinically, perhaps because not sufficiently powerful.

Pharmacologists thought that substituted benzyl alcohols might prove more active, and experimental work seems to indicate that salicylic alcohol is more active, and may become a useful remedy. The Calco Chemical Company, which has undertaken its manufacture on a large scale, will not allow it to get into general practice until experimental work has reached the proper stage. It will supply small quantities of alcohol to physicians who desire to experiment with it. It certainly deserves the credit for this course, and it is to be hoped that salicylic alcohol will do everything expected of it.

Clinical Department

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS

1921 Series. Case No. 7, 1920. Male, American. Age, 6 months.

No. 6482. E. V.

Complaint—Diarrhea, convulsions, fussiness.

Family History—Mother and Father living and well. Four sisters living and well. No miscarriages. Family history entirely negative.

Past History—Full term baby, delivery spontaneous, following a short, easy labor. No cyanosis or injury at birth. Birth weight 6 pounds. He was breast fed for five weeks, then, because of the disappearance of the breast milk, was placed on a whole milk formula. While on breast milk the child's condition had been very good, a gradual gain in weight with no diarrhea nor vomiting. Following the change to a milk formula he developed constipation with marked flatus, which gradually progressed in severity. After remaining on this formula for two months he was changed to a sweetened condensed milk formula, but the condition became worse and he became very irritable. After an interval of two weeks he was returned to a whole milk mixture and remained on this until two weeks previous to entrance, at which time he began to have spasms at hourly intervals, these lasting two to three minutes at a time. At the end of twenty-four hours the spasms ceased, none appearing later, no diarrhea nor vomiting. Immediately all feedings were stopped and he was given albumin water for a few days, then placed on a whey mixture. Upon this latter he developed a diarrhea or five to six stools daily containing much mucus and a few curds, also vomiting. Loss of weight was not great until the last two weeks previous to entry, during this period he lost two pounds. No fever was noted. On entrance, January 21, 1920, his weight was nine and one-half pounds.

Physical Examination—Showed a poorly nourished and poorly developed infant of 6 months, very toxic. Skin was very dry and dusky in appearance, tissue turgor very poor with very little subcutaneous tissue. He lay with arms and legs flexed and spastic with a marked carpo-pedal spasm. He was very irritable when touched, reacting very readily to any stimulation. Head: some bossing of frontal and parietal bones with slight cranio-tabes, anterior fontanel opened and somewhat sunken. Eyes, ears, nose and throat negative. There was no neck rigidity. Chest showed beginning rosary of the ribs, with a slight Harrison's groove. Heart and lungs were negative. Abdomen somewhat sunken, no rigidity, no masses nor points of tenderness. Liver edge was palpable, spleen not felt. Genitalia negative. Extremities slight epiphyseal enlargement, marked carpo-pedal spasm with flexion of extremities. Reflexes: knee jerks hyperactive but equal, no Brudzinkski nor Babinski, no ankle clonus. Positive Chvostek's sign.

Laboratory Examinations—Von Pirquet, Wassermann and urine negative. Blood count showed a reduction in hemoglobin, otherwise negative. Electrical reactions:

| | | | | |
|----------|----------|----------|----------|----------|
| Entrance | A. O. C. | C. C. C. | C. O. C. | A. C. C. |
| ma. | 1- | 1 | 2 | 2+ |

Diagnosis—Tetany, made from the cardinal symptoms, positive Chvostek's sign, carpo-pedal spasm and hyperexcitability to galvanic current. This condition, as is usually the case, was associated with rickets (cranio-tabes, enlarged epiphyses, etc.). Superimposed on this was acute intoxication due to the marked water loss from the diarrhea and vomiting.

Discussion of Treatment—Because of the gastrointestinal disturbance, which was probably due to the failure to assimilate the food taken, a feeding high in protein, low in fat and carbohydrate was commenced. On this feeding the diarrhea and vomiting ceased, so carbohydrates were gradually added and later fat until the child was placed on a rational feeding for his age, and this was very well assimilated. During a two days' observation the tetany increased so calcium lactate in five grain doses four times daily by mouth was started. After four days the symptoms seemed somewhat improved although marked spasticity was still present with carpo-pedal spasm. Electrical reactions:

| | | | |
|----------|----------|----------|----------|
| C. O. C. | A. O. C. | C. C. C. | A. O. C. |
| 1 | 2 | 2.5 | 4 |

still showed extreme hyperexcitability with both anodal and cathodal reactions reversed. Calcium lactate was stopped and calcium chloride commenced in seven and one-half grain doses six times daily. At the end of forty-eight hours marked improvement was noted, less spastic and less irritable. At the end of ten days on this drug the electrical reactions were:

| | | | |
|----------|----------|----------|----------|
| C. C. C. | A. O. C. | A. C. C. | C. O. C. |
| 3 | 4 | 7 | 10+ |

and spasticity had practically disappeared. At the end of three weeks the calcium was discontinued with no recurrence of symptoms on discharge, a month and a half later. Cod liver oil was not started until the symptoms of tetany had practically disappeared.

Conclusion—Although the blood calcium was not done on this patient undoubtedly it was markedly reduced as shown by the marked improvement upon administration of calcium by mouth. Not only the symptoms were markedly improved but also the rapid change in the electrical reactions were noted. It was also noted that improvement was more rapid upon calcium chloride than upon calcium lactate. The diet in this case had been fairly rational and no etiological cause for the condition could be found. The patient was discharged at the end of two and one-half months in the hospital in very good condition, having gained three and one-half pounds in weight and there being no remaining signs of the tetany.

Notices

THE CALIFORNIA STATE ASSOCIATION OF PHYSIOTHERAPISTS

The organization of this Association, along the lines discussed elsewhere in this number of the Journal, has been completed, and it is now functioning as a member of the Section on Technical Specialties of the Medical Society of the State of California, and of the League for the Conservation of Public Health.

The officers of the association are as follows: Hazel Furschgott, President; Florence Atkinson, Assistant Secretary-Treasurer; Margaret Stevenson, Vice-President.

Executive Committee—The above-named officers and Ethel Johnson, Harriett Bosworth, Marie Easson.

VACANCIES IN THE MEDICAL CORPS OF THE NAVY

The United States Navy is offering an attractive opportunity for young doctors to join the Medical Corps. There are many vacancies in the Medical Corps available to young graduates and to students who have not had their hospital training

with the assurance of a year's internship in one of the large Naval Hospitals, as well as a course of study at the Naval Medical School, Washington, D. C.

It is believed that the first two hundred entrants will be in a particularly favorable position for subsequent advancement. The Navy Department has recently authorized the examination of doctors under thirty-two years of age. The only professional examination will be in General Medicine, General Surgery, Hygiene and Sanitation.

The successful candidate will immediately be commissioned as Lieutenant (junior grade) in the regular permanent Medical Corps of the United States Navy. The pay and allowances for this rank are over \$2400. In addition to this there is a temporary bonus of \$600. Advancement in pay and rank continue to the age of retirement—sixty-four years—when an allowance of three-fourths the last pay is made for life. Or, after thirty-years service retirement may be requested with three-fourths pay. One is always assured comfortable and healthful surroundings and care with remuneration in case of incapacity through illness or accident.

Further information may be obtained by request from the Surgeon General of the Navy, Washington, D. C., or locally in a more personal manner upon interview with Captain C. N. Fiske or Lieutenant R. H. Hunt of the Medical Corps, U. S. Naval Training Station, Goat Island, San Francisco, California.

CERTIFICATES TO PRACTICE THE HEALING ART

The following table, furnished by the Board of Medical Examiners, gives the number and classification of licentiates whose certificates are in good standing for the year 1921:

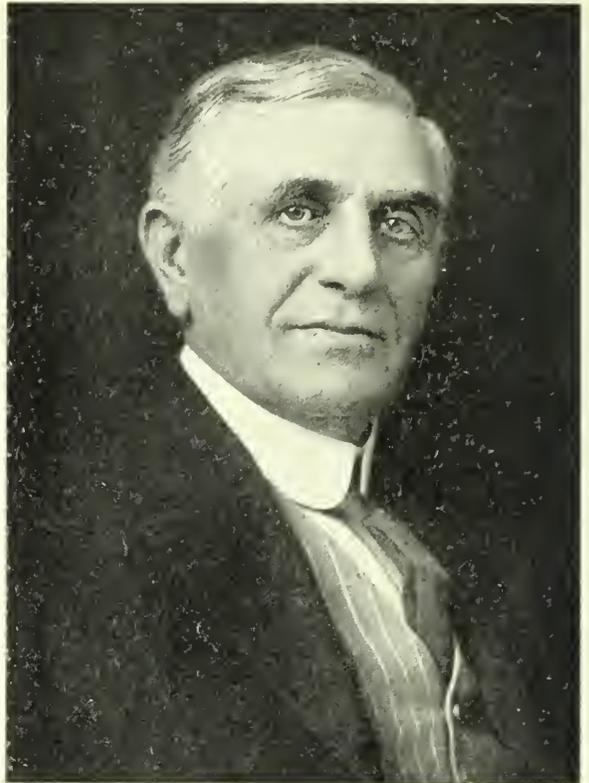
| | California | Extra States | Total |
|-------------------------|------------|--------------|-------|
| Physicians and surgeons | 5,868 | 768 | 6,636 |
| Osteopaths | 471 | 47 | 518 |
| Naturopaths | 53 | 6 | 59 |
| Drugless | 172 | 10 | 182 |
| Chiropodists | 191 | 2 | 193 |
| Midwives | 98 | — | 98 |
| | 6,853 | 833 | 7,686 |

PACIFIC COAST ASSOCIATION OF ANESTHETISTS

A Pacific Coast Association of Anesthetists has been organized with the Northern California Society, the Southern California Society and the Society of Seattle, Washington, as charter members. Dr. George P. Waller of Los Angeles was elected president, Dr. Mary E. Botsford of San Francisco, vice-president, and Dr. Eleanor Seymour of Los Angeles, secretary-treasurer. A constitution and by-laws was adopted. A resolution calling for a section in anesthesiology in the American Medical Association was read and endorsed. A resolution calling the attention of the American College of Surgeons to the unethical practice of certain of their prominent members and recognized hospitals in using lay anesthetists was unanimously adopted. A resolution of protest was ordered forwarded to the Ohio State Society, Dr. F. H. McMechan and the Anesthesia Committee of the Ohio State Medical Society regarding the biased report recently rendered.

Obituary

It is with profound regret that we record the death of Dr. William G. Cochran, on May 4, 1921, at his residence at 1550 West Second Street, Los Angeles, California. Dr. Cochran has been a



DR. WILLIAM G. COCHRAN

resident of this city for forty years, having graduated from Rush Medical College in 1869. He was a veteran of the Civil War, having served three years, and was wounded in the Battle of Prairie Grove, in Arkansas. As a physician and financier, he was equally successful. The Southern California Medical Society mourns him as one of its organizers and its first secretary. As a member of Los Angeles Board of Education and trustee of the Whittier State School, he performed his duties as a citizen, and as one of the founders and president of the State Mutual Building and Loan Association, he justified the confidence of his friends in his business ability and judgment. He retired from active practice but a few years ago, but retained his interest and was an active participant in the affairs of the corporation, of which he was the head. He leaves a widow, and one son—Dr. Guy Cochran, together with more friends than falls to the lot of the average man, who deeply mourn his death.

Deaths

- COCHRAN, WM. G.—A graduate of Rush Medical College, Ill., 1869, and Jefferson Medical College, 1880. Died in Los Angeles, May 4, 1921.
- CONE, FRANK BROTHER—Died in San Francisco, May 12, 1921. Was a graduate of Medical College of Ohio, 1884. Licensed in California, 1887. Age, 67.
- HAAS, JULIUS—Died in Altheim (Oakland), California, May 5, 1921. Was a graduate of University of Australia, 1861. Licensed in California, 1876. Age, 85.
- SHERMAN, HARRY MITCHELL—Died in San Francisco, May 16, 1921. Was a graduate of College Physicians, New York, Medical Department, Columbia University, 1880. Licensed in California, 1885. Was president of the Medical Society, State of California, in 1916.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
 BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Editor and Secretary : : : : : W. E. MUSGRAVE, M. D.
 Managing Editor : : : : : CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

| | | | |
|--------------------|-----------------------------------|----------------------|---------------------------------------|
| Alameda..... | Dr. Ruby L. Cunningham, Berkeley | San Bernardino..... | Dr. C. L. Curtiss, Redlands |
| Butte..... | Dr. Edward Baumeister, Chico | San Diego..... | Dr. Robt. Pollock, San Diego |
| Contra Costa..... | Dr. P. C. Campbell, Richmond | San Francisco..... | Dr. Le Roy Briggs, San Francisco |
| Fresno..... | Dr. G. L. Long, Fresno | San Joaquin..... | Dr. Dewey R. Powell, Stockton |
| Glenn..... | Dr. W. H. Walker, Willows | San Luis Obispo..... | Dr. Paul K. Jackson, San Luis Obispo |
| Humboldt..... | Dr. L. P. Dorais, Eureka | San Mateo..... | Dr. A. L. Offield, Burlingame |
| Imperial..... | | Santa Barbara..... | Dr. Robert W. Hartwell, Santa Barbara |
| Kern..... | Dr. Edward R. Guinan, Bakersfield | Santa Clara..... | Dr. Chas. Richards, San Jose |
| Lassen-Plumas..... | | Santa Cruz..... | Dr. J. B. Cutter, Watsonville |
| Los Angeles..... | M. Creamer, Los Angeles | Shasta..... | Dr. F. Stabel, Redding |
| Marin..... | Dr. W. F. Jones, San Rafael | Siskiyou..... | |
| Mendocino..... | Dr. O. H. Beckman, Fort Bragg | Solano..... | Dr. A. V. Doran, Vallejo |
| Merced..... | Dr. Brett Davis, Merced | Sonoma..... | Dr. N. Juell, Santa Rosa |
| Monterey..... | Dr. T. C. Edwards, Salinas | Stanislaus..... | Dr. E. F. Reamer, Modesto |
| Napa..... | Dr. Robt. Crees, Napa | Tehama..... | |
| Orange..... | C. R. Lane, Santa Ana | Tulare..... | Dr. J. T. Melvin, Porterville |
| Placer..... | Dr. R. A. Peers, Colfax | Tuolumne..... | |
| Riverside..... | Dr. Paul E. Simonds, Riverside | Ventura..... | Dr. C. A. Jenson, Ventura |
| Sacramento..... | Dr. S. E. Simmons, Sacramento | Yolo..... | Dr. Frances L. Newton, Woodland |
| San Benito..... | | Yuba-Sutter..... | |

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

AUGUST, 1921

No. 8

ORTHODIAGRAMPHY

Renewed interest in an old method promises to make the X-ray as indispensable an aid in the diagnosis, prognosis and control of certain circulatory diseases as it has been for some years in the investigation of gastro-intestinal disorders. The French school of radiologists, represented especially by Vaquez and Bordet¹ of the Faculty at Paris, have succeeded by elaboration of the orthodiagraphic method in elevating the orthodiagraph to the dignity of a clinical instrument of precision.

Orthodiagraphy has been for long neglected in this country; it has a technique which requires care and precision to make its results valuable, and the shortcut of teleradiography has appealed to most American radiologists as an easier, if a far less efficient, method of approach in cardiac diagnosis.

Orthodiagraphy is the use of the central ray of the X-ray bundle to project accurately upon the fluorescent screen the exact size and outline of any object opaque to it. It is obvious that in deducing the size of an object from the size of its shadow, whether that shadow be cast by ordinary light or by the X-Ray, that the pencil of rays projecting the shadow must be parallel in order to avoid distortion and magnification. The method of obtaining the central rays of an X-Ray bundle is comparatively simple and the recording of the shadows cast by them is a matter of painstaking care, rather than of highly developed skill. Teleradiography aims to achieve this result by removing the tube so far from the patient that the rays as they strike him are practically parallel, and hence cast shadows

similar in size and shape to the objects which lie in their path. The method is unfortunately limited to plates taken in the routine antero-posterior position and does not lend itself to procuring tracings at any angle and while the patient is under easy and continuous observation as does the orthodiagraphic screen technique.

Vaquez and Bordet, in their two monographic studies of the heart and the great vessels at its base, and using the orthodiagraph as their method of approach, have more than laid the foundation for a new advance upon the problems of the clinical pathology of the central circulatory apparatus. They are able, among other things, to demonstrate an early ventricular hypertrophy by a simple calculation based on orthodiagraphic findings long before ordinary clinical methods could hope to detect it. They have shown the comparative ease with which the dilatation of a single chamber, the left auricle for instance, can be determined positively by tracings made in the oblique positions; findings necessarily of extreme value and suggestiveness when there is a question of early organic pathology in the heart. The method is of no less value in determining the nature and observing the progress of lesions of the aorta. Aside from the accurate mensuration which it makes possible, it facilitates the differential diagnosis between the various inflammatory and degenerative changes that are liable to attack the coats of that vessel.

Vaquez and Bordet have introduced to the clinical world a method which, in skillful hands and properly controlled, may take rank with such sacrosanct instruments as the internist's fingers and his stethoscope as aids and illuminants on the sometimes dark and dubious road of cardiac diagnosis.

¹ Le Coeur et l'Aorte and Radiologie des Vaisseaux de la Base du Coeur, by H. Vaquez et E. Bordet. Published by J. B. Bailliere et Fils, Paris.

EXTENSION WORK OF THE STATE MEDICAL SOCIETY

Some two years ago the Council of the State Medical Society authorized the establishment of an extension course of lectures. After very considerable effort the secretary was able to distribute throughout the State a list of special topics, with capable lecturers, which was made available to such constituent societies as desired to ask for it. A number of county societies have availed themselves of this opportunity and have had a number of lectures.

The Council feels that the results have been encouraging enough to further elaborate the extension work. The secretary's office is now preparing a list of subjects and lecturers who will be available for any county society upon appropriate invitation. In order that this list may be as complete as possible, all members of the society and all county societies who are interested in contributing to this program are requested to submit to the secretary's office before September a list of subjects with speakers who will be available upon invitation to go to any county society or any other meeting when asked to do so. Shortly after September first the subjects and speakers will be arranged in some convenient manner, published and submitted to every society in the State.

Secretaries of county societies are requested to bring this matter before one of their meetings and let the State secretary have a report of the county society's wishes.

GROUP MEDICINE

The idea of closer working alliance between groups of medical men has been much discussed by physicians and surgeons and specialists. It appeals to many, while others seem to see in it a possible influence tending toward commercialism and a greater misunderstanding between medical men than obtains today. All will agree that the advances in medicine have been so great that no one mind can master it in all of its details. A group of men concentrating their energies on different fields of medical knowledge and research can do more for the patient in many cases than can one mind, be it ever so versatile. If medical men choose to group themselves together in a united effort, they are only doing what other men have considered it necessary to do in other occupations. The idea of group practice is not as new as perhaps it may seem. Since the days of hospital organization, medical men have worked in groups, to the advantage of the public and themselves. If group practice is to be a permanent arrangement, it must be conducted on approved principles. The men outside the group in particular must be given help. In the smaller towns and in rural districts group medicine might make better laboratory facilities and better hospitals possible with less outlay of time and energy. It also has a bearing on State medicine. The best way to avoid State medicine is for the profession, by organization, to anticipate it, and group medicine is worthy of consideration in this connection. State medicine might not prove more satisfactory than State railroading.—(Abstract of editorial in Canadian Medical Association Journal, May, 1921.)

ETHICS OF ADVERTISING

The history of advertising by members of the medical profession is interesting. In early days it was the most advertised of all professions or vocations; in fact, medical men were leaders in methods of advertising and in the thoroughness with which these methods were followed up. Later there came a great reaction against public methods of personal publicity, and the profession went to the other extreme and did not permit advertising by any of the usual means employed by other professions and vocations. Neither of these extremes has proved satisfactory to the profession or to the public.

The restrictiveness of our ethics as they have stood for a long time is responsible for a variety of methods of personal promotion, some of which are of uncertain propriety and of questionable value to the man himself. The pendulum has again begun to swing away from the exclusiveness in publicity.

It probably is true, as it undoubtedly should be, that public advertising in lay periodicals and by circulars and other methods used in commerce never will be permitted by our profession. Certainly there ought to be an intermediate ground somewhere that would permit dignified ethical representation by institutions, organizations, groups and individual physicians to make their qualifications known to people who may desire their services.

It is interesting in this connection to call attention to the following resolution passed unanimously by the Council of the State Medical Society at their last meeting in Coronado:

"It was unanimously agreed that, in the opinion of the Council, the insertion of appropriately worded cards by physicians and other professional men in the advertising columns of the Journal is ethical, permissible and should be encouraged."

SILVER ARSPHENAMINE

It seems, from a review of the literature, that in silver arspenamine we have a more potent spirocheticide than any heretofore in use and one which should be used with the greatest care; it seems to represent a real therapeutic advance. It is presumed that the silver, for which spirochetes have a special affinity, serves as an anchor for the arsenic, and that therefore the drug, despite its lower arsenic content than arspenamine, is more active therapeutically. Animal experimentation seems to show that silver salvarsan, as it is called, is twice as effective as the old salvarsan and three times as effective as neosalvarsan.

The use of this silver-arsenic preparation seems, from the reports, to be attended with more danger than the older preparation. This danger is reflected in the dosages used, i. e., from 0.02 to a maximum of 0.25, in dilute solution. Anaphylactoid symptoms—redness and swelling of the face and buccal mucous membrane—pyrexia; cutaneous eruptions which are usually transient, and occasionally severe dermatitis; syncope, collapse, vomiting, vertigo and headache; and icterus are all listed as secondary effects.

The most recent reports on this drug are based upon the experience of Major Walson of the Army, who treated 800 patients and gave more than 6000 injections. The method of treatment recommended by the board of medical officers of the Army and that method used by Walson is as follows:

An interval of seven days between each dose in each course of treatment. Treatment to consist of four courses of silver salvarsan and gray oil.

In the first course of treatment the first dose to be fifteen-hundredths (0.15) gm. of the drug. The second dose to be two-tenths (0.2) gm., and each of the remaining five doses of the course to be three-tenths (0.3) gm. of the drug.

At the end of the first course of treatment a Wassermann blood test is made, and then thirty days' rest.

In the second course of treatment three-tenths (0.3) gm. of the drug is given at each of seven injections, at seven day intervals, and is followed by two and one-half months' rest.

The third and fourth courses are the same as the second, with ninety days' interval between the two. Gray oil is used in conjunction with and at the same time as each injection of silver salvarsan, using eight-hundredths (0.08) gm., by intramuscular injection.

A blood Wassermann is recommended after each course, and a spinal fluid Wassermann after the second.—(Abstract from an editorial in the Journal of Laboratory and Clinical Medicine, June, 1921.)

INFANTILE PARALYSIS INCREASING

Doctor Hassler, of the San Francisco Health Department, has requested the Journal to call the attention of physicians to the increase of infantile paralysis. During the last two weeks ten cases have been reported in San Francisco, which is an increased rate over any year since the epidemic of 1917.

The Health Department considers it is safe to assume that a number of missed cases, or so-called abortive cases, exist for each developing paralysis that is reported.

With two or three months of climatic conditions favorable for the spread of this disease before us, there is danger of an epidemic of this disease, which we should not only foresee but forestall, if possible. This may be done with the assistance and co-operation of the medical profession.

There are abortive forms of the disease in which paralysis does not develop. These constitute the greatest menace in the spread of the infection, as these are the most difficult of diagnosis. The syndrome of fever, drowsiness, pain and sore throat, are very suspicious symptoms in children, and patients suffering from these symptoms should receive the special care of physicians at this time. The contact relations of sick children should be studied with special care.

The physician often is not aware of all these relations in the practice of other physicians. Therefore, prompt report to the Health Department will be of assistance to the physician and the public.

Early diagnosis and early report to the health offices is most important, and prophylactic precautions to prevent the spread of this disease should be practiced.

Infection is spread from person to person by secretions of the nose and throat of patients and carriers. It is claimed that dust and the stable fly carry the infection; therefore, all patients showing an otherwise unaccountable fever with drowsiness, pain and sore throat should be reported and the patient isolated in rooms screened against flies.

STREET VENDERS OF NOSTRUMS—The Board of Health of San Francisco, at a meeting held on July 21, 1921, passed the following resolution:

"Resolved, that the Board of Health place itself on record as being opposed to the issuance of licenses to anyone peddling medicines of any sort on the public streets, as such practice is a menace to public health; and, further, that the Health Officers be directed to refuse to issue permits for the vending of all medical nostrums and products on the public streets."

Original Articles

EPIDEMIC ENCEPHALITIS.*

By HERBERT C. MOFFITT, M. D., San Francisco.

Our interest in world-wide epidemics has been rudely awakened by the events of the last five years. In 1916, chiefly in New York and neighboring states, came a wave of poliomyelitis bringing with it at the crest unusual cases and high mortality. During 1917, culminating in the camps in winter and in the spring of 1918, respiratory infections succeeded each other in well marked periods or developed together during several weeks, possibly enhancing the virulence one of the other, and running clinical courses of severe and unusual types. Epidemic meningitis, pneumococcus and streptococcus infections were dangerous additions to the more usual camp scourges of mumps and measles. Later in 1918 rolled in the tidal wave of influenza from Europe, swamping the country in its initial strength and spreading rapidly from east to west. Possibly (as would appear from certain records in the Letterman Hospital) even before this wave reached us a smaller one, coming in the other direction and much modified by the long course across the Pacific, had broken on our shores. During the last three months of 1918 230,845 cases of influenza were reported in California, in 1919 82,682, in 1920 66,183 and a smaller wave is even now in the past month well raised above the average level of six months ago.

In 1917 and 1918 all these great infections were with us curiously pneumotropic although, starting about this time in central Europe, another infection with decided neurotropism was spreading gradually, and gathering strength to break in the epidemic waves of 1918, 1919 and 1920; we are again witnessing the association of the "catarrhal" with the "nervous fevers" that has been noted in cycles through more than 400 years. Those particularly interested in various types of encephalitis and its epidemiology should read the interesting historical paper of Crookshank, the older articles of Leichtenstern, Oppenheim, Mauthner, Church, Comby and Longuet, as well as numberless papers, reviews and even monographs which have appeared since Von Economo's report of cases of lethargic encephalitis in Vienna in 1917.

Incidence: The incidence of the disease has undoubtedly everywhere been much underrated, many early cases being unrecognized or miscalled botulism, meningitis or influenza. Early in 1918 cases were reported in France and in March and April, 1918, in England; it seems probable that the "mysterious disease" of 1917 in Queensland and New South Wales reported by Cleland and Campbell should be classified with epidemic encephalitis, and the cases described by Breuil in Australia (Medical Journal Australia, March, 1918) clinically could be so grouped though pathologically nearer to poliomyelitis. The ultimate classification of the entity described by Bradford, Bashford and Wilson under the heading "Acute

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Infective Polyneuritis" is more doubtful. Five hundred and thirty-five cases were reported in England and Wales in 1919 and 202 cases in the first three months of 1920. Roger, from a survey in France, estimates that at least 10,000 cases occurred in 1920. To June, 1920, 3960 cases had been reported in Italy with 1013 deaths (25.6%). The first case in New York was reported September 4, 1918. In New York City 128 cases with 33 deaths were reported in 1919; 565 cases with 211 deaths in 1920; 61 cases in January and 195 in February, 1921. The U. S. Public Health Report of February 11, 1921, analyzes 222 of 225 cases reported in the United States between September 18, 1918, and May 19, 1919; 39 of these were excluded on account of faulty diagnosis; 46% of 122 cases had recently had influenza; no evidence of direct contagion was noted. It is plainly evident that statistical study of the disease except from carefully kept hospital or private records is of little value. No cases were reported in this state for 1918, 78 in 1919 and 76 in 1920. Up to April 1, 1921, the cases reported in the state at large number 170, in San Francisco 59. Many of my cases figure in these totals, others have not been reported because seen in consultation or in chronic stages of the disease.

Etiology: Loewe, Strauss and Hirschfeld of New York were the first to demonstrate that emulsions of the nervous system from fatal cases might transmit the disease to rabbits and monkeys. Their results have been confirmed by Thalhimer in this country, by Levaditi and Harvier in France, by Ottolenghi, D'Antona and Tonietti, Maggiore and Sindoni, Micheli in Italy. It has been fairly established by the same investigators that the virus is a filterable one, that it exists in the nasopharyngeal secretions, that it may be preserved for long periods in glycerin, that its virulence may be enhanced by rapid stepping-up through a series of rabbits, or may be decreased by drying, by treating with phenol or other chemicals. Harvier describes a certain fixed virulence after passage through several rabbits with symptoms occurring regularly in four to six days. On the other hand, Harvier and Levaditi have noted incubation periods of three or four weeks from material of chronic cases ending fatally after five or more months. Thalhimer has had rabbits survive for ten weeks after inoculation. Guinea pigs or mice may be used experimentally as well as rabbits. Infection occurs not only from intracranial injection of filtered emulsions, but from intraneural, intranasal, intraocular, intratesticular as well. Loewe and Strauss have emphasized the diagnostic value of injections of the filtered nasopharyngeal washings and of spinal fluid intracranially into rabbits. They have reported a minute filterable organism grown from the brain, nasopharynx, spinal fluid, and blood in man and from the brains of infected rabbits. Thalhimer has confirmed their results, but Levaditi and Harvier have been unable to do so.

The method of intracranial injection of spinal fluid or nasopharyngeal washings into rabbits as described by Loewe and Strauss is quite simple. In two of my cases material from the nasopharynx

was used, in two others spinal fluid as well. In one case nasopharyngeal washings after filtration were injected into a monkey's brain by Dr. Carl Meyer. All the experiments were negative.

Surprisingly few instances of contagion have been demonstrated in man. Guillian and Lechelle cite one, Halle one, Claude and Laulerie two. No instances were observed in 122 cases analyzed by Smith. (Public Health Report February 11, 1921. 36:207.) Netter thinks that natural immunity must be high and that only individuals with substandard nervous systems are liable to be attacked. Lepine writes that in all of his fifty cases there were predisposing factors that might render the nervous system less restraint. Of my forty-eight cases, fifteen had had influenza in 1918 or 1919, two women had outspoken exophthalmic goitre; there was evidence of cerebrospinal syphilis in three men. Other histories of interest may be grouped as follows:

Unconscious from falls within a year, 2.

Repeated syncope, 1.

Familial tremor, 1.

Two attacks of facial paralysis, 1.

Previous chorea, 1.

Marked nervousness for years, 5.

Recent mental strain and surmenage, 3.

Fifteen of my cases were women, thirty-three men; the greater frequency of the disease in men has been recorded by a number of observers.

Pathology: A merchant of 34 had been nervous for years with frequent headaches, occasional pain in left arm, restless sleep with sudden sleep starts. Beginning January 31, 1919, he was ill three days in Chicago with cough, fever and mild delirium at night. He then returned home and was apparently well till February 22, when he felt feverish and sweated profusely. Headache then began and persisted in moderate intensity. February 26, occasional sharp pains began to shoot down the left arm like electric shocks and on the 28th intense burning pain became localized in the left index finger. This pain dominated his whole actions for the next two days, prevented rest, was not relieved by hypodermics of morphin, nothing could be found to explain it when suddenly it disappeared and was replaced by myoclonic jerkings of the left hand, arm, shoulder muscles. The patient became more restless and delirious, temperature was never over 99.6 degrees, reflexes were unmodified, eyegrounds unchanged, blood count normal, spinal fluid not under pressure with negative Wasserman, globulin slightly increased and 11 lymphocytes per cmm. March 4 myoclonus was persistent in the left arm and spread to the left abdominal and trunk muscles with hiccough due apparently to contraction of the left half of the diaphragm alone. Profuse sweating was seen on the left side of the face and neck without other evidence of sympathetic involvement. March 5 stupor replaced restlessness and delirium, respiration became irregular and the pulse, which had been from 90 to 96, rose to 120; death occurred suddenly early on March 6. No paralysis of eye muscles was noted at any time.

Autopsy by Dr. Rusk showed slight enlargement of the spleen and mesenteric glands. There were

no changes in the meninges or in cerebral arteries; there was no brain edema. Macroscopically sections of cerebral hemispheres, cortex, basal ganglia, pons, medulla and upper cord showed nothing abnormal. Microscopically there was typical perivascular lymphocytic infiltration scattered through basal ganglia and particularly marked in the brain stem. There were very few small hemorrhages. The cord was unfortunately not secured.

A woman, 35, entered the University Hospital April 23, 1919, with full-term pregnancy and complaining of pains and jerks in both arms. She was delivered April 30 of a healthy child. Slight temperature followed delivery and was referred to thrombophlebitis of the left femoral vein. Mild delirium after a few days gave place to apathy and lethargy. May 10, ptosis, diplopia, masseter weakness, palsy of the right facial nerve were noted. There was a positive Babinski on the right. Spinal fluid showed a negative Wasserman, positive globulin, reduction of Fehling and 26 lymphocytes per cmm. Gradual improvement took place, apathy lessened, myoclonus ceased. Facial, masseter and eye muscle palsies disappeared, convalescence was apparently established when suddenly May 26 death occurred from pulmonary embolism.

Autopsy was done soon after death and showed the source of the pulmonary emboli to be in the deep leg veins. The brain superficially was normal, but the gray matter on section was pinker than normal. There were a few tiny hemorrhagic spots in the brain stem. Microscopically there were numerous small hemorrhages and numerous areas of marked lymphocytic infiltration along the small veins of basal ganglia, brain stem and pons.

August 29, 1920, a man 44 years of age was seen with Doctor Jacobs. When much overweight ten years ago he had had several attacks of syncope without obvious reason. Early in July sudden diplopia, due to paralysis of the right inferior rectus, came on without any other symptoms or signs. There was no history of syphilis and the blood Wasserman was negative, but specific treatment was given and the diplopia gradually got better. Ten intramuscular injections of mercury benzoate were given, followed August 19 by intravenous injection of nearsphenamin .3, which was repeated August 26. Malaise and temperature of 101 degrees followed the last injection. On the 28th he was thoroughly examined by Doctors Shiels and Jacobs and nothing noted except slight diminution of the knee jerks. On the 29th at 3 p. m. he had pain in the right arm, followed at once by a chill and severe general convulsions; at 8 p. m. a second convulsion was succeeded by deep stupor. He was examined soon after and found to have no paralysis, no rigidity, knee jerks, Achilles reflexes were absent, but there was a positive Babinski on both sides. The eye grounds were negative, leucocytes 13,000, with normal differential. Spinal fluid was clear, not under pressure, contained no cells, gave a negative Wasserman and Lange and a positive Nonne and Naguchi. The urine, which had been normal on the

28th, contained on the 30th a large trace of albumen and numerous hyalin and granular casts. Coma persisted and death occurred on August 31. Autopsy by Dr. Ophuls showed the skull cap thick, heavy and congested, the dura normal, the piaarachnoid markedly congested. Numerous punctate hemorrhages dotted the cut surface of the brain sections, especially in the white substance. They were most numerous in the occipital lobes, corpus callosum and beneath the aqueduct of Sylvius and the fourth ventricle. Microscopical sections of various parts of the cortex showed extreme engorgement of the small veins and capillaries and a few small hemorrhages. The pia was not thickened. In sections of the corpus callosum and various parts of the brain stem there were many large perivascular hemorrhages, but no areas of round celled infiltration. As there was no positive evidence of syphilis in this case a clinical diagnosis of encephalitis was made, the possibility of arsphenamin encephalitis was raised but not considered probable. The autopsy findings were those of hemorrhagic rather than epidemic encephalitis. Careful systematic examination of the brain sections from the above cases will come later.

Marinesco, Wilson, Buzzard, Marie and Lhermitte, Bassoe, Wegforth and Ayer have given excellent descriptions of the pathological changes. In general it may be stated that:

1. Lymphatic perivascular infiltration and small hemorrhages are the dominant lesions. The entire nervous system may be involved, but there is an undoubted predilection for the brain stem.
2. Piaarachnoid infiltration is less marked than in poliomyelitis or in general paralysis.
3. Destructive and degenerative parenchymatous changes are not nearly as extensive as in poliomyelitis. Extensive hemorrhages and large areas of softening are not usual, not nearly so common as in the hemorrhagic type of encephalitis that followed the influenza epidemic of 1889-90. And, yet as good observers as Mauthner and Leichtenstern could see no essential constant pathological differences between the so-called "influenzal" encephalitis and nona of that period.

The wide dissemination of the lesions in the nervous system, the rarity of extensive parenchymatous destruction, the shifting character of the vascular and perivascular changes, of ganglia degenerations and glia proliferation, the concentration of the virus at one time in one part of brain or cord and later in another will account for the variability of clinical pictures and the shifting scenes at various periods of the disease. In view of scattered reports that are appearing of autopsies on chronic cases it seems probable that the virus is capable of long viability and that fresh lesions may be excited in the region first attached or that entirely new areas may be invaded. Late symptoms are not necessarily the result of slowly progressing degenerations, therefore, but often the expression of a recrudescence of the disease. Von Economo followed one of his early cases eighteen

months, during which the clinical picture often changed. Death occurred after an acute exacerbation with marked dysphagia and autopsy showed old lesions in the brain stem with a recent involvement of the area about the glossopharyngeal nuclei. Archard and Foix, in describing the pathology of five cases, picture the manifest activity of a lesion found in a case of seven months' duration in which death occurred suddenly when the patient was apparently doing well.

Lesions outside the nervous system are rarely found at autopsy, which explains how little help the clinician can expect in diagnosis except from an analysis of the nervous symptoms. Two cases of Bassoe showed extensive petechiae in pleura, pericardium, bladder and stomach. Hemorrhagic blebs have been noted occasionally over heels, buttocks and backs, and bedsores as well. One of my patients finally died from septicemia resulting from excoriations of his skin from constant picking and scratching. Enlargement of the spleen is inconstant; swelling of the submaxillary and parotid glands has been described in a few instances.

Symptomatology: As is usual in world-wide epidemics, the first waves bring the most severe and the most typical cases. In the next years the clinical picture is less typical, or we learn to recognize more readily fruste forms that were overlooked at first. Unlike many infectious diseases the prodromal and general symptoms offer little help in diagnosis. The clinical charts of acute cases show no typical curves of temperature, pulse and respiration. As a rule there is slight temperature even in slowly developing cases. Hyperthermia I have seen only in cases with pontine localization or with terminal bronchopneumonia, but from other reports this is not always so. In a case fatal after twelve days' illness temperature never rose above 99.6. Pulse rates over 120 and very slow and irregular respiration, I have again only happened to see when pons and medulla nuclei were definitely involved. I have seen labial herpes three times, indefinite erythematous rashes on several occasions, but there are no characteristic skin changes; purpura and mucous membrane hemorrhages have been reported, but they must be extremely rare. The spleen has not been palpable in any of my cases. There are no cardiac lesions even in the pronounced choreiform types, and no pulmonary signs except in cases with terminal pneumonia. Netter and other French observers have noted enlargement of the salivary glands. Merklen has described an onset with arthritis and in one of Dr. P. K. Brown's observations pains in the joints followed soon on inaugural pains in the hands, arms and back. Claud has described swelling of tendon sheaths as well as joints. In Dunn and Heagey's analysis of 115 cases nose-bleed was noted twice and I have seen it in one case. The essential lack of general symptoms in most cases is in strong contrast to other infections with early pronounced nervous symptoms—such as epidemic meningitis, tubercular meningitis, pneumonia, typhoid and is of great help in diagnosis. The patient looks too well, eats too well, has too clean a tongue, too low a temperature to have his

delirium, stupor or many focal signs explained by one of the above diseases.

The most typical forms of epidemic encephalitis are slowly ushered in by indefinite malaise, moderate headache, constipation, a little fever and disturbance of vision, either blurring or distinct diplopia. At this stage there may be insomnia and decided restlessness with mild delirium or ephemeral disorientation either day or night. More characteristic is an increasing listlessness, lack of interest, apathy, asthenia which often deepens into the lethargy or stupor which has given its name to the disease. This mental indifference is accompanied with a striking loss of muscular tone and expression, or even more remarkable, with a decided increase of muscular tonus and rigidity. The masks of Parkinson or Hutchinson cover the former lively facial expression. Slow speech, some difficulty in swallowing occurs. In most severe cases the patient lies frozen in certain attitudes in bed and may say that he feels his body no longer belongs to him or obeys his will as before. In one young girl during this stage, speech was wholly inhibited, no voluntary movements, even chewing, could be executed and the extremities when placed in bizarre position would be held long by catatonic rigidity. Retention of urine is not unusual. Irregular coarse tremor and attacks of muscular jerking in face, trunk and extremities may occur. Twenty of my cases followed this course with characteristic symptoms developing so early in the disease that diagnosis did not long remain in doubt. In one young business man transient blurring of vision was the only symptom apart from lethargy that would overpower him during certain hours of the day so that he would fall asleep while dressing or while writing at his desk. In an active lumber merchant in perfect health dizziness and diplopia came suddenly during a motor trip and prevented his driving home. Nine of these patients, nearly all cases of 1919, recovered in from two to ten weeks and have remained well. A physician of 61, taken ill in October, 1919, is still weak and has difficulty with accommodation in reading. Two men are nearly well, but tire readily. One man with onset September, 1919, has still a persistent right internal rectus palsy. One woman of 63 with abrupt onset of external ophthalmoplegia and inactive pupils, lethargy and absent knee jerks, January, 1920, had fever for four weeks and gradually developed a Parkinson's syndrome more marked on the left. She slowly recovered, though always conscious that her left side was not as good as before and traveled to Seattle in summer. Three deaths in her family during September caused her great mental strain and in October there was a rapid return of lethargy, rigidity with again inactive pupils. Tremor and rigidity increased, lethargy persisted and she died February, 1921. A man of 36, in April, 1919, had pains, jerking and later weakness in the muscles of both thighs. In October, 1919, after peculiar paresthesiae in his abdomen he had diplopia, one week later lethargy and still later slow speech, stiffness of his extremities and gradually increasing difficulty in walking.

When examined in February, 1921, he presented the typical Parkinsonian mask, attitude and gait. His spinal fluid at this time was negative except for a Lange curve of 2233331000. Three other patients are even worse off with their legacies of tremor and rigidity. In the above group the chief determination of the virus must be in basal ganglia and brain stem. Mauthner in the encephalitis following the influenza epidemic of 1889-90 first suggested that the interruption of sensory impulses in the thalamus would account for the remarkable lethargy. As Bassoe observes, this lethargy must be regarded as a focal symptom, as it occurs in cases with few general symptoms and a perfectly free sensorium. The Parkinsonian and pseudobulbar syndromes probably represent localization in the corpus striatum and red nucleus.

It is hardly necessary to establish the eleven different clinical types set up by Tilmay and Howe or the fifteen or more listed by Archambault. The rigid adherence to classification may lead to overlooking important minor symptoms and fruste forms of the disease, though it has the great advantage of making us review our knowledge of the anatomy and physiology of the nervous system. In diagnosis it is often wise to forget schemes and remember general principles. We must remember that any part of the nervous system may be attacked by this disease, that peculiar combinations, progression and retrogression of symptoms may be observed, that modes of onset differ greatly, that certain unusual general or focal phenomena may dominate and confuse the picture. Certain difficulties of diagnosis and certain fruste forms will be sufficiently emphasized in the following without adherence to definite grouping:

1. The pain that often precedes myoclonus or other typical symptoms of the disease may be unusually severe, unusually localized and unusually persistent. In the fatal case recorded above intense burning pain was felt in the left index finger two days before myoclonic jerking began in the hand and arm. In a young woman of 25 pain in the left ear and side of the neck led to a diagnosis of ear disease. In a working man of 34 severe pains in both thighs came and went for several days before mild delirium and lethargy were noted. A young man of 22 while at the theater began to have severe recurrent cramp-like belly pain which lasted for several days and was succeeded by pains down the legs with myoclonus. Denechau reported a case in which a decompression operation was done because of pain about the left ear, which was followed by Jacksonian epilepsy of the right arm. Bassoe mentions that in a young girl pain in the teeth sent her to the dentist; later the pain shifted to the left eye and ear. Intense visceral pain may occur as in the case of a man with such intense pain in the left testicle for two days, unrelieved by opiates, that he demanded operation. Massari (Wien. Klin. Woch. 33, p. 214, 1920) reports six interesting cases of hiccup, abdominal pain and myoclonus, one of which was operated upon for supposed abdominal disease. In one most remarkable case of mine the disease began abruptly with nausea, temperature of 103 and pain referred

to the esophagus with a sense of coldness in the right hand; one week later intense pain was referred to the lower thoracic and upper abdominal regions, to be followed in two days by myoclonic jerks of the legs. Pain may be acute neuralgic or a persistent boring or burning or a disagreeable sense of coldness. In the young woman mentioned above with initial pain about the left ear and subsequent intense pain about the left ear and arms, with myoclonus in arms and trunk, burning sensations in the left shoulder and arm are still intensely annoying three months after the onset; there was an early dulling to temperature and pain perception with a burn from a hot water bag over the scapula. Sicard has described these persistent forms of radicular pains. In Pardee's article on the "Acute Descending Radicular Type" emphasis is laid upon the increase of pain as the process descends and the lumbosacral cord is reached. This has not held in all my cases; in one of which pain and myoclonus ascended from legs to trunk.

2. *Myoclonus* may be misinterpreted, though it should be a distinct help in diagnosis. Excellent descriptions of the so-called myoclonic type of the disease have been given by Bassoe, J. Ramsay Hunt, Tilney and Howe, Reilly, and many others. Nine of my cases showed marked myoclonic jerking at different periods of the disease—most often in early stages. In two others jerking of face and arm muscles was much less violent, more in small muscle bundles—myokymia rather than myoclonus. The jerking may begin in face, arm, leg or trunk muscles, and extraordinary movements and distortions occur. The association of rhythmic jerking of abdominal muscles with hiccup has been noted above and we shall see later that hiccup lasting for days may precede the myoclonic type as well as other forms of the disease. It is to me impossible to explain why the severe initial radicular pain usually stops abruptly when myoclonic jerking begins.

3. *Convulsions* may abruptly open the scene, or, as in the case cited above, may follow some weeks after diplopia or other inaugural symptoms. A teacher of 59 had ptosis of the right lid appear abruptly March, 1920, masseter weakness, insomnia, jerking of the abdominal muscles followed in later weeks. In August, 1920, an epileptic convulsion occurred and seizures have been frequent ever since. A woman of 44 with unstable nervous system for years and recent family friction and insomnia had a general convulsion while lecturing October 11, 1919. This was succeeded by temperature of low grade, headache and in two weeks blurred vision, and a second convulsion. Hebetude, stupor, catatonia, mild delirium and hallucinations lasted until December. Spinal fluid November 15 showed globulin ++; 11 cells. Wassermann negative; December 2, globulin + 5 cells; Wassermann alcoholic antigen negative; cholesterin ++. Recovery took place gradually in January, 1921, under indifferent therapy. Cases with Jacksonian epilepsy have been reported by Raymond and Brissaud, Raymond and Claude, Sicard, Dumolard and Aubry.

4. *Meningeal symptoms* may dominate other clinical manifestations. A man of 35 with scars of old operations for tubercular glands of the neck was suddenly taken ill March, 1920, with vomiting, headache and retraction of the neck. Retraction of the neck, pains in the back, slight temperature, stupor persisted for three weeks. In the second week left hemiplegia gradually developed, lethargy continued and it was not until the end of May that he was well enough to leave hospital. Spinal fluid showed nothing abnormal. A boy of 17, who 10 months before had been knocked unconscious while boxing, had two weeks before entrance to the University Hospital blurring of vision, headache and vomiting. He was able to work, but was unusually dull and sleepy. Ten days later he was seized with severe headache, persistent vomiting and pain and stiffness of the neck. As he had a marked Kernig, head retraction, fever, variable reflexes, left external rectus palsy and signs of old tuberculosis in the right upper lobe, the suggestion of tubercular meningitis was strong. But he looked too well for a meningitis of this type causing so many symptoms and signs; the spinal fluid, though under pressure and containing 17 cells per cmm., reduced Fehling solution and showed no web. A history of early jerking in forearm muscles was obtained; his expression was apathetic and lethargic. Recovery was rapid and apparently aided by repeated spinal punctures which showed the effect of increasing irritation from the procedure in the rise of lymphocytes to 150 per cmm. Filtered nasopharyngeal washings and spinal fluid were injected intracranially into rabbits with negative result. In pre-epidemic days I should have called this a serous meningitis.

In the last two months I have seen three extraordinary cases which are most difficult to classify. A young married woman of nervous temperament, who had a long, exhausting illness two years ago following an abdominal operation, was in apparently good health when on March 12 she was suddenly seized with dizziness and intense pain in the back of the head and neck while writing letters at her desk. She was slightly irrational and had severe headache all night and next morning temperature of 99.2. By March 16 she was all right again. On the 18th there was return of severe headache with delirium and neck stiffness. Next day there was occasional peculiar disorientation for short periods, but March 22 she was well and up at dinner. March 23, while about to take a bath in the morning, she had a convulsion followed by delirium and severe headache. When seen she was extremely restless, with head retraction, no changes in reflexes or eye grounds, no obvious paralysis, though she complained of weakness and pains in the legs. On March 24, 10 c.c. of bloody spinal fluid was withdrawn with some temporary relief. The subsequent temperature is shown on the lantern slide. Meningeal irritative symptoms continued. March 30 right hemiplegia developed suddenly. Several spinal punctures showed old and fresh blood admixture. Culture from blood and spinal fluid were negative,

Wassermann negative in both. Leucocytes were at first 15,200 and on April 1, 27,100 due to bronchopneumonia, which caused death April 5. No autopsy was obtained.

A female teacher, 31, was abruptly taken ill March 22, 1921, with violent occipital headache. Vomiting persisted for two days, head retraction was marked; delirium, stupor and diplopia were features of the first two days. Spinal fluid withdrawn March 25 and 26 by Dr. Downing of Berkeley, who kindly referred the patient to the University Hospital, was bloody both times, but otherwise negative. Leucocytes were at first 18000 with 83% polynuclears. On entrance to the hospital March 29 the picture was that of acute meningeal irritation. Spinal fluid March 30 gave the xanthochromia of old blood mixture; blood and spinal fluid cultures were negative. Although there was no positive evidence of meningococcus infection 15 c.c. of anti-meningococcic serum were given intraspinally without reaction. Rabbits inoculated with spinal and filtered nasopharyngeal washings did not develop encephalitis. The severe meningeal symptoms slowly began to improve early in April and by April 9 all things were better except that peculiar delusions and hallucinations kept recurring for short periods. April 10 there was renewed headache with vomiting, succeeded however, by several days of slow improvement. April 17 there was a severe relapse ushered in by headache, vomiting and head retraction. April 23, after complaint for two days of something wrong with the eyes, there was definite right ptosis and a wider pupil on the right. April 24 a convulsion was followed by complete right external and internal ophthalmoplegia, drooping of the right face, thickness of speech and some dysphagia. April 26 speech and swallowing were more impaired, the right patella jerk was increased over the left, respiration was slow and irregular with long pauses in which tremor of the face and hands would occur. The patient seemed moribund from advancing involvement of pons and medulla but again rallied, became conscious, the symptoms improved to some degree, and death did not occur until May 3, following another convulsion. The findings at autopsy are not yet clear, and further study will have to decide the cause of successive hemorrhages about the base of the brain with compression of the pons and medulla and involvement of the right oculomotor nerve. Fissinger and Janet, in addition to cases of military tuberculosis and sarcomatosis mistaken for epidemic encephalitis, report one instance of multiple meningeal hemorrhages with history much like the above. A woman of 40 (not syphilitic) was abruptly taken ill with headache, vomiting, diplopia, followed by unconsciousness. May 7, 1920, she was brought to hospital and found to have signs of meningitis; temperature 39, bilateral Babinski and bloody spinal fluid. From May 14 to 20 symptoms improved and temperature fell, May 22 relapse suddenly occurred with headache, diplopia, temperature 39 to 40, with fresh blood in the spinal fluid. Again improvement occurred, to be followed by a relapse of stupor, coma and

death June 7. Autopsy showed diffuse meningeal hemorrhage with preponderance on the right and no microscopical evidence of encephalitis. Inoculation experiments were negative. The cause of the hemorrhage was evidently not determined.

5. *Fruste Forms.* In the aftermath of all epidemics mild, atypical, peculiar cases begin to be recognized. Whereas in the rush of the epidemic many such cases are missed, there is danger later on that too many may be hastily accepted and other conditions overlooked. A man of 67 who had had influenza January, 1920, in January, 1921, felt feverish and out of sorts for a few days. He then had a tooth pulled after novocain injection, continued to feel somewhat below par and in a few days noticed his pupils much dilated and was unable to read. He consulted an oculist, who found absence of light and accommodation reactions and told him he had syphilis. Apart from arteriosclerosis and hypertension nothing was found except the pupillary changes, there being no evidence of syphilis and the pupils became normal after six weeks. A man of 56 had influenza November, 1918, followed by asthenia and diplopia in January, 1919; pupils reacted sluggishly to light and a diagnosis of cerebrospinal syphilis was made. When seen in March, 1919, pupils and eye muscles were normal and Wassermann reaction in blood and spinal fluid was negative. A man of 55 who had had in previous years two attacks of peripheral facial paralysis on different sides, in November, 1920, developed a complete right internal and external ophthalmoplegia. Apart from marked weakness and nervousness there were no other signs. Improvement started December 24 and recovery has since been complete.

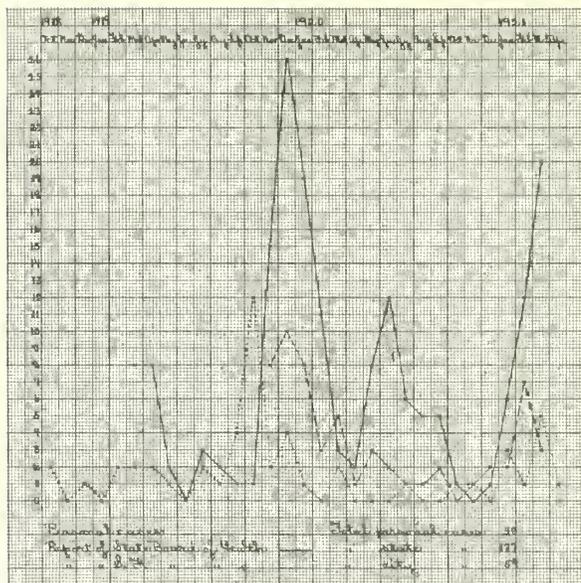
I have notes of four cases of unusual vertigo coming on abruptly and associated with transient blurring of vision, with profound exhaustion for several weeks, in one case with apathy and lethargy for seven weeks. In two, Baranyi tests showed moderate involvement of the conduction paths. Three of these cases have wholly recovered and there seems no reason to suppose that they had relation to multiple sclerosis.

At this time particular hesitancy should be shown in making diagnoses of hysteria and neurasthenia and especial care taken to inquire for histories of diplopia, radicular pains with myoclonus, fever, mild delirium or periods of lethargy. An Italian girl was thought to be lazy and hysterical and punished by her parents until a Parkinsonian type of encephalitis sent her to the hospital. A young man had a sore throat and fever in September, 1919, and was left weak and nervous; he was thought to have "nervous prostration" until diplopia developed in a relapse two months later. Mild chronic recurrent types of the disease are particularly liable to misinterpretation, and it must be remembered that even after a year these may develop acute symptoms and end fatally.

6. *Epidemic Hiccup* is a most remarkable affection which has undoubted relations with epidemic encephalitis. In February, March and April, 1919, I saw five cases of hiccup, all in men, lasting from three to six days, and during this

same period I heard of many more. Salinas, for a small community, seemed to have an unusual number; another case in October, 1919, lasted three days. No myoclonus accompanied and no sequelae followed any of these cases. In one instance the diaphragm was watched during an attack and found to be contracting equally on the two sides; considerable fluid and a big gas bubble were noted in the stomach and relief followed lavage. The other cases were apparently helped by chloral and bromid. In Europe an epidemic appears to have started in the winter of 1919-20, the first cases being described by von Economo from Vienna. Sicard and Paraf, Dufour Bénard, Netter, Lhermitte have written entertainingly of the disease in France in the early months of 1920. There may be slight prodromes or a sudden onset. Netter reported a case lasting six days with temperature up to 39. Cases associated with pain in the neck and arm and myoclonic jerking in arms and abdominal muscles have been recorded. In a few instances undoubted encephalitis has followed a period of hiccup. Clerc and Foix observed one case that started with hiccup, in forty-eight hours developed temperature up to 40, and died soon after in stupor. Autopsy showed inflammation of the entire spinal cord with lesions particularly marked about the third and fourth cervical segments. Von Economo mentions a fatal case with hemorrhages into the anterior and posterior horns of the cervical cord. Sicard reported three cases with hemiplegia; Cade and Dumollard two cases with meningeal irritation.

Diagnosis: The diagnosis in epidemic encephalitis depends chiefly upon the careful analysis, sifting and grouping of the varied nervous symptoms. The most important general symptom is fever. Ephemeral visual disturbances must be given considerable weight. It must be recognized that pupillary disturbances are by no means uncommon, and that isolated Argyle-Robertson pupils may occur. In my experience slight optic neuritis is not at all rare, but I have seen no marked cases, although a few have been reported. In four of my cases the question whether cerebrospinal syphilis could account for all the phenomena had to be weighed carefully, as there were signs which could be so interpreted, and once the Wassermann reaction was present in the blood and twice in the spinal fluid. Fever, however, was present in two cases, myoclonus in two cases, occupational delirium of a very characteristic type in one instance. Syphilis may have been a determinative factor, but in view of the quite typical combinations of symptoms and of the outcome there seems no reason to hesitate with the diagnosis of encephalitis. Guillain, Jacquet, Lechelle have particularly emphasized the identical symptomatology of certain cases of basal syphilis and the mesencephalic type of epidemic encephalitis. Fever and myoclonic jerking are important signs in favor of encephalitis. Lethargy and eye-muscle paralyses are not infrequent in brain tumors, especially in tumors of the quadrigeminal or pituitary regions. Differentiation from encephalitis may be difficult, but as a rule the symptomatology is less varied and less shifting, fever less often occurs, pressure



Cases of epidemic encephalitis in San Francisco and California

symptoms are more pronounced. Nonne has suggested that certain "pseudotumor complexes" may be due to encephalitis and Buzzard and Collier in England, Benechau and Blanc in France have described cases simulating brain tumor and characterized by marked intracranial pressure with choked disc and secondary optic atrophy.

In one case atrophy of trapezius, shoulder-girdle and upper arm muscles, in a second, atrophy of the shoulder and upper arm muscles alone was exactly that of poliomyelitis. One case has already been described as ushered in by pains in the neck and arms. The second case began with insomnia, mild delirium, blurring of vision, January 20, 1921. There was temperature 99 to 100, herpes and pulse rate of 120 for a week or more. Darting pains in the trunk were followed by jerking of the abdominal muscles and, after a month, by paralysis of the deltoids, trapezii, biceps, triceps and extensors of the wrist. When seen March 8, 1921, all muscles were rapidly recovering. I can look back on at least five indefinite cases seen in 1915 which could best be grouped under the heading polioencephalomyelitis. A man of forty-one began January 6, 1915, to have severe pain in the left great toe, which later extended into the foot. One week later he had sudden dysphagia and dysarthria, and, following this in a few days, great weakness of neck, shoulder and arm muscles, with slight weakness of the legs. About the same time he noticed blurred vision and ptosis. When seen six weeks after the onset there was considerable atrophy of the shoulder girdle, gluteii and quadriceps femoris muscles; reflexes were normal, Wassermann was negative. Recovery was slow, but complete. Retrospectively these cases might all now be classed as epidemic encephalitis.

Laboratory Tests: Blood and urine examinations are no help in diagnosis. There is usually a moderate leucocytosis, 7,000 to 15,000 leucocytes.

The spinal fluid is usually not under increased pressure, though exceptionally it is decidedly so. It is nearly always clear, though a number of observers have described hemorrhagic fluid. There may be no increase in cells or counts up to 150 or more, practically all lymphocytes. Globulin is increased in over half the cases. Fehling solution is uniformly reduced (an important differentiation from tubercular meningitis). The Wassermann reaction is uniformly negative, except in complicating cerebrospinal syphilis. My experience with Lange's colloidal gold test parallels that of Davis and Kraus and Findlay and Shisken. There may be a perfectly negative curve, or, quite frequently, a moderate luetic, more rarely an outspoken paretic one.

Prognosis: The more cases one sees the more doubtful one becomes about authoritative assertions concerning prognosis. Even allowing for the fact that many cases are not reported, the immediate mortality of the disease is very high; the reports variously rate it from 20 to 40 or even 50 per cent. My cases number forty-two that I regard unquestioned, together with six fruste forms in which ophthalmoplegias, vertigo, slight myoclonus, lethargy, mild delirium occurred in such suggestive combinations that they in all probability should be classed with the disease. The cases of hiccup should be kept apart as representing much milder types of the infection (if they are to be classed here at all). All fruste forms have ended in practical recovery. The group of forty-two cases comprised twenty-nine men and thirteen women. Two women and five men died, seven in all—a mortality of 16 per cent—one woman who died suddenly over a month after onset of the disease from pulmonary embolism and not from encephalitis. An old man committed suicide by gas because incapacitated by the disease of over a year's standing. A man in a deplorable condition from the sequale of an intensely severe myoclonic type of the disease, which was observed for several weeks in the University Hospital, died eight months after the onset in Agnews from septicemia entering from excoriations. One woman died thirteen months after the onset from a relapse of the same type of the disease she had had at first. Others died from twelve days to seven weeks after the onset. A woman taken ill in April this year, is still in a critical condition. Six men and three women have been left more or less completely incapacitated by Parkinsonian tremor and rigidity. I do not take a hopeful view of the outlook in any of these cases; the danger of a recurrence is to be reckoned with at any stage. A child of five has been left in a remarkable hysteroid state with nocturnal delirium that, from the literature, is not an unusual sequel of the disease. Rutmeyer of Zurich reported eight cases of insomnia in children from five to eight, persisting three to six months after the disease; and Leahy and Sands (*Jour. Am. Med. Ass.*, Feb. 5, 1921,) have recently written concerning the same condition; Hofstadt (*Muench. Med. Woch.*, Nov., 1920,) gives a good description of most peculiar nocturnal actions in children from two and one-half to thirteen years which may precede or may follow en-

cephalitis. Eight patients have recovered with legacy of weakness, moderate vertigo, diplopia or slight blurring of vision. Five women and eight men send reports of complete recovery. It is interesting to speculate on how many relapses may occur even in this group; how often in the future we shall see cases of multiple sclerosis, Jacksonian or general epilepsy, localized serous meningitis with simulation of brain tumor, unusual tremors, etc., developing upon the basis of an encephalitis of the last years.

Treatment: There is yet no specific treatment. I feel that nervous tissues from rabbits killed by a fairly "fixed" virus should be prepared in a way similar to that adopted in the Pasteur treatment for rabies and used at least in the chronic recurrent types of the disease. Nothing decisive can be said in favor of hexamethylenamin. Arsphenamin has done no good in two cases of mine; Netter is of the opinion that it does definite harm. Tartar emetic intravenously has not been effective. Netter is still a strong advocate of the Fochier fixation abscess treatment; he cites twenty-five grave cases without treatment by this method, of which 50 per cent died. Out of twenty-seven equally grave cases, nineteen developed local abscesses after the injection of 1 cc. of turpentine, and all got well except a pregnant woman. Netter, like Dr. Margaret Schulze and others, have emphasized the gravity of prognosis in pregnancy. Serum from convalescent encephalitic or poliomyelitic cases has been given intraspinally without positive benefit. The experimental data of Levaditi and Harvier should counsel caution with this method of treatment. Autohemotherapy has been advocated by Mouriquand, Bourges and Marcaudier. Brill reported quick improvement in four out of five patients treated by injecting their own blood serum intraspinally after withdrawing 25-30 cc. of fluid. From my experience opium has not been as successful in controlling sleep and restlessness as chloral and bromid or paraldehyde. In three cases intravenous injection of 2.5 grains of calcium chlorid in 5 per cent solution seemed to have some influence in quieting persistent myoclonus. Hyoscin and scopolamin, hypodermically, will control tremor for a time, as in Parkinson's disease. Although we have learned much from the experiences of the last three years and, even before that, we had advanced far in the classification of infections of the brain and meninges beyond the knowledge of the first half of last century, I cannot help in closing to quote this paragraph on encephalitis from the interesting "Lectures on the Nervous System" of Marshall Hall: "Diseases *will not* suit themselves to our plans. Encephalitis, for example, is sometimes marked almost solely by violent delirium, and is then the *phrenitis* of nosologist; sometimes an early, if not the first symptom, is convulsion; sometimes there is violent headache as the chief symptom. In other cases, the disease is insidious in the highest degree; the patient seems *idle*, perhaps is suspected of *feigning*; he won't move or speak; and there may be *no* other marked symptom. Beware of these things. Cultivate an independent spirit of observation."

THE DIAGNOSIS OF HYPOTHYROIDISM*

By NELSON W. JANNEY, M. D., Los Angeles.

It is very probable that latent hypothyroidism will soon be considered a fairly common disease, although typical cretinism and myxœdema are rare. As a result of a recent study of modern diagnostic methods applicable to this condition, the writer has come to the conclusion that it is frequently possible to diagnose *myxœdema fruste* or Hertoghe's masked type of hypothyroidism where it is little suspected. The diagnosis is based upon the combination of certain clinical symptoms which can usually be regarded as merely indicative, together with the laboratory tests, particularly the basal metabolism. Thus in a small series of consecutive cases of thyroid disease which were analyzed and reported a year ago by the writer, two-thirds were found to be suffering from hypothyroidism, and in only three had the condition been previously diagnosed. As these cases are often greatly benefited and even cured by judicious thyroid treatment, the diagnosis of this condition becomes one of considerable importance. In the present paper, therefore, the clinical and laboratory data of diagnostic importance are collected together with a revision of the differential diagnosis in the light of advancing knowledge.

THE CLINICAL AIDS TO DIAGNOSIS

The family history is important. Questioning may bring out salient points such as history of early or uncontrollable obesity, goitres, protuberant eyes, tremor (thyrotoxicosis symptoms), stunted stature, hairlessness, defective nails, etc., as family characteristics. In doubtful cases in children, the parents should be examined on account of the strong familial tendency. In one instance, the diagnosis became evident in the cases of three children exhibiting retardation of growth through the discovery of marked dysthyroidism in the father.

In the history of the patient the following may prove of importance. In children, obesity, retardation of growth, backwardness at school, disinclination to play due to fatigueability; in adults, increase of weight unaccounted for by habits and diet, lassitude, forgetfulness, lack of vivacity, inability to carry out a vocation which previously was accomplished with ease, or a long history of indefinite ill-health. In adults and children marked predisposition to infections is suspicious in connection with other symptoms.

In considering the diagnosis of hypothyroidism, it is well always to bear in mind that every or any tissue or organ may suffer from a decreased or absent supply of the thyroid hormone. It becomes then particularly important to note the presence of various slight symptoms and signs occurring coincidentally in diverse situations. Among these may first be mentioned the body size in relation to age in the case of children, or to normal adult stature. The growth disturbance due to hypothyroidism sets in very early and is

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

usually marked even when classical symptoms are chiefly absent. Shortness and plumpness of the extremities, as well as the trunk, are often of significance. The hands and feet may resemble in slight degree the spade-like hand of hypothyroidism described by Gull; flattened dorsum and palm, due to defective musculature, and weak pyramidal fingers with nail defects about to be described. The feet show similar changes. Owing to the retardation of tendon, cartilage and bone development, flat-foot is unusually common in thyroid children. It would be well if this fact were more generally appreciated by orthopedic specialists, for in these cases artificial arches and special shoes are but palliative, not curative methods.

Certain general features are of some importance. The gait is frequently slow and awkward. Owing to muscular weakness, the sub-thyroid individual tends to stand leaning against some object for support.

The contour of the head in children is inclined to be round, which is emphasized by the obesity. The forehead may be unduly rounded, the eyes and nose smaller than normal, the latter being saddle-shaped. This sign is very commonly met with and is characteristic. The eyelids, particularly the lower, tend to be swollen, and this swelling is not subject to the fluctuations of œdema. The lips may be a little coarser and the mouth and tongue larger than usual.

The skin and its appendages but rarely escape showing a reaction to the disease. They should be systematically examined. A coarse texture and cutaneous dryness are very persistent and early signs. The skin may be atrophic in old cases, be unusually thickened, or exhibit supra-clavicular, cervico-dorsal or lumbar fat-pads. Myxœdematous swellings of the dorsa of the hands and feet are occasionally seen. True myxœdema is rare in the light cases where diagnosis is difficult. It is sometimes perceptible only by a slight thickness of the cuticle. Coolness of the skin and inability to perspire are usually observed. The nails are of considerable diagnostic importance. The following points are pertinent. The size may be decreased, the normal arching absent, and the consistency subnormal even to paper-thinness. Abnormal brittleness may be present, longitudinal or transverse seaming, defective lunulæ and white-spots in the nail matrix. The hair may show defective pigmentation or premature grayness, become thin, brittle, and tend to fall out. The same holds true for the eyebrows, eyelashes, beard, axillary and pubic hair. The eyebrows may be defective in their outer-third (Hertoghe's eye-brow sign). This sign is less important among the Teutonic races, with whom thin eyebrows are normal.

The dentition seldom escapes at least some slight defect. Mention may be made of the delayed eruption of the milk and permanent teeth, imperfect cusp and enamel development, irregularity of position. The palate may be high arched, the uvula long, the tonsils hypertrophied, and adenoids present. It would be well if the nose and throat specialists would bear it more often in mind that tonsillar hypertrophy is frequently

an endocrine, and more particularly often a hypothyroid, symptom, better to be treated with thyroid medication rather than the knife. Grant Selfridge has rendered valuable service in calling attention to this fact.

The examination of the thyroid gland is not of very great importance in most cases. If a goitre be present, we may often with right suspect thyroid deficiency. The same holds true when the gland is scarcely palpable. On the other hand, negative results to palpation by no means exclude hypothyroidism, as the thyroid may be of normal size and consistency, but greatly defective functionally. The writer has found it rather helpful to palpate this organ from behind the patient, eliciting its size, contour and consistency by ballotement. It is well to give the isthmus special attention, as it is directly subcutaneous. A very small or absent isthmus is usually, but not always, indicative of a small thyroid gland. In adults it is advisable to remember that the thyroid undergoes senile involution with advancing years.

Protuberance of the abdomen in small children is often present even when there is no general adiposity. Gastro-intestinal disturbances, particularly constipation, are extremely frequent. The writer has often remarked the small appetite and intake of food rather than the abnormal appetite accredited to cretins in classical descriptions.

The pulse, respiration and temperature rate are markedly depressed. These signs are of great importance, as they are very frequently present. Even in children the pulse rate will run much lower than the normal for the age of the patient. It is well to bear in mind that even myxœdemic patients with very slow pulses, say, 50 to 60, may show a lability of pulse to excitement. The pulse is usually at its lowest level in the early morning. It has long seemed remarkable to the writer that bradycardia is usually regarded as a condition of little significance if unaccompanied by cardiac or toxic disease. A subnormal temperature is often significant if accompanied by other signs and symptoms. The same applies to the respiratory rate.

Delayed appearance of the secondary sexual characteristics in young individuals is suggestive. Nocturnal enuresis in children may be due to hypothyroidism (Leonard Williams). Impotence in men, menorrhagia, amenorrhœa or sterility in women is frequent in severe cases. The psychic sexual sphere is usually affected. Lack of the *libido sexualis* is frequent, mysanthropy, mysagyny, marital incompatibility and masturbation.

The mind is the seat of abnormalities in practically all cases of hypothyroidism. In children one may observe lack of mental activity. The disposition to play may be lost. The child tends to be quiet and dull, falling behind in his classes, in spite of all efforts on his or his teacher's part. In small children nervousness is frequently observed. They scream at little provocation. In adults, lack of the power of concentration, of memory and mental confusion are complained of. There may be irritability. The normal lability of mood gives way to inertia and depression. Psychoses may develop. Certain cases may exhibit

psychic symptoms so prominently as to be regarded by alienists to have definite mental disease.

Laboratory tests have of late become of especial importance in the detection of hypothyroidism. The basal metabolic rate is decreased in prolonged inanition, diabetes with inanition, and in subfunctional endocrine conditions. Inanition and diabetes can readily be excluded. Among the ductless glandular diseases of subfunctional type, depressing the metabolic rate, hypothyroidism is more frequently met with than any other. It also lowers the metabolism to a greater extent. It must, however, be carefully borne in mind that in other endocrinopathies the metabolic rate may be considerably depressed. Moreover, the difficult cases from the diagnostic standpoint are just those in which there is insufficient reduction of the metabolism to regard them with great certainty as hypothyroidism. Thus the normal limits of the metabolic rate may be regarded as \pm or -10 per cent deviation; cases of -25 to -40 per cent are probably hypothyroid, but the likelihood of other glandular dystrophies such as hypopituitarism or ovarian dystrophy is increased when only a moderate reduction of the metabolism (from -10 to -25 per cent) is found.

The differential blood-count is sometimes of distinct diagnostic aid in obscure cases. In hypothyroidism there is a tendency to reversion to the foetal type. The polymorphonuclears are decreased, the lymphocytes and mononuclears distinctly increased. In children these variations are normal, but careful examinations will usually show that the lymphocytosis and mononucleosis are in excess of the normal for the age of the patient.

The X-ray is a really important aid to diagnosis in children and young adults. Cases with but a very slight symptomatology may, on röntgenological examination, exhibit wide open epiphyses and a stage of ossification a number of years previous. Siegert, Hermann and Hess have emphasized this diagnostic adjunct.

The diagnosis of hypothyroidism should never depend on laboratory tests alone, nor as can now be stated, solely upon the clinical symptoms. Perhaps, however, too great reliance is being placed nowadays on the basal metabolic determinations, the present enthusiasm suggesting that which met the introduction of the Wessermann reaction. If hypothyroidism be present, there will always be some small accompanying clinical signs to betray its presence, as indicated in the text. The basal metabolic rate should, however, certainly be estimated whenever possible. If, then, in an obscure case we find some trifling clinical suggestions of hypothyroidism and the laboratory reports a depressed basal metabolism, an abnormal blood glucose curve, lymphocytosis, mononucleosis and retardation of growth of the bone nuclei by röntgen-ray, we can frequently establish the diagnosis.

In spite of careful study, the diagnosis may yet remain obscure. It is then that a painstaking application of the therapeutic test will often enable a case to be declared hypothyroid or the reverse. It is not sufficient in carrying out the therapeutic test to merely give a considerable dose of thyroid

extract over a week or two, but rather to observe the effect of varying doses as controlled by basal metabolism determinations. This may be done at fortnightly intervals. After each observation the dose may be increased if the rate still runs subnormal or decreased if the metabolism indicates an increase over the normal rate for the patient. A clinical therapeutic effect accompanying a return of the basal metabolism to its proper level is very indicative of hypothyroidism.

DIFFERENTIAL DIAGNOSIS IN CHILDREN

In infants and young children, the laboratory aids to diagnosis are often less applicable. In the presence of a slight growth anomaly in a child, it may be extremely difficult to fix upon the endocrine organ or organs at fault, contrary to textbook statements. Numerically, the thyroid cases are most frequent. With this in mind, a carefully applied therapeutic test with thyroid extract may solve the difficulty. Should an examination demonstrate that but one system of organs is chiefly affected, it is probable that we are not dealing with hypothyroidism. Thus in a child with defective mentality, should the clinical findings be confined to the central nervous system, we are confronted by a case of true idiocy and not cretinism with lowered psyche.

In an article of the present size it is impossible to enter into a detailed account of the differentiation of hypothyroidism from other diseases of children and adults. Reference may be made to the monographs of McCarrison and Crotti, or the chapter on hypothyroidism by the writer in Barker's *New American System of the Internal Secretions and of Metabolism* (see bibliography).

Hypopituitarism in typical expression can scarcely be confounded with hypothyroidism. In mild cases the diagnosis may not be so easy. The feminine fat distribution (waist to lower third of thigh) and pituitary fossa changes usually suffice to distinguish this condition. The X-ray shows less general bony growth retardation than in hypothyroidism. The laboratory aids to diagnosis are here at fault, as a general similitude to the findings in hypothyroidism exists. A very low basal metabolism is in favor of hypothyroidism. Eunochoidism is distinguished by the prominence of the sexual anomalies, the trochanteric fat padding (Engelbach and Tierney) and the unusual length of the extremities. True infantilism is merely a condition of cessation of development at an early age. In a case investigated by the writer, which seemed to belong to the rare variety of infantilism described by Peltauf, the metabolism was normal. True nanism refers to a very small adult human being, symmetrically developed in all respects. Mongolism is still confused at times with hypothyroidism, though the mutual resemblance in typical instances is but very superficial. The following are the chief points of difference. The mongol has a curious Oriental expression, silken hair, slanting eyes and button-like nose, a pointed tongue, small gracile hands with incurving little fingers. The delay in the ossification is but slight. Rickets and chondrodystrophy are easily distinguished by röntgenological examinations of the bones showing typical lesions.

DIFFERENTIAL DIAGNOSIS IN ADULTS

Too often physicians have a mental picture of typical myxœdema, which prevents them from looking beyond for the atypical but more common manifestations of hypothyroidism. The presenting symptoms of latent hypothyroidism so often direct the attention of the medical observer rather away from than toward the thyroid gland that mistaken diagnoses in light cases of hypothyroidism are frequent. Thus the subthyroid patient may consult the internist for failure of memory and the power of concentration, suggesting the cerebral changes of arteriosclerosis, which itself is not uncommon in hypothyroidism. Gastro-intestinal symptoms such as lack of appetite, dragging sensations in the abdomen or constipation, may send the patient to a gastro-enterologist; a thyroid psychosis to an alienist; again weakness and pains in the joints and limbs or flat-feet may cause the orthopedist to be consulted. Yet all the above symptoms may be but expressions of the lack of proper functional activity of the thyroid gland.

One of the most important conditions confused with hypothyroidism in the adult is neurasthenia. This syndrome is characterized by mental irritability and depression, loss of memory and the power of concentration, eyestrain for little reason, great physical asthenia, parasthesias, reflex gastro-intestinal neuroses, and vague pains in various areas. Yet each and every one of these symptoms may be expressions of hypothyroidism. In general, it seems that if our diagnostic methods were more refined we would have less recourse to the diagnosis of neurasthenia for want of a more definite ailment.

Of the gastro-intestinal conditions, which require differentiation from hypothyroidism, must be mentioned chronic colitis, which may also occur as a complication in hypothyroidism. The intestinal toxæmic symptoms of headache, lassitude, nervousness or mental torpor, loss of appetite, a light anæmia, cold extremities, low blood pressure and small, soft pulse may likewise be of hypothyroid origin and lead to diagnostic errors. Two cases of the writer's series had been unsuccessfully treated by others for ten or more years for chronic colitis with intestinal toxæmia. After the diagnosis of hypothyroidism was reached, both made astonishing improvement on thyroid medication controlled by the basal metabolism.

Chronic muscular rheumatism, or mild arthritides, may be hypothyroid manifestations. As Kocher first emphasized, the muscular and joint pains of hypothyroidism may lead to erroneously considering such patients as suffering from chronic muscular rheumatism or rheumatic arthritides.

Various cachetic conditions, such as anæmia or arteriosclerosis, are mistakenly regarded at times as *sui generis*, when in reality they may be due to subfunctional activity of the thyroid gland.

Mistakes as to the true nature of thyreogenic obesity are common. Application of the usual reduction cures to such cases may lead to a profound asthenia. All cases of thyreogenic obesity, as yet observed by the writer, have been accompanied by

clinical signs of hypothyroidism, permitting of actual differential diagnosis, if properly appreciated.

SUMMARY AND CONCLUSIONS

1. Latent hypothyroidism is much more common than is generally appreciated.
2. With the aid of special diagnostic tests, particularly the determination of the basal metabolism, hypothyroidism can now be certainly diagnosed much more frequently than formerly.
3. A critical survey of the clinical and laboratory data of diagnostic importance in hypothyroidism is given.
4. The differential diagnosis of hypothyroidism from other diseases is briefly summarized in the light of recent knowledge.

Bibliography

- Crotti, A., Thyroid and Thymus, Phila. and New York, 1918.
- Dock, G., in Osler's Modern Medicine, 2nd edition, Vol. 4, 880, 1915, New York.
- Ewald, C. A., Die Erkrankungen d. Schilddrüse, Myxodem u. Cretinismus, in Nothnagel, H., Spezielle Path. u. Therapie, Bd. 21, Wien, 1896, 53.
- Hamman, L., Blood Sugar, Arch. Int. Med., 1917, 20, 761.
- Hirschman, I. I., Blood Sugar, Arch. Int. Med., 1917, 20, 105.
- Hermann, C., Important Differential Points in the Diagnosis of Sporadic Cretinism, Mongolism, Acondroplasia and Rachitis; Arch. Pediat., New York, 1905, 22, 493.
- Hess, J. H., Radiographic Differential Diagnosis of Bone Affections, Med. Clin. of N. A., 1919, 3, 31.
- Hertoghe, Nouvelle Iconographie de la Salpêtrière, 1899, 12, 261.
- Howard, C. P., Myxœdema; a study; J. Am. Med. Ass., 1907, 48, 1226, 1325, 1403.
- Janney, N. W., Chapter on Hypothyroidism, in Barker's "System of the Internal Secretions and of Metabolism," in publication. New York, Appleton & Co.
- Janney, N. W. and Isaacson, V. I., Blood Sugar in Thyroid and Other Endocrine Diseases, Arch. Int. Med., 1918, 22, 160.
- Janney, N. W., and Henderson, H. E., Concerning the Diagnosis and Treatment of Hypothyroidism, Arch. Int. Med., 1920, 26, 297.
- McCarrison, R., The Thyroid Gland, New York, 1917.
- Means, J. H., and Aub, J. C., The Basal Metabolism in Hypothyroidism, Arch. Int. Med., 1919, 24, 404.
- Moffitt, H. C., Affections of the Thyroid in California, J. Am. Med. Ass., 1905, 45, 837.
- Murray, G. R., Myxœdema, in Allbutt's System of Medicine, vol. iv, London, 1908, 345.
- Mackenzie, H., Cretinism, in Allbutt's System of Medicine, vol. iv, London, 1908, 334.
- Osler, W., Sporadic Cretinism in America, Trans. Cong. Amer. Phys. and Surg., 1897, 4, 169.
- Selfridge, G., Endocrine Glands and Their Relation to Vaso-Motor Disturbances of the Air Passages, Cal. State Med. Jour., 1919, 17, 106; *Ibid.* 139.
- Siegert, F., in Pfoufnder and Schlossman "Diseases of Children," 534.
- Williams, L., Adenoids and Nocturnal Enuresis, Brit. Jour. Child. Diseases, 1909, 6, 241.

PERSONAL EXPERIENCE WITH THE USE OF ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY DISEASE.*

By ROBERT A. PEERS, M. D., Colfax, California
Colfax School for the Tuberculous

The reason for presenting the subject of Artificial Pneumothorax in the treatment of Pulmonary Tuberculosis is that this very valuable aid to the phthisio-therapist is not sufficiently appreciated by the medical profession and too little is known of the technic and indications for its use. This is by no means the fault of those members of the medical profession who are not tuberculosis specialists, but the blame must be laid, to a large extent, to the conflicting reports as to its value which have appeared in the medical press from

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

the pens of those who have actually made use of the pneumothorax operation.

There is perhaps no other disease for which more remedies or remedial measures have been offered than have been presented for the cure of tuberculosis, and the history of medicine would probably show that about the subject of the value or the worthlessness of these remedies there has been waged a fiercer fight than about the worth or worthlessness of the remedies put forward for any other disease. And as yet we have no cure for tuberculosis, but out of all the struggle and study and research we have today many valuable aids to cure.

The history of many of these remedies has been very much alike. There have been:

1. Extravagant claims: when the many have testified in glowing terms and the few have urged caution and conservatism.

2. The period of unjustifiable condemnation: when the many have been loud in their expression of lack of approval and the few have continued to experiment.

3. The time of final judgment: when the method or remedy has been declared worthless or when it has been accepted as of value and its true worth fairly accurately appraised.

During the first period, that of extravagant claims, hardly too much can be said in favor of the remedy; it is applied to every type of case whether suitable or unsuitable, case reports are given and conclusions drawn without waiting a sufficient time to see whether or not such conclusions are justified. And the second state, that of condemnation, follows as night follows day. Experience proves that the first claims were unjustified, as they must surely be, having been founded upon the shifting sands of unbridled enthusiasm, unsuitable cases and too hasty conclusions. And during the period of condemnation the good is swept away with the bad, the favorable with the unfavorable, and a measure inherently good when properly applied to suitable cases is, at the worst, completely lost or, at the best, used to only a limited extent of its usefulness.

The operation of artificial pneumothorax has been through these periods of extravagant claims and of unjustifiable condemnation. It is the belief of the author, based upon his experience, that this method has a very definite place in the treatment of tuberculosis and that in certain cases it is the most valuable single measure which we possess. There are times when the results obtained are as striking as those following the use of mercury or salvarsan on the lesions of syphilis, and it was the results seen in such cases that led to the unfounded conclusions of the stage of extravagant claims. But the application of this measure is just as certainly very clearly limited, and it is to the failure to appreciate this fact that we can ascribe the period of unjustifiable condemnation. If one is to place a true value upon artificial pneumothorax he must have a knowledge not only of its limitations, but must know something of the class of cases suitable for its exhibition as well as to be acquainted with the technic of operation. The mastering of the technic is the simplest part of the

acquiring of skill in the application of the operation.

There are two general rules which can be laid down in the matter of determination as to the use of pneumothorax. They are, broadly speaking, true, but are subject to certain exceptions.

1. No patient should be submitted to operation without first having been given the benefit of ordinary measures for two or three months or longer.

2. Pneumothorax should be attempted only where, as far as can be ascertained, the patient will not recover under the ordinary methods.

The reason for the first rule is that many patients, who might at first seem very suitable cases for pneumothorax, and many patients who are very far advanced, will secure an arrest and lose their symptoms under ordinary measures. Whether a patient recovers from tuberculosis or not depends to a very large extent upon his individual resistance to tuberculosis, and the patient's resistance is something which we cannot determine by means of any method of examination at present in our possession. There are certain dangers inherent to the production of artificial pneumothorax, and it is not fair to a patient to subject him to these dangers unnecessarily. Also, to be of value, lung compression must be continued over many months or even years, during which time the patient is more or less tied to his physician or to the neighborhood of the sanatorium at no little expense and inconvenience, and it is likewise unfair to the patient to create such conditions unnecessarily. This paper is entitled "Personal Experience With the Use of Artificial Pneumothorax in the Treatment of Pulmonary Disease," and I would say that, broadly speaking, I should not allow artificial pneumothorax to be used on me personally unless I had had a trial of other measures for two or three months without avail. There are, of course, exceptions to this rule, as in cases of alarming and uncontrollable hemorrhage or of a rapid decline in spite of the use of every other method of treatment.

The second rule, which is rather a modified way of stating the first, is that pneumothorax should be attempted only where, so far as can be ascertained, the patient will not recover under the ordinary methods of treatment. These are the patients, then, from which our pneumothorax cases are to be selected, and in considering results one should bear in mind that every successful pneumothorax case means really the saving of a life which would be otherwise sacrificed. Even 5 per cent or, for that matter, 1 per cent of success, with 95 or 99 per cent of failures, would mean that the measure is justifiable, and the true percentage of success, which is much higher, as can be shown by statistics and by living patients, more than justifies its use.

All patients suffering from tuberculosis can be classified into three groups in their relation to pneumothorax and the advisability or inadvisability of operation.

1. Those in which operation is urgently indicated. These are cases of persistent hemorrhage, where the bleeding is not controlled by rest and

ordinary measures. Some of the most brilliant results are obtained in this class of cases. It is the one positive thing we can do for the control of pulmonary hemorrhage, and the physician who does not use pneumothorax in cases of otherwise uncontrollable hemorrhage is, in my opinion, not doing everything in his power for his patient.

2. There are what may be termed the cases of election. These are patients who are steadily going down hill and in whom the tuberculous process is mainly unilateral. Such patients have one lung in which a large proportion or nearly all is relatively unimpaired and is capable of bearing alone the burden of respiratory function. Given such a case, where the pleural cavity of the diseased lung is not obliterated by adhesions, the change from continuous decline to convalescence is one of the most striking things with which the practitioner can come in contact. It is little wonder that the success in such cases led to unbounded enthusiasm and false claims.

3. There are what may be termed unsuitable cases. In this class are moribund patients; pneumothorax cannot resurrect the dead, early claims to the contrary, notwithstanding. Into this group also fall those cases of advanced bilateral lesions where there is not enough lung tissue in the relatively good lung to carry on the necessary work, or where the activity is pronounced in both lungs. There is a limit beyond which one cannot expect beneficial results. Between the extremes of obviously suitable and just as obviously unsuitable cases there are many border-line patients in which it is impossible to hazard a guess as to the probability of success. Every operator compresses many of these border-line cases with varying results. He does so for a number of reasons; sometimes because of the optimism engendered by previous success; sometimes at the earnest solicitation of the patient, and even against his better judgment; sometimes because of the pleading of relatives, who would try everything that would offer even the least hope in an otherwise apparently hopeless case. In such cases the physician has recourse to his experience and remembers those seemingly hopeless cases which have with time and care become arrested, and he pays heed to the dictates of his heart, which tell him that where he cannot heal it is his duty to comfort.

The complications which have been reported have been many. This being a report of personal experiences, I shall report only those seen by me. The most common complication is the presence of adhesions. When, as a result of previous pleurisy, a sufficient percentage of the lung surface is adherent to the chest wall and the pleural cavity cannot be located, the operation is a failure. Where the lung is partly adherent or bound down by a few dense adhesions, success or failure will depend upon whether the adhesions are so located or are strong enough to prevent sufficient pressure being exerted to immobilize the actively diseased tuberculous process. While one may form a fairly good opinion from examination and before operation as to the probability of the existence of adhesions, in the majority of cases the only real

method of determining whether a compression is possible is by operation.

In a series of ninety-one consecutive cases, which I looked up in my records, I found that twenty-five cases, or 27.5 per cent, could not be compressed at all because of adhesions; thirty-two cases, or 35.1 per cent, could be only partly compressed, and that in thirty-four cases, or 37.4 per cent, we were able to secure complete compressions.

Tables 1, 2 and 3 show just what adhesions mean when expressed in figures of death, non-improvement, improvement and arrest.

TABLE 1

| Results in cases where no gas was injected because of adhesions. Number of cases, 25. | | |
|---|----|------|
| Died | 4 | 16% |
| Discharged unimproved | 17 | 68% |
| Discharged somewhat improved..... | 2 | 8% |
| Apparently arrested | 2 | 8% |
| | 25 | 100% |

Table 1 shows the result in the twenty-five cases in whom it was impossible to locate the pleural cavity. In this group four, or 16%, died; seventeen, or 68%, were discharged unimproved; two, or 8%, left the institution somewhat improved in spite of failure to compress; and two, or 8%, secured an apparent arrest as a result of continued hygienic dietetic treatment. The two who secured an apparent arrest, after being adjudged hopeless, are living reminders of the fallibility of human judgment as exemplified by the Colfax staff.

TABLE 2

| Results in cases of incomplete compressions. Number of cases, 32. | | |
|---|----|-------|
| Died | 7 | 21.9% |
| Unimproved | 15 | 46.7% |
| Improved | 7 | 21.9% |
| Apparently arrested | 3 | 9.5% |
| | 32 | 100 % |

Table 2 shows the results in thirty-two cases of incomplete compressions. In this group seven, or 21.9%, were improved and three, or 9.5%, apparently arrested.

TABLE 3

| Results in cases of more or less complete compression. Number of cases, 34. | | |
|---|----|-------|
| Died | 5 | 14.7% |
| Unimproved | 4 | 11.8% |
| Improved | 9 | 26.5% |
| Apparently arrested | 16 | 47 % |
| | 34 | 100 % |

Table 3 shows the results in thirty-four cases more or less completely compressed. As is to be expected, the results are very much better than in Table 2. Table 3 shows that nine, or 26.5%, were improved and that sixteen, or 47%, were apparently arrested.

The second most common complication in our experience is the occurrence of effusion. This happens not infrequently, and, in our opinion, is not unwelcome, as not uncommonly the fluid fills the entire pleural cavity and acts as a splint, thus

taking the place of the injected air. In that case it does away with the necessity of refilling the pleural cavity with air. If the occurrence of effusion is characterized by a high temperature and much toxemia, we aspirate the fluid, inject a few c.c. subcutaneously, thus taking advantage of autoserotherapy and replace the fluid with air, using the same needle for both operations. When the effusion gives rise to no symptoms it is not disturbed. Sometimes fluid is withdrawn and replaced by air several times. The aspirations and refills are repeated until the temperature becomes normal.

There are many theories advanced as to the cause of effusion in pneumothorax patients, but it seems to me that the experiments of Patterson at Saranac Lake probably furnish the correct explanation. Patterson found that if he injected tubercle bacilli into the pleural cavities of non-tuberculous animals that he failed to secure an effusion but if he reinjected his animals or caused a tuberculous pleuritis in otherwise infected animals that the operation was invariably followed by effusion. Paterson believed as a result of his experiments that the cells of the pleura were sensitized by the original infection and the occurrence of effusion was the expression of the reaction of sensitized cells to the second injection of tubercle bacilli.

It has seemed to me that effusions in pneumothorax cases might be the result of a fresh infection of the pleura due either to extension of the disease from the pulmonary tissue or following an injury to the pleura during operation.

In the series of ninety-one cases above referred to, thirty-two cases developed fluid as a complication. But as twenty-five of the ninety-one cases were not real pneumothorax cases, because no air was injected because of adhesions, the thirty-two cases of effusion occurred in a series of sixty-six patients, a percentage of 48.5. That the occurrence of effusion is not such a formidable nor such a serious complication as one would believe from reading the literature is shown by an analysis of the results obtained in these thirty-two cases as compared with the results obtained in the total of sixty-six cases of both partial and complete compressions.

TABLE 4

| Cases developing fluid effusion during treatment. Number of cases, 32. | | |
|--|----|-------|
| Died | 7 | 21.9% |
| Unimproved | 5 | 15.6% |
| Improved | 8 | 25 % |
| Apparently arrested | 12 | 37.5% |
| | 32 | 100 % |

TABLE 5

| Results obtained in 66 cases, including the 32 cases which had effusion. | | |
|--|----|-------|
| Died | 12 | 18.2% |
| Unimproved | 19 | 28.8% |
| Improved | 16 | 24.2% |
| Apparently arrested | 19 | 28.8% |
| | 66 | 100 % |

A third complication, which is really an annoyance rather than a complication, is the occurrence of subcutaneous emphysema, due to the escape of air from the pleural cavity along the needle track. This is more apt to occur following the first inflation, when a larger needle is used than is customary for refills. By the exercise of care at operation and by carefully massaging over the site of operation to obliterate the needle track, and by the use of a small needle for refills, the complication can be reduced to a minimum, although its occurrence can not be entirely obviated. Subcutaneous emphysema, as we have seen it, is, as stated above, merely an annoyance. The air is soon absorbed and we have seen no permanent ill effects as a result.

Spontaneous pneumothorax, due to tearing of the lung during the separation of adhesions, has occurred. It also happened in one of our cases where the patient coughed violently without premonitory warning, with the result that the needle evidently caused a tear of the lung. As the patient recovered after a rather strenuous twenty-four hours, we were unable to verify our belief that the lung had been torn.

A more serious complication, and one that we have seen in a few cases, is the lighting up of activity in the good lung. The best way to avoid this difficulty is to compress slowly, not giving too large doses at any one operation, and allow the other lung to accommodate itself to the extra load which it must necessarily carry.

These are the principal complications which we have seen. Pleural shock and air embolism we have never seen, nor have we ever seen a death which we could attribute to the production of the pneumothorax.

The instrument which we use is the ordinary Floyd Robinson apparatus. We have used the same apparatus since we commenced doing the work, and have seen no reason to change. We have seen many different forms of apparatus, some simple, some complicated, some of them home-made, and they all have been praised by their operators. Any one with a little mechanical ability and ingenuity can construct one at home. As with any other operation, success depends more upon the operator than upon the instrument he uses.

The technic is very simple and can be found in the abundant literature on the subject. The principal points to be remembered are to have the track of the needle well anesthetized and to never inject air unless one gets a negative oscillating pressure on the manometer.

The intervals between doses and the size of the dose to be given depends upon the individual case. It is our practice to commence with small doses, except in urgent cases of hemorrhage, and to refill frequently with gradually increasing doses until we secure the necessary compression. From then on the refills are given as often as is necessary, and this is ascertained by questioning the patient, by watching the patient's record book for the occurrence of symptoms of reduced pressure, such as increased cough and temperature, and by careful fluoroscopic screening to determine whether the

lung is expanding. It is not possible to lay down definite rules in these matters any more than it is to lay down rules for the dosage of tuberculin. One can get satisfactory results only by individualizing.

In conclusion, I would like to report a few cases to illustrate points I wish to impress:

Case 1. Mrs. B. entered the Colony April, 1915; has not been feeling well since birth of second child in 1909. Tuberculosis diagnosed 1911. By taking excellent care of herself has managed to about hold her own and gain some weight. Recently has been feeling only fairly well. Examination shows extensive lesion of the left lung, with cavitation and minor involvement of the right apex. In spite of being kept more or less continually in bed for sixteen months, patient failed to improve and continued to run a temperature. In August, 1916, artificial pneumothorax was commenced. Because the fluoroscope showed the presence of a large cavity held to the chest wall by a rather dense adhesion, compression could be given only with the greatest care. Eventually the adhesion gave way without tearing the lung tissue. Patient now has been receiving pneumothorax for fifty-seven months and is in good general health, well nourished, without fever, with very little sputum, which is free from tubercle bacilli, and returns once in eight weeks for re-fills. Lesion apparently arrested.

This case illustrates two points I would like to make: First, that by means of lung compression a hopeless invalid can be changed to a happy, apparently healthy individual; and, second, that the patient on whom artificial pneumothorax is commenced is more or less tied to his physician over a long period of time, and compression should not be commenced without first giving the patient a chance with other measures. Case one is, of course, an extreme case, as it is relatively very rare to keep up pneumothorax over so long a period of time.

Case 2. T. M. admitted August, 1915, with advanced tuberculosis of both lungs, especially the left. Patient continued to get steadily worse in spite of absolute rest in bed and ordinary methods of treatment; also suffered from harassing cough, which required the use of codein and heroin several times daily. Pneumothorax commenced October 7 (about two months after arrival) and continued to November 27, nine compressions being given. At this time effusion commenced and continued to increase in volume until the pleural cavity was completely filled. Patient left the institution May 1 an apparently arrested case, having gained more than forty pounds in weight. The pleural cavity was filled with fluid at the time of departure.

November 9, 1916, he wrote that he was working every day and getting stronger all the time. He continued to work hard at manual labor until March, 1920, when he contracted influenza. He returned to Colfax June 9 of that year. Examination at that time showed that the left lung was largely cicatricial tissue, but that there had been a lighting up of the old focus on that side, probably as a result of the influenza. At the time of

examination his temperature was normal and he felt well, but tired easily. There were tubercle bacilli in the sputum. He re-entered the Colony for three months, and since that time has been working hard every day and at last reports was in good health.

This patient was apparently the most hopeless case we have seen which has secured an arrest following pneumothorax. It illustrates the fact that the occurrence of effusion may be not a complication, but rather an incident of decided benefit.

Case 3. P. B. entered the hospital February, 1917, with an extensive lesion involving the greater part of the right lung and a slight lesion at the left apex. In spite of absolute rest in bed, patient continued to run a temperature daily of 101 to 102. Artificial pneumothorax was commenced April 27 (two months after arrival). After the third compression, May 7, temperature dropped to normal and has remained normal since. Patient discharged November 3, 1917. Has been working as a chauffeur for more than three years and at last report was in perfect health.

This case illustrates a very rapid drop in temperature, which is sometimes seen following the commencement of pneumothorax, particularly where a complete compression is obtained and where one lung is in good condition.

CONCLUSIONS:

1. Artificial pneumothorax is a very distinct aid to cure in some otherwise hopeless cases.
2. The only real difficulty in administering the treatment is the presence of adhesions.
3. The dangers of this form of treatment are relatively very slight if proper precautions are taken.
4. The principle disadvantage is the long period of time during which compression must be kept up. This might, in a measure, be obviated if the general practitioner familiarized himself with the technic of re-fills.
5. No case, except the moribund, or those with large bilateral lesions, should be considered absolutely hopeless until after pneumothorax has been tried and has failed.

MONTHLY FLUCTUATIONS IN THE NORMAL METABOLIC RATES OF MEN AND WOMEN.*

By ALBERT H. ROWE, M. S., M. D., Oakland, and MARGARET EAKIN, B. A.

This discussion of normal fluctuations in the metabolic rates of men and women is attempted with the hope of pointing out certain probable variations in the metabolic curve in the female and possibly in the male as well. All such data and hypotheses bearing on this subject are of great importance since the final word has not been said about the normal values of basal metabolism. Benedict in his monograph of 1919, on metabolism writes, "Investigators in pathology are continually confronted by the paucity of normal data with which to compare their observations", and Gephart and Du Bois say, "In the study of

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

metabolism, the normal control is coming to be recognized as the weakest part of the experiment."

The normal limits of basal metabolism for adults between the ages of twenty and seventy have been very carefully established by Benedict in his recent monograph, "A Biometric Study of Basal Metabolism in Man." These normal predictions have been obtained by the mathematical biometric formulas which have taken into account age, weight, stature, and sex, and are based on the constants of about 250 adults. It is interesting that these same values of Benedict's for normal men and women can also be approximately obtained from straight line standards we have plotted as shown in Chart I. These straight lines are obtained by using the original normal values of Du Bois for men and women. In the case of men, the starting point is 39.7 calories per hour per square meter of body surface for the age of twenty, and the decrease per year is .15 calories while in women the starting point is 36.9 calories for the same age and the decrease is .123 calories per year.

In table I, we have tabulated the metabolic rates of a separate patient for each age from 20 to 60. The rates have been estimated by the use of Du Bois' newer standards, by the use of Benedict's tables, and by the use of the straight lines as plotted above. These rates show that little difference exists between the results obtained by Benedict's tables and by the straight lines. Our table shows, however, that the difference between the values obtained by Benedict's figures and by the newer normals of Du Bois gradually increases toward the end of each decade, those values of Benedict's being uniformly higher. It is interesting that these differences are approximately equal at the beginning of each ten-year period. These results influence us to agree with Benedict's statement that, "changes in metabolism after physical maturity are not merely continuous, but are uniform in amount, so that they can be reasonably well represented by the slope of a straight line," and we feel that each age should be taken into account in the establishment of normal standards.

For our work we have continued to use Du Bois' standards, since most of the results published to-day are still based on those. However, in the future we intend to use the standards established by Benedict or as estimated by the straight line standard. In the interpretation of our results, we feel that metabolic rates above +20% or below -20% are unquestionably pathological. Those results however, which are between +10 and +20% and -10 and -20% must be interpreted according to clinical evidence since the upper and lower limits of normal metabolism are not as yet definitely established for all types of individuals.

In passing it is well to point out that insufficient data is at present available for us to be sure about the normal basal metabolism of children and youths up to the age of twenty and of people over the age of fifty. Benedict says that such data is especially lacking for girls and he is unable to say whether the gradual reduction in metabolism

which occurs from childhood to old age can be represented by a straight line from childhood through puberty to the age of twenty and by a straight line after the age of seventy to death as it probably can be between the ages of twenty and seventy. It is indeed possible that as the girl and boy mature sexually their metabolism decreases rather suddenly, to which view certain of our experiments incline us to believe.

EXPERIMENTAL WORK.

Our experimental work of the last year has been devoted to a study of the possible influence that the sexual glands have on the normal metabolic rates of men and women. Since the thyroid controls the metabolic rate to a large extent, any fluctuations in the metabolic rate associated with the sexual glands would probably be due to the resulting activity of the thyroid.

INFLUENCE OF MENSTRUATION.

Much clinical evidence supports the idea that the thyroid is influenced by ovarian activity. For instance it is well known that the thyroid usually enlarges with puberty and menstruation, with marriage, during pregnancy, and often with uterine or ovarian congestion. Goiter occurs more frequently in the female than in the male and most frequently during sexual life. It is interesting that Gaskell, as reported recently by Bear, states that the thyroid was derived from the uterus in the paleostracan ancestor. Thus it appears probable that a definite influence is exerted by the ovary on the thyroid gland.

That the metabolic rate is influenced by menstruation was first pointed out by Snell, Ford and Rountree in April of last year. No other investigations of this effect of menstruation on metabolism have been reported. These investigators, however, only devote two paragraphs to their observations and publish a chart which shows that "a rather constant rise occurs during menstruation or in the pre-menstrual period, the rise being followed by a post-menstrual fall." Ten cases were studied. Of these, two showed practically constant rises and six constant rises varying from 4% to 14%, the average being 10%, while in two a drop in rate was encountered. Values outside normal limits, $\pm 10\%$ were infrequent.

Our study of the effect of menstruation on the metabolic rate of women up to the present time has been made with the modified Tissot apparatus on seven subjects, one of whom is pregnant, and from this work we feel that we can agree with the general conclusions of Snell, Ford, and Rountree.

Our charts of non-pregnant women in "Series A," show first, a uniform pre-menstrual rise occurring within the week preceding the onset of the period, with the exception of the last observation in subject 4, during the carrying out of which test the patient went to sleep. This last rate would have been eight to ten points higher if she had not slept and this lowering emphasizes the importance of keeping the subject awake during the test. Secondly, our charts show that with the onset of menstruation or possibly a few hours

Table I

A Comparison of Metabolic Rates Based on the Standards of Benedict and Du Bois and the Straight Line Standard of Chart I

| Case Number | Name | Age | Sex | Metabolic Rate according to Standard of Benedict & Du Bois | Metabolic Rate according to Straight Line | Difference between rates | Difference between rates from Benedict's & Du Bois | Difference between rates from Benedict's & Straight Line |
|-------------|--------|-----|-----|--|---|--------------------------|--|--|
| 61 | FA | 20 | F | +202 - 01 | +125 | -232 | -077 | |
| 14 | PC | 21 | F | +446 +418 | +451 | -28 | +05 | |
| 77 | W.H.O. | 22 | F | -552 - 22 | -68 | -368 | -128 | |
| 63 | H.H.A. | 23 | F | +120 + 86 | +119 | -34 | -01 | |
| 53 | R.T.C. | 24 | M | +1358 +115 | +1245 | -208 | -062 | |
| 5 | M.H. | 25 | F | +435 + 112 | +462 | -323 | +027 | |
| 80 | H.M.O. | 26 | F | -188 - 496 | -119 | -308 | -069 | |
| 95 | R.O. | 27 | F | +121 + 384 | +332 | -826 | -378 | |
| 99 | C.O. | 28 | F | +80 + 0 | +466 | -80 | -334 | |
| 1 | G.B. | 29 | F | +68 - 16 | +336 | -84 | -344 | |
| 107 | A.W.G. | 30 | F | -259 - 60 | -36 | -341 | -101 | |
| 38 | H.J.K. | 31 | F | +1104 + 962 | +128 | -142 | +176 | |
| 49 | R.R.S. | 32 | F | -772 -110 | -818 | -328 | -046 | |
| 19 | R.E.B. | 33 | F | -722 -1085 | -172 | -373 | -25 | |
| 33 | H.B. | 34 | F | +58 + 315 | +727 | -275 | +147 | |
| 98 | F.P. | 35 | F | +238 +225 | +228 | -13 | +40 | |
| 44 | R.E.D. | 36 | F | -497 -1045 | -623 | -548 | -126 | |
| 4 | A.K. | 37 | F | +1073 + 718 | +126 | -355 | +187 | |

Table I continued

| Case Number | Name | Age | Sex | Metabolic Rate according to Standard of Benedict & Du Bois | Metabolic Rate according to Straight Line | Difference between rates | Difference between rates from Benedict's & Du Bois | Difference between rates from Benedict's & Straight Line |
|-------------|--------|-----|-----|--|---|--------------------------|--|--|
| 24 | T.B. | 38 | F | +1872 + 845 | +144 | -1027 | -432 | |
| 17 | M.L. | 39 | M | +464 +347 | +448 | -117 | -16 | |
| 50 | T.C. | 40 | F | +247 + 26 | +201 | -013 | -046 | |
| 94 | L.M.C. | 41 | F | +15 + 032 | +608 | -058 | +458 | |
| 73 | H.P. | 42 | F | +568 + 325 | +895 | -243 | +327 | |
| 92 | L.E. | 44 | F | +283 +230 | +3075 | -63 | +145 | |
| 78 | I.S. | 45 | F | +206 +159 | +236 | -47 | +30 | |
| 31 | B.G. | 46 | F | -276 - 98 | -348 | -704 | -072 | |
| 42 | W.H.N. | 47 | F | +327 +299 | +306 | -88 | +09 | |
| 28 | M.C.M. | 48 | F | -58 -140 | -728 | -82 | -148 | |
| 11 | A.H. | 49 | F | +339 +282 | +328 | -117 | -11 | |
| 62 | N.O. | 51 | F | +214 - 227 | +313 | -441 | +039 | |
| 41 | L.C.C. | 52 | F | +286 - 70 | -106 | -414 | +18 | |
| 68 | F.H. | 53 | F | +365 + 566 | +129 | -399 | +325 | |
| 58 | S.A.H. | 54 | F | +715 - 077 | +637 | -792 | -078 | |
| 59 | T.W.H. | 55 | F | -228 -232 | -228 | -54 | 0 | |
| 8 | J.S.R. | 57 | F | +461 - 257 | +552 | -718 | +091 | |
| 36 | D.H.P. | 58 | F | +1695 + 743 | +167 | -1152 | -025 | |
| 43 | G.T. | 59 | F | -33 -120 | -408 | -87 | -078 | |

Chart I

Straight Line Standard of Heat Production in Normal Men and Women based on the Original Values of Du Bois.

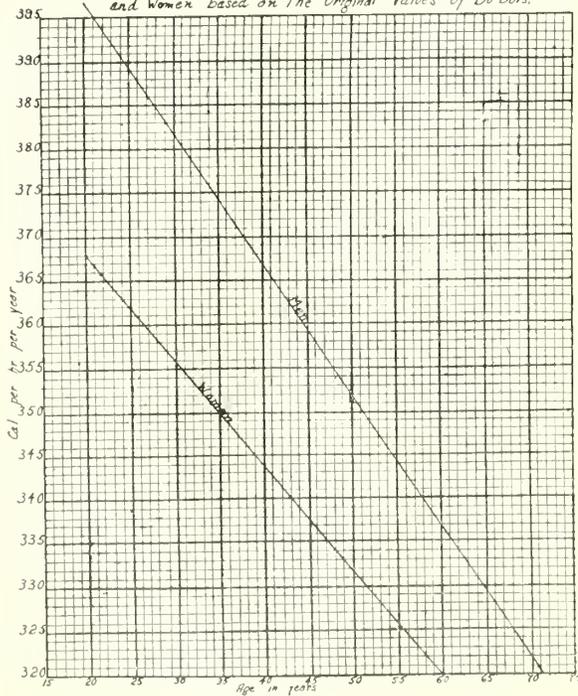


Chart II

Series A Subject 1 Age 46

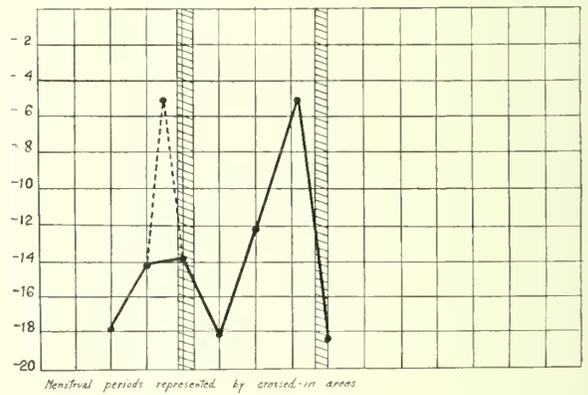
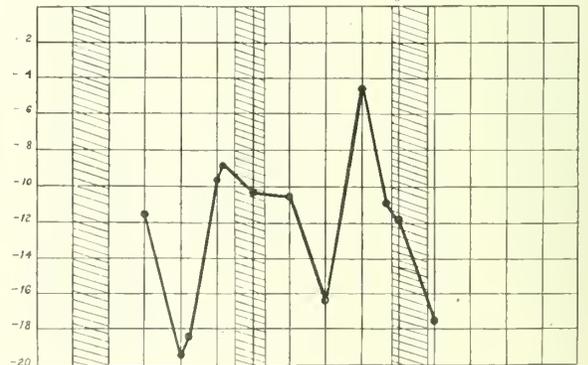


Chart III

Series A Subject 2 Age 23



before, the metabolic rate probably falls and may reach its lowest level during the menstrual period or within the following two weeks.

All of the rates in our cases fluctuate up to a maximum of from 13 to 18 points. The low levels of -18 and -19 in subject 2 occurred in a normal subject who certainly showed no signs

of glandular deficiency. Had these results been obtained by Benedict's standards they would have

Chart IV
Series A Subject 3 Age 27

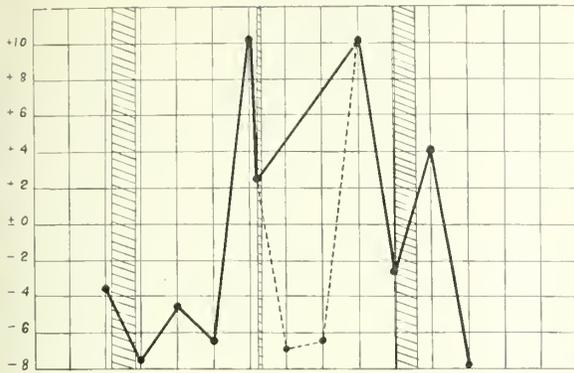


Chart VIII
Series C Subject 1 Age 40

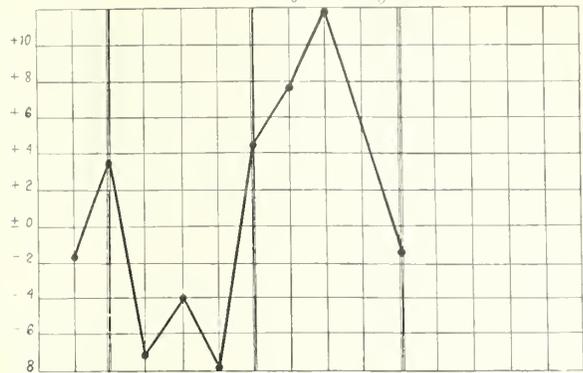


Chart V
Series A Subject 4 Age 31

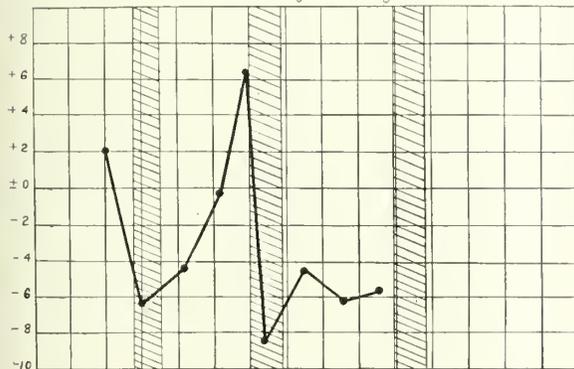


Chart IX
Series C Subject 2 Age 22

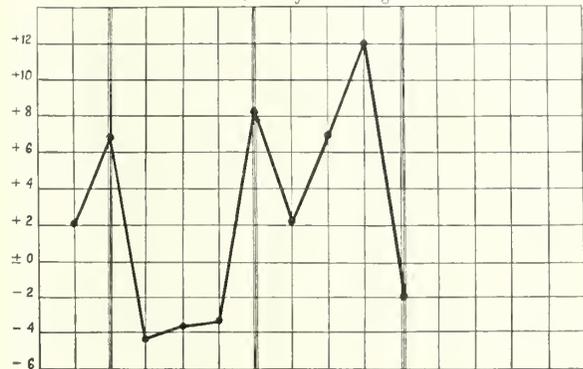


Chart VI
Series A Subject 5 Age 15 Series A Subject 6 Age 13

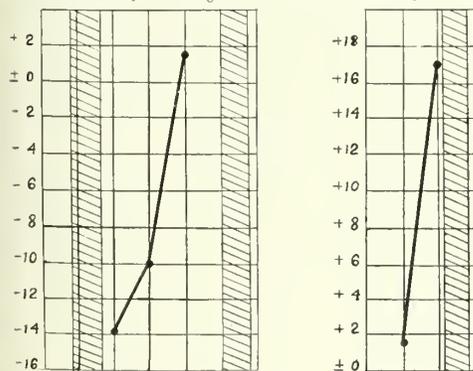


Chart X
Monthly Fluctuations in the Basal Metabolic Rate of a Normal Man.
Taken from Benedict, *Carn Inst Wash Pub 187 1913 Table 31 p 38*

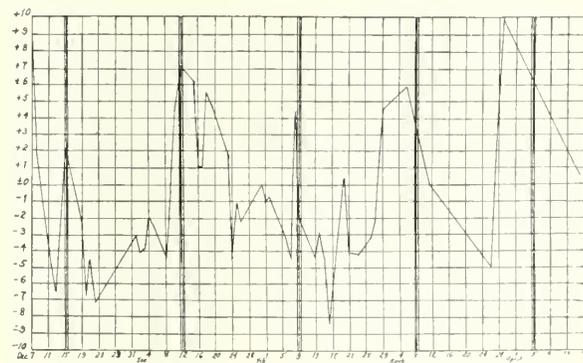
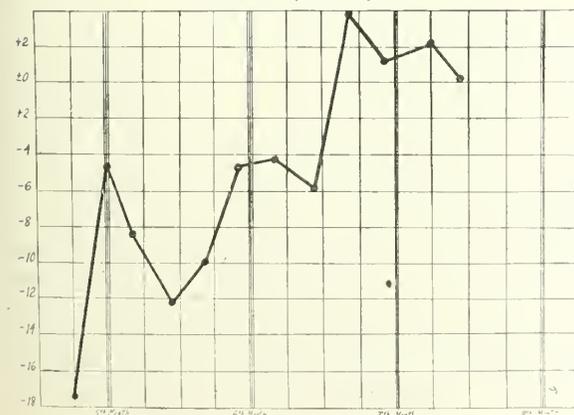


Chart VII
Series B Subject 1 Age 33



been about three points higher. However, if subject 3 had been calculated by Benedict's standards her high rates would have been in hyper-thyroid limits. These results serve to show the lack of value of single determinations in the limits of ± 10 to $\pm 20\%$.

In subjects 1 and 3 dotted lines have been drawn to indicate the possible fluctuations in the metabolic rates had the cases been studied at more frequent intervals. The high value in subject 6 may be due to the fact that menstruation had only been established two months. The low values obtained in subject 1, may have resulted from the fact that definite signs of menopause are present. It is not improbable that heat production decreases

suddenly with the onset and cessation of menstrual life.

That menstruation influences the metabolic rates of women, therefore, seems quite probable. We feel that this menstrual influence should be recognized and taken into account in the establishing of a normal standard for women. Benedict has established his normals from one or two separate observations on over a hundred women, but has entirely ignored the menstrual influence on the normal results.

Moreover, clinically, it is important for us to realize that the metabolic rate varies according to the menstrual cycles. No rate of a woman should be quoted without a record of the probable pre-menstrual and post-menstrual intervals. It is interesting to know that literature contains records of hyperthyroidism which is present only at menstruation. Such cases might have a post-menstrual rate of +8 to +12% and a pre-menstrual rate of +20 to +30%, and unless the symptomatology were definite the diagnosis might be missed if only the post-menstrual rate were taken. A hypothyroid case might likewise be overlooked, if a pre-menstrual rate of -14 to -10% were obtained. Of course the clinical manifestations are in all cases of the greatest importance.

Nearly every woman, whether normal or abnormal, has a menstrual history suggestive of a heightened metabolic rate before her menstrual period. Frequently there is emotional instability, excessive nervousness, some sensations of heat and even slight increase in perspiration. Such a record of increased thyroid activity with menstruation is cited.

Mrs. H., age 42, married, has had typical symptoms of exophthalmic goiter for two years. Her rate at present is +54% and she has marked signs of hypertrophy and decompensation of the heart. Her thyroid enlarges and goiter becomes painful for three or four days before her menstruation sets in and as soon as the period starts she gets relief. She can tell when her period is coming by the pain and swelling in her neck.

VARIATIONS IN THE METABOLIC RATE DURING PREGNANCY.

Many clinical facts point to the increased activity of the thyroid during pregnancy. Lange, in 1899, was the first to point out the usual enlargement of the thyroid which occurs in pregnancy, and thought that where no hypertrophy occurred, toxæmia was apt to result. Obstetricians have confirmed this observation, but not his idea as to the cause of toxæmias, and they find hypertrophy occurring usually after the sixth month. De Lee and Williams both state that hyperthyroidism may develop in pregnancy, and Osler says that pregnancy may cause the disappearance of myxedematous symptoms, which symptoms may reappear after delivery. Certain surgeons, Bear writes, are afraid to remove as much thyroid in the pregnant as in the non-pregnant woman. Finally, obstetricians report increased pulse rates, moister skin, slight mental irritability, and certain

other symptoms, which would point to increased thyroid activity during gestation.

We are now investigating the metabolism curves in pregnant women and hope to have some definite information on this subject at a later date.

One patient has been observed already from the fifth to the eighth months of her pregnancy. The curve is shown in Series B, at this time, only because of the apparent corroboration of the clinical impression that thyroid activity increases during the last months of pregnancy. The chart shows a progressive rise in the level of the metabolic rate after the fifth month. If subsequent work should substantiate this curve, it would be most interesting to determine the exact cause for such increased metabolic activity. It is interesting that Murlin and Carpenter, in 1911, decided from a study of three pregnant women during the ninth month of pregnancy, that the energy metabolism of the pregnant woman is specifically higher than that of women in complete sexual rest.

DAILY VARIATION IN METABOLISM IN MEN.

The possibility of variations in the metabolic rate of men which may be associated with a possible cyclic fluctuation in the sexual gland activity of the male similar to that existent in the female comes to our mind. Such a sexual cycle in the male has been suspected by many psychologists, but no method of obtaining an idea of sexual gland activity has existed heretofore. Through our studies on the effect of menstruation on the metabolic rates, however, we now feel that sexual gland activity can possibly be indirectly estimated by the study of the metabolic curve in the female and possibly in the male also. We are, therefore, at the present time doing frequent metabolic tests on several male subjects, hoping thereby to obtain data which will indicate whether such fluctuations in sexual gland activity do exist in the male.

Two curves are produced at the present time in Series C, though no claim as to their value is made. Both seem to show a three to four weekly rise similar to that observed in the pre-menstrual period of women. Both curves are greatly heightened toward the end of the second month, this being due to the undoubted uncontrollable excitement resulting from the collegiate boat race in which Subject 1 was a participant. Mental excitement is thus shown to be a possible factor in the raising of the metabolic rate.

In reviewing the normals which Benedict has used for men, one subject was found to have had 53 metabolic tests done at very frequent intervals. We have plotted these results graphically in Chart 10, and very suggestive rises in the metabolism level at rather definite monthly intervals are brought out. Benedict was unable to explain these fluctuations except by the effect of unusually cold weather. The possibility of a cyclic variation in the metabolism of men evidently has not occurred to Benedict as an explanation for these variations. We realize that our work on the male is little better than a hypothesis. However, we have demonstrated that normal changes in the metabolism level, such as Benedict found, do exist and they

must be explained in some way, and must be taken into account by those doing basal metabolic work.

SUMMARY.

1. All metabolic rates are probably influenced by sexual gland activity.
2. The menstrual cycle produces a definite metabolic curve in women, the highest point being in the pre-menstrual week.
3. It is possible that the metabolic rate gradually rises during the last months of pregnancy.
4. There may be a metabolic curve in men associated with a possible sexual gland cycle in that sex.
5. We hope that this article may help to point out certain problems which are important in the establishment of accurate normal standards of basal metabolism.

Bibliography

1. Harris and Benedict: A Biometric Study of Basal Metabolism in Man. Carnegie Institution of Washington, 1919.
2. Bear, J.: The Thyroid—Its Relation to the Female Sexual Sphere. Virginia State Medical Monthly, vol. 46, 1919, p. 113.
3. Snell, Ford, Rountree: Studies in Basal Metabolism. American Med. Association, vol. 75, 1920, p. 515.
4. Carpenter and Murlin: The Energy Metabolism of Mother and Child, Just Before and Just After Birth. Archives of Internal Medicine, vol. 7, 1911, p. 184.
5. Rowe, A. H.: Basal Metabolism in Thyroid Disease as an Aid to Diagnosis and Treatment, with Notes on the Utility of the Modified Tissot Apparatus. California State Journal of Medicine, Sept., 1920. Hutchinson Building, Oakland.

TICS, AND THEIR TREATMENT*

By THOS. C. LITTLE, M. D., San Diego.

My object in presenting to you these studies is three-fold: First, to show the clinical facts connected with the case, which are of themselves of intrinsic value; second, to give the tics their proper place among the motor affections of nervous disease, and third, to study the avenue of approach for their correction.

The word tic has been so misused, and the significance so varied in interpretation, that in the discussion there must be a definite conception of the scope and use of the term.

Tics, then, will be limited in our use to a mental condition which exhibits non-painful motor phenomena outside of the radius of the conscious, consisting of an abrupt momentary muscular contraction, more or less limited, involving the face, neck, trunk or limbs. A pathological habit, the stimulus being ideation, originating in a cortical reflex, whose expression is a motor reaction.

Spasm is most frequently confounded with tic. It consists of the same reaction, from the motor standpoint, but lacks the essential central stimulus in reaction.

CASE REPORT

Harry A., age 23, first studied in 1905, a dentist by occupation.

Father died at 42 of alcoholic nephritis. He was an inmate of a Keeley Institute at three different times and was classed as a dipsomaniac. His mother is 58, and has had migraine since six years of age.

One paternal aunt had spasms—Tic (?); one maternal aunt an epileptic, and another a sufferer from migraine.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

Patient's grandfather died at 51 of apoplexy. Two brothers are living. One is 31, a doctor and a drug user. The other is 28 and an apoplectic. Two brothers died in infancy. One sister is living. She is 25, married, and suffers from hysteria.

Our patient had what was accepted as St. Vitus Dance during childhood, and at 12 was "glassed" for a blinking spasms (?).

At 18 he lost the use of his left hand for three months as the result of maintaining himself in the water in an overturned boat for an hour. He graduated in dentistry at 22 and began practice. For about three months previous it was noticed that he turned his head to the right at regular intervals. He explained this as being a movement which he executed in his work at the dental chair. At the time he came under observation the tic had become a fixed habit, appearing about every half hour.

Here, then, is a tic springing from an occupational movement. The patient is unable to concentrate on his work, his will passing from the matter in hand to the movement of his head. Repetition has changed a voluntary act into an automatic habit.

Voluntary movement of the head, reinforced by strict attention to modified Brissand exercises, with re-education, corrected the habit within six months.

He was under observation for a year and then went to a distant city.

During the winter of 1918 he had influenza, with considerable involvement of the throat, and developed a tic of the larynx, which consisted in gurgling noises appearing with each six or seven inspirations and extended over the time of two normal respiratory periods.

In November, 1919, he again came under observation and he was put on a system of breathing exercises modified from the Brissand. The treatment relieved him and corrected his habit within three months.

The patient has a son eight years old with a (Blephonic) tic.

The case of Harry A. is selected as a prototype because the man is, and has been during his life, in many ways above the average, physically and mentally; hence, in the discussion one is not annoyed by the recurrent thought of degenerative changes, and by response to training he has shown a mental twist, not a mental disease.

The motor part of the tic was originally directed to a definite object, provoked by a definite cause, and the disappearance of this cause does not justify the conclusion that it had not existed.

In my studys of tics during the past twenty years there is no record of their development except upon soil prepared by psychical predisposition. The exciting causes depend entirely on circumstances surrounding the individual and, while one is able as a rule to ascertain the initial cause, yet, owing to the tendency of the subjects to flights of imagination and a fantastic picture of themselves, it is by no means always easy to tell the true from the false.

Tics may occur at any age except infancy. It is the development of the psychical function at about eight years that revelation of its imperfections, if such exist, becomes possible.

Heredity is of common occurrence. To this Charcot attaches the greatest importance. The

literature abounds with examples. Gintrae's cases, two brothers had similar tics. Blache's patients were three children in the same family. A father and two sons, of whom Latulle has given an account, were blinkers. Meigh and Feindel describe O.s tic and carry it through three generations.

Dissimilar heredity in any form, neuropathic or psychopathic, is no less frequently met with, and emphasizes the association of tic with all the psychoses and neuroses.

It is a matter of general observation for a Tignieur's father to be an alcoholic, his mother neurotic, brother or sister an epileptic or migraine, with grandparents suffering with a neuroses or psychoses.

It is a matter of further observation of tic that in the families mental instability and intellectual superiority have been repeatedly conjoined.

Of the pathological anatomy of tic we have no knowledge. Postmortem examinations of the subject have shown no changes.

Negative findings do not preclude organic changes, and probably further study under different methods will throw some light on the subject; but at present, as with numbers of the neuroses and psychoses, our observations are limited to the symptoms.

Tic, then, is a psycho-motor affection and two inseparable elements unite into its constitution—a mental defect and a motor defect.

The attitude of the mind, which shows the prevailing defect is the will, which takes the form of either volitional debility or volitional versatility, this being characteristic of the mind of a child and, continued for years, shows partially arrested mental development; hence, "infantile" describes the patient's mental state. Speaking generally, a degree of mental instability is the distinguishing feature of a patient suffering from tic.

The motor defect is the result of a motor reaction, the stimulus being an idea. The types of tic are innumerable, depending only on the variation of ideas which can be expressed through the motor apparatus.

In some instances tics are commonly held to be an affection of no moment and again notoriously rebellious to any line of treatment. Either extreme is not fair. As far as life itself is concerned, they are of no moment; but they render its living often intolerable and some degree at least of relief is obtainable. These sufferers should have our attention.

Practically all medicinal agents used in the treatment of nervous and mental diseases have been used in the tics and all have proven their worthlessness. Medicinal, electrical, hydro-therapeutic, surgical and suggestion have all been tried and failed.

In 1851 Blache's use of medicinal gymnastics in abnormal chorea was attended with excellent results; the principle used being the regular execution of given movements by the group affected to the movements of the pendulum of a clock.

This forecasts the modern methods of re-education now so successfully employed to combat tic, which appeals to the intelligence, good sense and

will of the patient to provoke an inverse effort at the moment when the tic begins. The credit of establishing treatment by forced immobility is due to Brissand, who, in 1893, devised a method of motor discipline for cases of mental torticollis with most gratifying results. This consisted in a continuation of the discipline of the movements with a discipline of immobilization; the idea being to cause to be performed slow, regular, accurate movements to order, bringing into play the muscles of the area in which the tic is localized and at the same time modifying the activities of all other muscles of the body. All movements should be made before a mirror. It must be borne in mind that the exercises should be graduated, and at no time should the fatigue point be reached. Even the most insignificant gain will rapidly grow, provided the patient's attention is not overtired.

Preceding each drill or exercise a few moments should be devoted to frank and open conference, lucid and sincere explanations, patience, courage and interest on the part of the medical adviser, teaching faith and perseverance on the patient's part. With this course maintained the victim of tic will speedily unlearn his bad habits and, in addition, learn not to take on new bad habits; the result being beneficial, both physically and mentally.

CHRONIC TROCHANTERIC BURSTITIS *

By J. K. SWINDT, M. D., Pomona, Cal.

Inflammation of the bursæ, situated about the great trochanter, constitute one of the most commonly overlooked lesions peculiar to this region. Subacromial bursitis, which, of course, is more frequent, has been studied and written about more extensively, has not received the attention of the practitioner which its surgical importance should command. Trochanteric bursitis, being much rarer, is still oftener not thought of until an extensive chronic lesion is present, which may severely tax the surgeon's dexterity and subject the patient to a prolonged invalidism before cure is accomplished.

Bursæ are not stable anatomic structures, only the larger ones being constantly present at birth and many smaller ones developing as the need for them arises in the course of the exigencies of special stress over bony prominences. They do not all conform to one structural type, but present every gradation from simple enlarged areolar spaces with no endothelial lining at all, to definite serous sacs, with distinct synovial-like lining membranes, well-defined fibrous walls and characteristic fluid. The deeper bursæ are more constant and completely developed structurally, while the superficial ones are least so. Of the latter many are adventitious, such as those which develop over a spinal prominence in Pott's disease or over the cuboid in talipes varus. Bursæ, whether normal or adventitious, deep or superficial, when unduly irritated, form bursal cysts or hygromata. All bursæ are liable to injury, acute and chronic in-

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

flammation, tuberculous and syphilitic infiltration, and to neoplasms.

About the hip joint there are to be found from ten to thirty bursae, most of which are not constant and have not been distinguished by definite names by the anatomists.

Spalteholz's Hand Atlas describes the most important ones as follows:

Bursae trochanterica subcutanea, frequently present, small, just beneath the skin, upon the lateral surface of the trochanter major.

Bursa trochanterica m. glutei maximi, constant, very large, upon the posterior and lateral surface of the trochanter major as well as upon the origin of the *m. vastus lateralis*, between these and the upper portion of the *m. gluteus maximus*.

Bursae gluteo femorales, constant, two or three small bursae below the preceding; partly lateral, partly medial from the attachment of the *m. gluteus maximus* to the femur.

Bursa trochanterica m. glutei medii posterior, very frequently present, between the tendon of the *m. gluteus medius* and the tendon of the *m. piriformis*.

Bursa trochanterica m. glutei medii anterior, constant, sometimes double; between the tendon of the *m. gluteus medius* and the apex of the trochanter major.

Bursa m. piriformis, frequently present, in front of and below the *m. piriformis*, between it, the bone and the *m. gemellus superior*.

Bursa m. obturatoris interni, constant, between the incisura ischiadica minor and the *m. obturator internus*; it is very often continued into the groove formed by the *mm. gemelli*, for which it forms a lining; the latter part is very rarely independent.

Bursa m. bicipitis femoris superior, inconstant, between the tendons of the *mm. biceps* and *semitendinosus* on the one hand, and the tendon of the *m. semi-membranosus* on the other.

Bursa ischiadica m. glutei maximi, very frequently present; upon the posterior surface of the tuber ischiadicum and of the origins of the *mm. biceps* and *semitendinosus*, between these and the *m. gluteus maximus*.

The most common site of bursitis is the prepatellar bursa, familiar as housemaid's knee, next the olecranon bursa, and then the subacromial. Bursitides of the lower extremity, next in order, are relatively rare, especially those about the great trochanter. Of the latter, those of the *gluteus maximus* muscle are the most frequently involved as a result of their relation to the great trochanter, and the frequency of traumatism to this part of the body.

Traumatism seems to be the chief factor in the etiology of bursitis. Violence applied directly over the bursa, or indirectly applied through violent contraction of the muscle, whose tendon overrides the bursa, crushes the bursa against the underlying bone and produces an acute bursitis. Prolonged irritation induced by occupation overuse, as in housemaid's knee or weaver's bottom, produces a chronic bursitis.

Infection is the second factor in etiology and is usually secondary to traumatism. Inasmuch as the bursa is practically never penetrated by trauma, it must be concluded that the infection is metastatic in origin. Moreover, a bursa forms an ideal cultivation ground for bacteria. It has long been known that inflammations of the bursae about the heel are particularly apt to be metastatic from gonorrhoea, and it is now felt that infectious bursitis, like arthritis and osteomyelitis, is meta-

static from acute or chronic focal infections such as pharyngitis, tonsillitis, furunculosis, etc. Syphilis, tuberculosis and gout are constitutional maladies which localize occasionally in bursae. Secretion of an excess of fluid and the consequent burrowing tendency of the hygroma are the dominant features in the pathology of bursitis.

Murphy says that "the fluid which is discharged is collagenous in nature. The slowly developing collagen forms a membrane resembling the synovial membrane, covered with flat cells of the cicatricial type, resembling endothelial cells, but they are not endothelial cells. The fluid resembles the synovial fluid, but contains collagen.

The bursa formation is due to the absorption of the fatty tissue and the development of collagen. In the development of new joints it is the application of this principle that gives us movable joints. The result of this degenerative or absorptive process in fatty tissue, with hyperplasia of the connective tissue element, is the hygroma. These hygromata are lined with flattened cells, endothelial-like cells, but do not contain fluid under normal conditions, only under pathological conditions" (Clinics, Vol. II, No. ii).

Under tension a traumatized or infected bursa ruptures at its thinnest point and burrows in various directions between the fascial planes. Fusion with the neighboring bursae may result in a whole chain of bursae uniting to form a single cavity with a continuous flat-cell lining. The burrowing process having established communication with an associated joint cavity, incomplete excision of the bursa may be followed by its regeneration from the synovial membrane, in which case extirpation is most difficult. Infected bursae untreated eventually rupture through the skin. A fistula thus established, or that which follows incision or incomplete ablation of the bursal sac, is exceedingly prone to remain open and continue indefinitely to discharge the synovial-like secretion of the bursa or the regenerated hygroma. Necrosis of the bone is extremely rare and only occurs in long-neglected purulent cases.

In long-standing bursitis the walls of the hygroma may become considerably thickened. Plastic infiltration may extend into the surrounding fibrous and muscular structures, to which may be added calcareous deposits which greatly increase the fixation of the joint. Disuse of the muscles involved results in atrophy. Occasionally rice-like bodies arise by exfoliation of circumscribed hyaline necrotic patches from the wall of the hygroma or from fibrin deposited from the edudate. Rice bodies usually indicate tuberculosis, and are often palpable through the walls of the tumor. In syphilis a marked thickening of the walls of the bursa occurs with a small effusion and often the skin and other adjacent tissues are invaded by the gummatous infiltration.

A knowledge of the location and possible pathology of bursae may afford an explanation of many cases of obscure pain following violent exercises such as climbing, boxing, tennis and football or unusual exertion in rescuing oneself from sudden falls. Bursitis should always be thought

of in deep-seated abscesses of vague origin, especially in the vicinity of joints.

The classic history of an infection in the great trochanteric bursa is that it slowly advances, very rarely appears rapidly, and very rarely arises as an acute metastatic infection following trauma. In beginning inflammation tenderness is present over the site of the bursa. Pain is experienced on movements of the limb, especially voluntary external rotation; this pain is greatly augmented when the limb is held firmly in counter-rotation by the examiner. The characteristic attitude of the limb is in flexion, abduction, and external rotation, the position which best relaxes the aponeurosis of the gluteus maximus and tensor fascia femoris. An elastic tumor develops posterior to the trochanter, underneath the aponeurosis of the gluteus maximus, which obliterates the hollow behind the trochanter. Large tumors may be divided by the gluteal fold, or this fold may be obliterated. The tumor may extend from the ischium to the femoral canal and from the crest of the ileum to the external condyle of the femur. Pressure on the sciatic nerve may produce pain along the course of this nerve. There is an absence of swelling in the hip joint, and the head of the femur can be rotated in the acetabulum without pain. Differential diagnosis is to be made between trochanteric bursitis and inflammation of other bursae about the hip, coxitis, and osteomyelitis.

Bursitis about the hip, other than trochanteric, should be differentiated at least in early stages by the anatomical situation of the tumor, eliciting of pain by voluntary contraction of the muscle overriding the bursa, and nerve involvement. When the gluteofemoral bursae are inflamed, the tumor, pain and tenderness will be just above the lower edge of the gluteus at its insertion into the femur and below the trochanter. Ischio-gluteal bursitis is easily distinguished by the location of the tumor, great discomfort in sitting and pain and functional disturbance in the area of distribution of the inferior pudendal nerve, the perineum and external genitalia. Four bursae, two under the gluteus medius, one under the minimus and one at the edge of the piriformis, are closely associated and particularly related to the summit of the great trochanter. Symptoms from these are less pronounced than from the great bursa and point above the trochanter. Ischio-obturator bursitis quite closely resembles coxitis, but may be detected by tenderness upon rectal examination and negative test movements for hip joint disease.

The tumor in ileo-pectineal bursitis presents at Scarpa's triangle, may extend to the inguinal canal, and is very apt to produce pain in the area supplied by the femoral nerve. Extension of the thigh increases and flexion relieves the pain. In coxitis test movements of the joint are painful, jarring of the joint is painful, and there is the characteristic abductor spasm, none of which are present in bursitis. There is no tenderness over the bursa. Scar tissue of suppurative bursitis may limit the mobility of the joint to an extent which closely resembles coxitis, and invasion of the joint cavity may still further complicate the diagnosis,

rendering it difficult even at operation or autopsy. In some cases the X-ray is of vital importance. Stereoscopic pictures should be taken after the injection of Beck's paste or other opaque media through a spontaneous or artificial sinus. Such pictures are of the greatest value in determining the operative procedure in any form of bursitis.

Osteo-myelitis of the trochanter begins with a more violent onset locally and constitutionally, and metastatic infection quickly follows the traumatism. The skeletal lesion is easily discernable by the X-ray. It is to be remembered that bursitis may complicate an osteo-myelitis.

There is only one method of treatment for chronic trochanteric bursitis; that is absolute complete removal of the entire bursal sac. Every niche and corner of its ramifications must be totally dissected away or the whole structure will be regenerated. Let me quote Murphy's picturesque description of this condition. In a clinic on "Painful Exostosis of the Os Calcis" (June, 1915), he says:

"Pain just like this is seen on pressure over bursitides elsewhere such as the not infrequent bursitis occurring in the deep bursa over the great trochanter. Have you ever seen a case of chronic bursitis in the trochanter region? If you have had one to treat you will probably remember it as long as you live. At first there seems to be only a small quantity of fluid just over the bony prominence. The patient complains of occasional or frequent pain over the bursa when the fascia is put on the stretch, and the spot is extremely sensitive to pressure. It looks like a small undertaking, so you operate and remove it. Very likely you find rice bodies in it, and after you have completed your dissection you tell the patient he is cured; but he is not cured—in all likelihood he is just beginning. The affection comes back in two months or more. You operate again, making up your mind that you must have left a portion of the bursa before. You tell the patient, 'Well, this time I got it all.' But, again it comes back. Usually, you operate until you get some little experience with this particular lesion. Finally, in desperation, you start your incision somewhere near the anterior iliac spine and dissect down to somewhere near the external condyle of the femur, removing everything in sight that looks like a bursa or looks as if it might develop into one; and thus at last you extirpate the disease."

Case: Unmarried woman, twenty-seven years old. Family and personal history negative, except since the age of ten patient has suffered from repeated attacks of acute tonsillitis, usually followed by multiple arthritis. Tonsillectomy at twenty-three afforded relief from arthritis for several years, after which frequent attacks of pharyngitis ushered in more joint troubles.

September, 1919, caught right heel in a defective sidewalk and fell with leg sharply flexed on thigh, severely wrenching the foot and hip. For the next four months pain in the hip and foot gradually increased. The foot symptoms predominating led to an X-ray of it in January, which revealed marked arthritic changes about the tarsal bones. In April, after a severe cold, pain in the foot and hip again became worse, and for the first time pain on the inner surface of the thigh was

noticed. In June a swelling on the outer aspect of the thigh appeared, extending from the trochanter to the mid thigh, with redness over the trochanter. By this time walking was quite difficult, and patient experienced another fall early in July, striking directly on the right hip. This was followed by a marked haemorrhagic discoloration of the tumor, and symptoms which confined her to bed one week. July 4, an X-ray of the hip revealed no bony pathology, and neoplasm was diagnosed by attending surgeon. In August, Dr. A. V. Stoughton, of Claremont, obtained a syringe-ful of grayish-white pus by aspiration and referred the case to the writer.

At this time patient complained of pain about the hip and thigh, fever and sweats, a loss of eleven pounds in weight and a tumor, which was plainly noticeable through the clothing. The leg was held in flexion abduction and external rotation. Temperature, 101.5; leucocytosis, 1000; haemoglobin, 70 per cent. A fluctuating tumor extended from above the trochanter to the lower third of the femur. Stereo radiographs revealed no pathology in lumbar spine, sacro-iliac joint, ileum nor femur. Hip joint pain tests negative; voluntary efforts at external rotation against resistance were extremely painful.

September 17, 1920, under novocain anaesthesia a long vertical incision was made over the tumor and a huge cavity opened, which contained half a pint of flocculent fluid. The cavity was lined by smooth, shiny membrane, over which was deposited a thick layer of soft grumous material. Through a three-inch slit in the fascia lata in front of the trochanter, the cavity above the fascia communicated with a similar cavity beneath the fascia and encircling the trochanter. The superficial portion of the hygroma was removed en masse by dissection, and the walls of the deeper portion vigorously curetted with a sharp curet, and drainage established. The wound healed, with a fistula remaining, which continued to discharge synovial-like fluid for two months. At this time the cavity was filled with Beck's paste, and the stereoskiagram showed it to be of the same extent and distribution as found at operation.

November 18, under ether anaesthesia, the former incision was reopened and enlarged to extend four inches above the trochanter and eight inches below. Again, the cavity was found lined with a well-defined shiny membrane. Turning back the skin margins a long incision in the direction of its fibers was made through the tendinous part of the gluteus maximus. At the trochanter this incision was turned downward at a right angle and extended along the posterior margin of the ileotibial band to the lower end of the cavity between the fascia lata and the muscle vastus lateralis. The slit in the fascia lata, noticed at the first operation, was extended upward about four inches above the trochanter. These incisions designed to preserve the integrity of the tendons and fascia, afforded access to all the bursae in the vicinity of the trochanter.

By retraction and eversion of the flaps, the remains of the deep trochanteric bursa, and the bursa gluteofemorales were dissected out. The sharp dissection was then extended over the inner surface of the gluteus medius, piriformis, gemelli and quadratus femoris as far as the membrane extended. Anteriorly, the dissection was carried as far as the bursa pertinata, which was found intact and not fused with the pus cavity.

The incisions in the fascia lata and gluteus maximus were closed, leaving drainage through to the site of the trochanteric bursa. Drains were removed on the third day, and the wound healed by primary union on the fourteenth day. Walking was permitted on the twenty-first day. As a result of the incision as described, no stiffening of the muscles resulted, and perfect freedom of motion was obtained.

MENINGITIC EPILEPSY.*

By CECIL E. REYNOLDS, M. D., D. P. H., Los Angeles

Epilepsy is no longer generally regarded as a disease, but rather as a symptom of many conditions, some well known, some little known and some not known at all.

The first thing that occurs to one in regard to the epileptic phenomenon is that it has biological significance, just as pleural effusion has the protective purpose of separating the inflamed pleura, etc.

If, therefore, the epileptic convulsion has a purpose we must consider what the convulsion achieves and why.

What we observe is a change of respiration, followed by bodily rigidity or movement, or both in succession and usually an enforced recumbent posture. Very often, also, there is unconsciousness.

The result of all this is, firstly, a diminished flow of blood away from the brain, and, secondly, a rise of arterial pressure.

The effect of this must necessarily be an enforced dilation of the arterioles of the brain.

This is the state of affairs described by the late Sir Victor Horsley in a lecture on Epilepsy (*British Medical Journal*, April, 1892), in which he scouted the theory that epilepsy is due to a spasm of the cerebral arterioles, but that the condition was rather that of hyperæmia. But I most particularly draw attention to the fact that he spoke of what he observed during an attack and I have been unable to find any reference of his to the condition of the arterioles prior to the attack.

In favor of the contrary view that the convulsion is due to a spasm of the cerebral arterioles producing starvation of the cortex which the fit endeavors to correct, I refer you to the mass of evidence published by Dr. A. E. Russell in the *Goulstonian Lectures Lancet*, April 3, 10, 17, 1909. Also Dr. A. E. Stoddart's observation of the co-existence of epilepsy with Raynaud's disease, and I believe that Dr. Harvey Cushing made similar observations under his glass trephine windows, but of this I have no definite information.

A number of observers, notably Knies and D'Abund, have reported arteriospasm of the retinal vessels immediately preceding an attack, and hyperæmia of the same later in the attack, but one of the most valuable of modern observations was made by R. Leriche and reported in the *Presse Medicale* of Paris, September 15, 1920.

Leriche had a cerebral cortex exposed at the moment of onset of a Jacksonian fit and was much impressed by the sudden arteriospasm and pronounced anæmia of the cortex. This anæmia obviously cannot continue in the face of the enormous subsequent engorgement, and I presume that when the arterioles have been thoroughly distended and perhaps temporarily paralyzed, the fit passes off.

It is a matter of common observation that the face becomes pale at the onset of a fit, and also

* Paper read before the California State Medical Society, May 12, 1921. Neurological Section.

during an ordinary faint in non-epileptics twitches may occur and even a typical convulsion develop. I have observed fits to occur during the administration of nitrous oxide both in the reputed healthy and in the known epileptic, and fits are the invariable accompaniment of asphyxia. So that the ultimate purpose of the fit would appear to overcome oxygen starvation of the brain. Fits are common in pernicious anemia in its later stages when there is decided anoxemia.

There is nothing in our physiological knowledge to refute the probability that Nature must adopt this violent and indirect method of overcoming oxygen starvation of the brain due to arteriospasm. We know of no direct power of the cortex over the vasomotor centre, other than that certain persons can blanch their arms by an effort of will, but as great muscular rigidity of the arm appears to be necessary to the accomplishment, it is possible that such persons have a cervical rib against which they can compress the subclavian artery.

Horsley divided the mesencephalon and found that the blood-pressure still rose when the general pressure on the cortex was increased, thereby showing that in this case the rise of blood-pressure was not due to any messages from the cortex to the vasomotor centre via the cerebral peduncles.

If the fit is not a vascular phenomenon but merely an explosion such as would occur when a match is applied to gunpowder, I see no reason why it should ever cease until all the gunpowder (meaning the cortical substance) is exploded. In such a case every fit would terminate in status epilepticus until death. Brown-Sequard produced convulsions of the legs by compression of the aorta. Herman produced convulsions by ligaturing veins from the head; this, however, raised the general intracranial pressure. So that the balance of evidence, I believe, is that the onset of the fit is marked by cerebral anemia, the blood-pressure rises until a certain degree of hyperemia is attained, and the fit passes off, leaving varying degrees of temporary exhaustion paresis.

The passing of the fit can be most quickly induced by a few whiffs of chloroform, which is initially a strong dilator of the cerebral arterioles. Likewise, cases that have a warning can often prevent a fit by taking half an ounce of whisky in water, by reason of its vasodilating power, and after a fit whisky will restore the faculties twice as rapidly.

Between fits there is, no doubt, that epileptics should abstain as a rule, but even this may depend upon the etiology, since whisky neutralizes some toxins.

Both Oppenheim and Diefendorf state that when fits have been long absent in a so-called "idiopathic" case, the occurrence of an attack clears the patient's mental atmosphere. Oppenheim also mentions the frequency of fits in aortic stenosis, bradycardia and arterio-sclerosis.

In Leriche's case of Jacksonian epilepsy, above referred to, in which he saw a spasm of the cerebral arterioles at the onset of a fit, he also observed that the humeral artery at the same time

was greatly dilated in Jacksonian epilepsy of the arm, and repeated the common observation that a tight band around the affected limb will abort an attack.

These observations all tend to indicate that the study of the symptom "epilepsy" is resolving itself into a study of the sympathetic nervous system and the effect upon it of the following factors:

1. Hereditary degeneration.
2. Toxins endo-and-exo.
3. Abnormal intracranial conditions in otherwise healthy individuals.
4. Abnormal psychology which may be of environmental origin and in which there is a discharge of energy direct from the affective sphere into the motor centres without any regulating intervention of the noetic consciousness which should convert the energy into conduct.

It is only with a limited part of factor number three that this paper should be concerned.

Undoubtedly heredity plays a great part in many cases since Spratling found parental epilepsy in 16 per cent in a series of 1070 cases.

The next least disputed conditions are the gross cortical lesion, such as tumor and the toxic.

The gross lesion, such as tumor, produces fits in the limb corresponding to the piece of cortex upon which it presses until the general increase of intracranial pressure produces convulsions so general that the Jacksonian fit becomes less individual. By this time the original spasming centre is declining into paralysis and as the paralysis increases the Jacksonian fit lessens, because that part of the brain is losing its "kick," and its fight for nourishment has failed.

Conversely, we observe that after successful operation, the paretic limb or speech centre improves in jumps after each post-operative fit until the fits cease altogether, when the maximum comeback has been attained. I will show slides of cases in which this was well demonstrated. The best illustration of the toxic etiology is seen in eclampsia and uræmia, but this type of etiology can be produced at will by the injection into a vein of a few drops of absinthe. This fact should facilitate the investigation of the autonomic mechanism in toxic epilepsy.

Closely allied to the toxic is the obscure field of glandular secretions. Suspicion has long been directed to the thyroid, the parathyroids, the ovary and the colon, but the recent work of Fischer has shown that removal of the suprarenals diminishes the susceptibility to convulsions and reduces musculonous. Bruening reports in the *Zentralblatt für Chirurgie*, October, 1920, that he has accordingly operated upon nine unselected cases, removing the left adrenal and apparently cured two and improved the rest.

Fischer makes the somewhat sweeping statement that the central nervous system plays a subsidiary role in epilepsy and considers the sympathetic and endocrine systems as of prime importance.

It is to be hoped that adrenalectomy will not become as fashionable as colectomy and ovariectomy seem to be in the treatment of epilepsy without

grave consideration, for all these operations are far more serious than the subtemporal and suboccipital deduralizations, or the Rolandic valve-flap operation.

These various cranial operations I have performed upon thirty-nine selected cases of epilepsy. Of these, ten cases of grand mal have been apparently cured (the longest cure has been eight years and the longest duration of fits before operation was every night for twenty years). Five cases of psychic equivalents also cured and one case cured could only be classed as tetanoid spasm. Of the other cases, eight are very promising but too recent to form an opinion, twelve grade from very great improvement to slight improvement, and three are dead. Two of the dead were complete idiots from extreme occult hydrocephalus, the other had Bright's disease and gross arachnoiditis. In only one of these thirty-nine selected cases did I fail to find gross and obvious disease of the cerebral or cerebellar membranes, and that case had excess of subdural fluid not under pressure covering a very pale cortex with constricted vessels, the result of an endocrine influence. This patient is highly intellectual.

Only two of the series had a positive Wassermann, and both are now well. Eight of these cases have exhibited themselves since cure before the Los Angeles County Medical Association, the Southern California Medical Society, or the L. A. Neurological Society.

Syphilis, when present, may act in several ways to produce fits—by means of direct invasion of the meninges and neuroglia by spirochaetes, by endarteritis, and by the spirochaetotoxin—especially when liberated by salvarsan. The worst status epilepticus I have seen followed injections of salvarsan in a case of early secondary syphilis.

Excluding, therefore, the two cases in my series with positive Wassermann reactions, the onset of the epilepsy followed mainly these diseases with astonishing directness and promptitude:

Tonsillitis, including tonsillectomy in the acute stages; diphtheria, scarlet fever, whooping cough, typhoid, measles, mumps and gonorrhoea.

Two cases had a history of trauma which, without skull fracture, can cause chronic arachnoiditis when the initial arachnoid oedema subsides. The tonsil seems to be the worst offender, however, and in this connection it is well to recollect the relation of the ascending pharyngeal artery to the tonsil and to the basal meninges.

In addition to the above cases, I have operated upon numerous examples of the closely allied condition of vertical polio-encephalitis, that had caused imbecility and often athetosis without fits, with distinct gain.

When chronic meningitis follows the diseases enumerated above it causes fits in one of four ways. Either there is a thickened arachnoid over the vertex that looks like a cobweb or in places like melted butter, with or without cyst formation; or there are dry adhesions that have a propensity for picking out the vessels; or, there is a loss of absorbing power of the arachnoid lining the great cistern

at the base so that cerebrospinal fluid collects in quantity sufficient to climb up over the vertex in amount more than is required to lubricate the brain in its pulsations, and by compression cause arteriospasm. When the tela is involved the fluid may be retained within the brain.

In the former case there are often physical signs and the fits are frequently coarsely Jacksonian, but in the last two conditions there are usually no more physical signs than in an undegenerate case of so-called "idiopathic" epilepsy. Usually, however, there are Jacksonian qualities shining through the general convulsion. It is unfortunate that this most curable form of epilepsy should so often remain unrecognized, and so seldom come to operation, as the usual medication with bromides and luminal causes rapid degeneration in them. I have applied the term "Occult" Hydrocephalus to this last mentioned class, as I think this name more accurately conveys the physical condition present and also is a reminder of the subtlety of the disease. The term, "Acquired Hydrocephalus," does not indicate whether it is manifest or occult.

When the fits have Jacksonian qualities in occult hydrocephalus they are usually right-sided in right-handed people (the head and eyes deviate to the right), and vice versa. The reason for this is probably that the most highly educated side of the brain, and therefore the most sensitive, rebels first when the pressure is very uniform. I do not wish to lay down an axiom that if the head and eyes go to the left in the fits of a right-handed person with a diagnosis of meningitic epilepsy that there is probably arachnoid thickening of the right fronto-parietal cortex rather than general fluid, but this has been my experience.

Of the physical signs in Occult Hydrocephalus, an alternating internal strabismus is by far the most constant and next in frequency is a facial paresis on the side innervated by the most highly educated hemisphere.

Unlike the strabismus, which is almost certainly due to a pull on the sixth nerves at the base, this facial paresis is, I believe, the direct result of the cortical pressure, although a widened palpebral fissure is far more constant than one used to expect in cortical lesions. Disc changes are inconstant.

If the palpebral fissure is widened without weakness of the mouth, as is quite common in many cases of epilepsy a few days or hours before an attack, great caution is needed in drawing conclusions therefrom, since it may be due to interference with one or other sympathetic cord by a toxin or other agency. I have three cases under observation at the present time who used regularly to present a marked transitory widening of the palpebral fissure on one side shortly before attacks. Two of these have been proved to be old meningitis, with abundant adhesions and pressure, and the other is unquestionably due to disordered function of the ovaries acting upon a perfectly healthy brain via the sympathetic. This latter case also had unequal pupils.

In occult hydrocephalus the pathological condi-

tion found at the vertex is usually excessive fluid in the subdural and subarachnoid spaces. This fluid is general in occult hydrocephalus and more or less local in encephalitis, for in the latter condition exposure of the frontal lobes will reveal considerable fluid in imbeciles (with pressure in favorable cases), but a more or less normal condition around the cerebellum and fourth ventricle; which is never the case in hydrocephalus.

The symptoms correspond. In occult hydrocephalus the disability of both mind and body is equal and only follows a fairly long course of convulsions as a rule; In encephalitis it is usual to see grave mental defect with perfect limb strength, with possible grimaces and athetoid movements, and a history of only a few fits or none at all. Often the disease commences with a delirium and fever or the onset may be fulminating and resemble a hæmorrhage. At other times the onset is insidious as occult hydrocephalus generally is. A hydrocephalus may be external, or internal, or combined.

The epilepsy due to external hydrocephalus without close adhesions to the pia mater is the easiest to cure.

A distinction between these three conditions cannot with certainty be made until the preliminary subtemporal opening is made. I always do this first as it is by far the safest method of toning down the intracranial pressure and of avoiding the complications of atmospheric pressure during the eventual suboccipital operation, especially if the fourth ventricle has then to be opened. Hydrocephalics take it very hard if their fluid is too suddenly released. Not only are the hydrostatics of the fourth ventricle upset, but the blood vessels of the brain cannot endure the sudden loss of support to which they have been so long accustomed.

When the hydrocephalus is internal, instead of fluid spurting out upon opening the dura the cortex bulges into the opening. When it is combined, fluid flows freely first and the cortex bulges out after it. In the vast majority of cases a little time or very gentle pressure upon the bulging cortex will cause a renewed flow of fluid and a recession of the brain to normal proportions. Normal brain never bulges.

If, however, there is no obvious subdural or subarachnoid fluid, but a dry brain bulges into the opening, it may be impossible to obtain a recession owing to a lack of communication between the ventricles and the subarachnoid space. This is less common in hydrocephalus not due to tumor, and unless due to tumor should not be treated by puncture of the lateral ventricle, which is a procedure bad in principle, and, from all I have heard, frequently unfortunate in practice. In either event, a cure will not likely be attained until a suboccipital deduralization has been done in the case of external, or a radical fourth ventricle operation in the internal internal variety, when the tela choroidea inferior may be found bulging like a toy balloon and devoid of pulsation. I have never attempted to interfere with the iter of

Sylvius, and it has never apparently been called for. Nature frequently, by convulsions, bursts asunder all the membranous walls of the fourth ventricle (except the dura which is bulged), when they have become thickened and adherent, but unfortunately, owing to too long deferred surgery, the iter of Sylvius is woefully distended before this can occur.

The most favorable condition to find at the base in hydrocephalus is where the arachnoid has adhered to the dura and is separated from the intact pia by abundant fluid and the coverings of the fourth ventricles are still osmotic.

Very often, however, the tela choroidea inferior and its superimposed arachnoid are glued together and thickened and adherent to the deep aspect of the occipital sinus, being quite impervious or nearly so like the rest of the diseased membrane. It then has to be opened, when the occipital sinus is reflected. If now the iter is dilated a considerable fall of blood-pressure may be expected.

I am inclined to believe that Coupin, writing in the *Societe de Biologie*, Vol. 83, 1920, is correct in considering that the fluid passes out of the fourth ventricle normally by osmosis through the membranes, and that the foramina of Majendie, Key, and Retzius are anatomical artefacts.

In other cases not only have the posterior coverings of the fourth ventricle been destroyed, but the vermis pushed upwards and the lateral lobes aside by the prolonged pressure so that the rhomboid fossa is revealed as soon as the cerebellar dura is reflected. Even in this case the neck muscles will adequately take care of the fluid in time, provided the iter is not badly dilated.

In other cases the dura and arachnoid of the hemispheres have closely adhered to the cerebellum and its pia and are dissected off with difficulty. In such a case there is very little fluid at the base, but much at the vertex under pressure, and the convulsions are of the general type with occasional Jacksonian quality. Physical signs are likewise frequently absent. Conversely, when the fluid is most abundant at the base, the cerebellar element of the fit predominates and is most persistent, being usually a tonic emprosthotonus.

Turning again to vertical meningitis, when there is thickened arachnoid with cyst formation, the process acts as a foreign body constricting the vessels and producing local positive pressure, but when there are merely dry adhesions between the pia and arachnoid and dura the fits are frequently induced when the cerebrospinal fluid is under a negative pressure as occurs in fatigue, for then the brain contracts and, pulling on the adhesions that cannot leave the dura and skull, provides both an irritation and kinking of the vessels, for these adhesions select chiefly the sulci for their habitat. These fits are frequently Jacksonian in onset and preceded by violent neuralgic headache, moreover they are apt to occur at the end of the day in contrast to hydrocephalic fits, which are more apt to occur at night or very early morning, owing to accumulation of extra fluid that the

upright posture can take care of via the spinal theca.

In the case of arachnoid cysts they must be carefully dissected off in a two-stage operation, and I have occasionally found it necessary to puncture some blisters in the pia. As a rule, the pia must remain inviolate.

Adhesions must be carefully divided without sacrificing large vessels.

Some of the above points have been gleaned by making patients keep notes on the condition of the subtemporal openings, day by day. They are trained to record the bulging or collapse of the little hernia and the degree of pulsation.

In a serious disorder like epilepsy there is much to be said for an exploratory subtemporal in any case that is suspiciously meningitic. Providing the technique is ideal, it is a safety first measure. It should be absolutely safe except in hydrocephalus with extreme arteriosclerosis.

It may be a slight nuisance to men, but none to women, and it improves the general health of many cases and cures some without any other operation. It also saves the brain to some extent in future attacks. It is usually free from after-pain, and the stay in hospital need not exceed five days. I regard tonsillectomy with far more awe.

It gives more information than lumbar puncture, which is also useful in diagnosis, but probably more dangerous.

It always reveals an external hydrocephalus, and many an internal hydrocephalus declares itself to be uncomplicated by becoming external before closure of the temporal muscle. Frequently vertical adhesions can be seen even as low down as this, giving the information that an osteoplastic flap will be necessary higher up, so that a Krause valve flap may be made, subsequently. Moreover, a bilateral facial paresis, which not uncommonly exists and is quite unrecognizable, becomes unilateral after the subtemporal operation, that is after a right-sided operation the left mouth becomes surprisingly stronger, as proven by photographs taken before and after operation. Later the homolateral side of the mouth follows suit and the whole expression is altered for the better, and a gloomy looking person becomes bright in appearance. Another means of diagnosis, in the absence of those physical signs that we have been taught in early youth to rely upon in the diagnosis of organic disease, is "Dissection of Fit."

The art of fit-dissecting is still in its infancy, and is far more difficult in private practice than in an institution.

Of the *Jacksonian qualities* to observe, perhaps the most likely one to be caught is deviation of the head and eyes at the commencement of a fit. This is of more value in diagnosis than the subsequent behavior of the limbs unless the latter are very Jacksonian.

Of the *tonic stage* the meaning of opisthotonus is still debatable. It can arise from discharge of the trunk centres at the vertex, by discharge of the anterior vermis of the cerebellum, or it may be spinal, but in regard of emprosthotonus I was

most fortunate in being able to demonstrate in the Hanna case that it almost certainly arose from the posterior vermis of the cerebellum. The evidence for this was published in great detail in the California State Journal of Medicine, January, 1920. I have since obtained further confirmation of this in other cases of external hydrocephalus operated upon. The views of Hughlings Jackson, who first described cerebellar fits, have received additional confirmation this year from the pen of Purves Stewart in the British Medical Journal.

Tremor is probably more indicative of a basal fit and an aura of a cerebral point of commencement. However, a fit commencing in the cerebrum may yet be secondary to disease, principally around the cerebellum.

The presence after a fit of paresis or of mental clouding is indicative of the disturbance being in the cerebrum. A pure cerebellar fit is followed by no mental clouding or paresis, but after repeated cerebellar fits some ataxy and disturbance of past pointing can be detected.

As mentioned above, the time of day or night in which the fit occurs is also most important.

I know nothing of fits derived from the pons or basal ganglia, but there is much evidence that scars of large nerve trunks can excite epilepsy. In this connection it may be mentioned that Horsley found that after hemisection of the spinal cord, convulsions could be induced by stimulation of the sciatic of the hemisected side, and that this occurred whether the sympathetic was also divided or not. (*Lancet*, Nov. 20, 1886, p. 975).

As to whether there is such a thing as pure spinal epilepsy, and as to the influence of old poliomyelitis cervicalis in relation to some convulsions are questions for future research.

Since this is not a surgical meeting, this is no time to discuss matters of surgical technique, but it may be instructive to add that I have refrained from closing the dura mater in the last one hundred and twenty-one operations upon the brain and cord in all regions and have never seen any ill result therefrom, whereas the curative results in inflammatory lesions of both cord and brain have been highly gratifying. The total mortality has been eleven. Of these seven were idiot children from extreme hydrocephalus or encephalitis, two cases were eleventh-hour abscesses, one an epileptic with advanced chronic interstitial nephritis, and one adult hydrocephalic with advanced arteriosclerosis and ossification of the falx cerebri.

On the other hand, in cases in which the dura has been sewn up elsewhere and subsequently came to me for operation, I have found encysted fluid under pressure, and in one case also a large blood clot cavity in the lower Rolandic area.

In the subtemporal and suboccipital regions I convert the dura into intra-muscular drains; in other regions the dura is sometimes turned over the bone edges, before the central flap of dura is laid back upon the cortex and the osteoplastic flap replaced. This method in the prefrontal region has also been a complete success in a case referred to me by Dr. W. B. Kern, with a diagnosis of

Manic-depressive insanity following severe headaches of several years' standing. Dr. Kern suggested operation as a last resort before sending him to Patton, and since operation the patient has been quite free from pain, is very cheerful and facetious, and has returned to work. The facial expression has completely altered.

A similar case referred by Dr. Alfred Fellows has had identical relief from the same operation. Both cases were formerly suicidal.

Finally, in cases of long standing, it must not be assumed that in the event that the fits do not cease immediately after operation, the surgeon has failed in his object. The patient went down hill through fits, and he often must climb up again through fits; the diagnosis of progress rests on the question whether each post-operative fit improves or deteriorates the patient. If the latter, either a wrong diagnosis has been made or another operation is required.

The greater number of most illustrative cases have been referred to me for operation by the following doctors:

Alfred Fellows, J. Lee Hagadorn, F. L. Anton, C. P. Thomas, Leo Schroeder, H. W. Levensgood, W. S. Mortensen, A. B. Hromadka, W. B. Kern, E. H. Jacobs, John Ferbert, G. P. Waller, W. Schuchwov, P. L. Barnes, H. C. Stinchfield, J. T. Stewart, W. L. Haworth, F. Leix, C. Shirey.

Since this paper was read, one of the patients classed as apparently cured because he had enjoyed nine months of perfect health after operation, whereas before he had fits every night for twenty years, did last month have two light attacks after working all day in the sun and breaking heavy sticks over the knee of the leg that started to convulse twenty years ago.

The results quoted above are purely surgical. None of the cures have had any drug treatment since operation, and although one or two of the improved have received small doses of sedative, this has been taken into consideration and discounted, as they were taking five times the dose before operation.

CHRONIC ARTHRITIS *

By SAMUEL J. HUNKIN, M. D., San Francisco, Cal.

You will note by the heading of this paper that I am not attempting a real scientific classification of the arthritides on a strict gross pathological or even a histological basis, believing that is not at present feasible. An attempt is made, however, to give a working scheme so that one may record his findings, reason regarding the various, sometimes typical characters noted, so that I may talk to you and you to me with a reasonable understanding of the conditions discussed.

We object to such terms as rheumatoid arthritis and osteitis deformans—to the former because it suggests rheumatism with whatever that implies, to the latter because the name implies that the deformity is of the essence of the disease instead

of a measure of the inefficiency of the surgical procedure.

In our work, therefore, we classify—

First. Whether the changes are monoarticular, multiarticular or general.

Second. Whether the changes are arthritic, osteitic or osteo-arthritic.

Third. As to the gross pathological changes which predominate.

(a) The bone, whether hypertrophic, atrophic, spurred or bridged, periostitic or destructive.

(b) The joint cavity, whether with plus fluid or minus fluid, with gelatinous thickening, blood, etc.

(c) The capsule, whether changed or unchanged, and if changed the physical character of the change.

Fourth. The etiological features, whether infectious, toxic, metabolic, etc.

The etiology is not always so simple as the foregoing seems to imply. Among those usually considered as infectious we recognize three groups, generally distinct—

(a) Those in which there is direct bacterial invasion;

(b) Those in which toxic substances, manufactured by bacteria, are the exciting cause; and

(c) Those in which the joint changes are associated with, and probably directly dependent upon the presence in the circulating media of a body, generally derived from organic sources. It is more than possible, also, that the peculiar character of the bone and joint changes may be due to variations in the offending bodies.

The analogue of (a) may be represented by direct streptococcal infection of joints, of (b) by the type of osteo-arthritides, which often develops in the back and in the finger joints of subjects suffering with pulmonary tuberculosis, and in which no tuberculous products are found directly associated with the changes. (c) may be represented by the effusion in and around joints, which occurs after the injection of antitoxin, typhoid vaccine, in urticaria, or in various other abnormal or diseased conditions. In our nomenclature, therefore, it is very easy for us to record "*monoarticular arthritis with destructive changes plus free fluid and of probably infectious origin*," with the character of the infection mentioned when determined, or, if not, what infection is suspected. This may seem a very lengthy nomenclature, but it very definitely expresses a condition which is easily recognizable and which is capable of ready discussion.

We believe, also (although we do not go so far in this direction as some members of this society), that various clinical appearances and pathological changes suggest definite etiological factors—for instance, a hypertrophic large joint type of disease with minus fluid, presenting rather massive joints, with a creak like a non-oiled piece of machinery, is definitely metabolic in origin. Another type, which especially involves the hip joints, although not so closely confined to them as is usually supposed, showing a definite tendency to mushrooming of the femoral heads, with the development of a peculiar buttressing of the acetabu-

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

lar margins, we have learned to associate with toxic materials having their origin either in infectious processes in other parts of the body, or more often from morbid dietetics, or faulty metabolism. A type involving the large joints and more especially involving the vertebral column and hips, slowly developing, manifesting nodes, spurs and bridging, we also associate with metabolic or fermentative errors. The particular lesions found in this type appear to be originated and developed by any proteid body, circulating in the blood, whether this material be derived from bacterial infection or not. The development is certainly promoted by, if it does not often have its inception in, digestive disturbances, metabolic errors or habitual contact with and ingestion of dirt from any organic source, and especially when this is favored by bad sanitation and unhygienic surroundings. As a matter of fact, we have much clinical evidence to support the opinion that most of the chronic arthritides, even when frankly of a definite infectious origin, are stirred up, modified and often exacerbated by many materials of organic origin finding their way into the blood stream. The changes are probably also affected by non-organic materials, and certainly are affected by the bad habits of the individual, by bad hygiene, and by many barometric and climatic changes. It appears doubtful even whether any of the morbid agents, excepting those frankly bacterial, are directly blood contaminations. The chronic arthritides are so much more often associated with affections and diseases of the tonsils, mouth, gall bladder and dysentery than with septic and infected wounds; with ingestion of the offending bodies, than with blood stream contact with them, that it appears likely that the intestinal functions generally play a very important part. We are of the opinion that the advantages which may be derived in the chronic arthritides from attention to the teeth and tonsils are due almost solely to the improved hygiene and bettered sanitation of the mouth rather than to the removal of a specific focus which bore a specific casual relation to the bone pathology.

It is more than possible that many of the chronic arthritides are direct reactions of the bony, or joint structures, to a specific morbid entity in the organism which, while often derived directly from bacterial sources, are more generally not so derived; that the reaction is not specific for a bacterium, but is specific for a material; that the change is much more akin to anaphylaxis than to bacterial infection; that they have their analogues in asthma, hay fever and eczema, rather than in pneumonia and tuberculosis, much more akin to gout than to pyæmia. It is also worthy of note that while these changes are generally due to the long-continued action of these various morbid agents, oftentimes single or repeated large doses thrown into the circulation are followed by violent general reactions and local relief of both symptoms and the pathology of the joints. This relief, however, is generally transient. I have seen the same amelioration follow upon the administration of ether. I am not satisfied, however, that I have

ever noted permanent advantages, although I have been twice nearly convinced.

The present fashion of the wholesale removal of teeth and tonsils for the cure of chronic arthritis, and more especially for the cure of the *osteoarthritides*, will pass like many other fashions in dress and surgery, and the tombstones erected in the mouths of the multitude will remain gnashing and whitened witnesses of only the *dirty* and not of the *dangerous departed*. A holocaust of teeth and tonsils has been made in our experience, with a modicum of cures. "A very little bread for a whole lot of sack." We have rarely noted rapid cures after the sacrifice, and they have been rather in the more or less acute cases, where there was no bone involvement and not in the general class of hypertrophic osteo-arthritic cases, for which the removal of teeth and tonsils is nowadays usually made.

We think of a rather wide multiple arthritis involving the smaller joints with plus free fluid and marked bone atrophy, as being spirochetic in origin and probably of a congenital spirochetic origin.

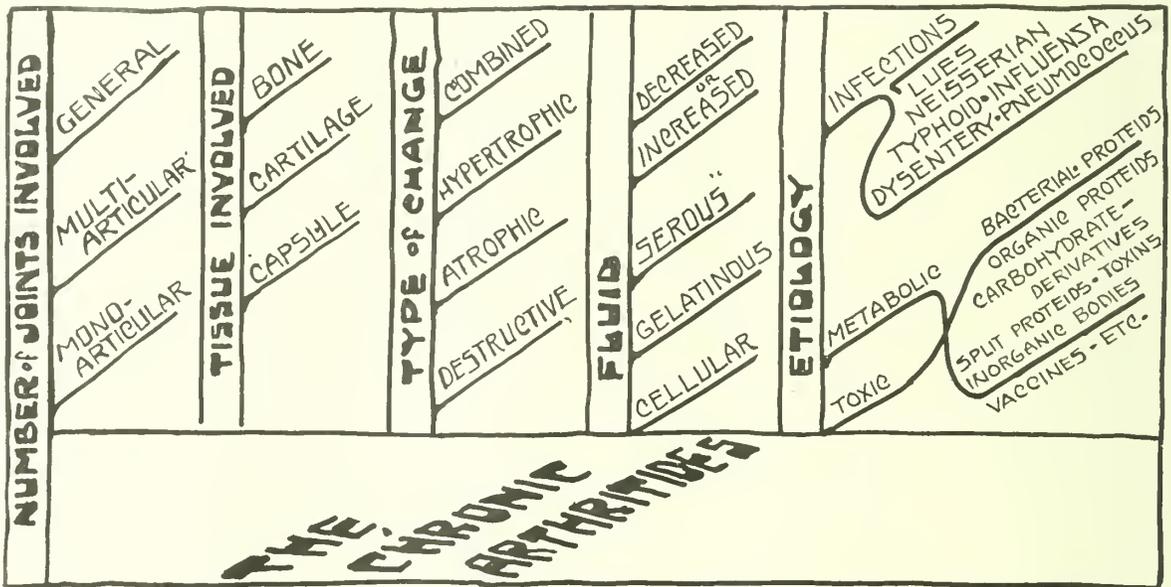
Another type involving the spine especially, although in a lesser degree also at times involving all of the joints of the body, tending to progression towards ankylosis, but without any especial spurring or bridging, we learn to associate very definitely with Neisser infections. A very acute monarticular or multiarticular type involving chiefly the larger joints, but with definitely destructive character, accompanied with great pain and tending to ankylosis, with more or less complete articular cartilage destruction, we believe is also gonococcic in origin. A particular subtype of this, generally involving many joints, clearing up perhaps in the majority, but leaving one or two more or less completely ankylosed joints, occurring often after parturition, is also generally gonococcic in origin.

Deformities appear in and around joints, not with especial reference to the bacteriological etiological character, but with particular reference to the changes in strain or balance. They are developed generally when the changes are not rapid, or the infection not fulminating, and the deformity has rather a specific character for each special joint, practically regardless of the etiological factor. This deformity is typical in definite proportion to the chronicity of the disease, and not with reference to the etiology of the disease. The usual reasons given for the peculiar character of the deformity, namely, that it depends upon the fact that certain groups of muscles are stronger than opposing groups of muscles, is a fallacy. A similar deformity occurs when the stronger group of muscles has been divided, destroyed, or changed. This may be easily noticed when a division of the flexor tendons of the wrist occurs as the result of an accident, the deformity resultant being a flexion deformity just as when the extensor groups have been divided; and the degree of the deformity is rather in proportion to the pain, suffering or infection subsequent to the injury than to the extent of the muscles divided. Very nearly the same

deformity occurs in a knee, which has been the seat of chronic tuberculosis; of sub-acute lues, of traumatic inflammation, or resultant of poliomyelitis paralysis, as occurs in a Charcot joint; that is, a flexion external rotation deformity with a tendency to backward displacement. In all diseases or injuries in or around joints, a certain typical deformity is likely to be produced, and this deformity is usually most characteristic as the change is less rapid and apparently does not depend upon the strength of the muscles involved in flexion, but rather upon the position towards which our early progenitors were instinctively driven under fear, threat, wound or pain, a position assumed probably by the fittest to survive as the best protection to their most vital organs. This is so, as we have said before, regardless of the comparative strength of the opposing groups of muscles. The same deformity occurs in the shoulder, where the deltoid and supra-scapular,

similar changes in pathology and increases in deformity occur in a bridge or any other structure in response to altered strain and stress after local damage.

I would like at this time to discuss the relation existing or appearing to exist between traumatism and the various arthritides. Personally, I doubt that traumatism has any essential relation to arthritis as an etiological factor in any of the chronic types, and especially do I doubt it where the changes involve the bony structures and more especially so where the changes are widespread. As we all have seen, an injury to a joint of any particular severity is soon followed by an effusion into the joint. If the injury is not essentially structural this effusion is serous. If more severe, this serum is mixed with blood, or it may be at first composed entirely of blood. The sequence and progress is noted typically in the knee joint only, because in this joint the effusion is most



aided by the muscles which elevate the shoulder, are the strongest muscles, after damage to the abductors as when the pectorals have been divided by a sword slash; the same pain, or fear of pain, and desire for protection, giving rise to a similar deformity in the joint, even when the joint itself is not damaged. We protest, therefore, against using any suggestion of an essential deforming influence in the nomenclature of joint diseases; making the result of the insufficiency of the surgical procedures to appear as a necessary part of the disease. We protest, therefore, unless we also use the terms poliomyelitis deformans, fracture deformans or Neisser infection deformans in joint deformities subsequent to these various conditions. Why capitalize our failures?

It is also to be noted that any deformity, having started with these varying etiological factors, has a very definite tendency to develop after the etiological factor has disappeared. The change in bearing surface and the lines of strain not only perpetuate and continually exaggerate the deformity, but also cause changes in the pathology just as

evident. However, a similar synovitis, or arthritis with effusion, is produced in any other joint when subjected to a similar traumatism, although the contour of the joint often masks the evidence. I doubt that osteitis is engendered by injury to bone, excepting when the injury is of a sufficient degree to definitely alter the structure of the bone at the moment of injury, just as I would doubt alleged mechanical injury of other organs, the eye, cord, or skin, which did not show, directly subsequent to the injury, changes or evidence of changes in the structure alleged to be injured. I look askance when traumatism is alleged as the cause of changes in the skin of a hand when similar changes are evident in the skin of the foot, which has not been the subject of injury. It is, therefore, hard for me to believe that chronic osteitis can be the result of traumatism either when the structure of the bone remained unchanged directly as a result of that traumatism, as shown by good pictures, or other evidence of structural changes; or when similar changes, of more or less degree, are widespread throughout

the skeleton. It is my opinion that an injury, of sufficient degree to later produce osteitic changes, must have caused a rending or impaction of the bone and an effusion of blood in or around the bony structure at the moment of damage. There is no injury of structure, without effusion of blood, in tissues that have blood supply, and there can be no osteitic or periostitic changes solely as the result of a traumatic etiologic factor without definite evidence of such injury. The results of traumatism, when not definitely destructive, are recovered from more rapidly when the traumatism is light, more slowly when the traumatism is severe, but there is a very definite tendency to repair in traumatic changes in contradistinction to metabolic or degenerative changes. Effusion and changes in and around joints, in and around other deep structures, the same as effusion in and under the skin or in other superficial tissues, are generally soon dispersed when the result of traumatism alone. Bony changes are, however, more slow than changes in soft tissues, and repair from injury is correspondingly slow. Repair is completed, however, in just about the time proportion that healing takes place in flesh wounds as compared with bony wounds. When traumatic damage occurs in or around bone, whether it is in a vertebra or a phalanx, the effusion is generally either reabsorbed with the return of normal function, the same as after effusion in the subcutaneous tissue, or it is replaced by callus or by fusion of the structures. After a real fracture without displacement in sites easily observed and not diseased, there are no nodes, no bridging, no spurs, but definite callus leading to repair. Nodes, spurs, atrophies, hypertrophies, degenerative changes, therefore, are not evidences of repair of damaged bones or joints, but rather of diseased processes invading the bony structures. To talk of traumatism as a cause for the osteo-arthritis, without any clear idea of what the direct pathology of the traumatism was, is talking uselessly and thinking in a fog. As a matter of fact, we know, beyond the peradventure of doubt, when we see spurs involving perhaps a large area in the vertebral column subsequent to a recent injury, that they must have existed prior to that injury and that the injury played little and possibly no part in the etiology of their development. On the other hand, it is more than probable that traumatism is often responsible for the recognized inception of the symptoms. I use the term "recognized" here advisedly, believing that the traumatism is frequently the cause of the symptoms becoming acute enough to materially interfere with ready functions; that the patient honestly, perhaps, oftentimes believes the accident caused the pathology. More generally, however, it is solely the occasion of the physical recognition of the disabling symptoms, and the patient well knows that long previous to the accident he had to be more and more careful in his work, had to better protect himself in precarious positions, was growing more stiffened and was "feeling his age." The traumatism, then, cannot be considered as a primary cause of the disability in these osteo-arthritic cases, but only as a last straw that was

laid on the camel's back that had long since been yielding to the load.

Treatment: The treatment of the common types of the chronic arthritides may be divided into *general* and *local*.

Dealing first with the general treatment—

Medical: This, of course, is directed to the etiological factors, when these can be determined; to the general etiological factors as well as to the specific.

Believing that personal cleanliness is of essential importance we have the patient *cleaned up*. We take care that the skin is well bathed, rubbed and kept warm and dry. The mouth is seen to, the teeth are kept clean; any infected, pus-bathed teeth, which cannot be properly cleaned and drained, together with all snags and stumps, are removed; tonsils which are foul are excised; dysenteries are, if possible, cleared up; piles, or rectal fissures, are taken care of; the bladder, vagina or sinuses, are put in as normal condition as possible. The bowels are opened, and digestion if necessary and possible, is improved. All these organs are looked over, swept and garnered; made and maintained *esthetically* as clean as possible, not generally with any idea of removing any specific focus or foci upon which the etiology of the disease depends, but rather to get the best possible hygienic surroundings as a preliminary to any effective procedure. We have earlier stated our opinion; that all the chronic arthritides, particularly the osteo-arthritides, are very definitely associated with, and materially modified, by many proteid bodies gaining entrance to the organism, whether they are or are not the direct products of bacteria; that other organic materials, more especially carbo-hydrate derivatives, act in a similar manner; that a great proportion of these cases are more probably *anaphylactic-like* than *bacterial-like*; and that whether involving the soft tissues, or the bone, are probably due to the tissue reaction to the specific agent. The matter of digestion is given particular attention. Toxins or any proteid body non-assimilable or difficult of assimilation, altered before or morbidly changed after ingestion in either the stomach or intestinal tract, derived perhaps from bacteria, which are considered non-pathogenic or even beneficial, act often with reference to the arthritides in a similar manner to bacterial poisons, which are considered pathogenic. It cannot, however, be said, in our opinion, that any special kind of food should be prohibited or crowded; starches and sugars perhaps are those most often offending. We cannot particularize, however, between red meats or white meats, or between fish and flesh or fowl. Generally speaking, however, I incline to the opinion that usually in the hypertrophic forms, meats should be somewhat limited, and vegetable proteids rather to be preferred to animal proteids. Many of these cases are or have been rather heavy feeders, with a predilection for meat foods. Generally speaking, therefore, we permit any food which is easily handled and digested, rather insisting upon a more generous, heavier meat diet in the anemic, atrophic types, and favoring some limitation and lessened meats or sugars in the

hypertrophic types, but considering the most essential feature of the food intake to be its ready digestibility and assimilation. It is hardly necessary in this connection to add that the usual laboratory examinations for digestion are often necessary to determine the degree of digestion. We cannot predicate any fixed rule for foodstuffs. We have some general ideas for certain classes of cases, but each case must be considered alone for diet. Sometimes, milk modified by some of the lactic acid bacteria, sometimes changed by the action of the yeast plant, is decidedly beneficial. At other times, and in apparently similar cases, it is decidedly detrimental. Not the character of the foodstuff, whether sugars, or proteids, or fats, whether meats or vegetables is of especial importance, but rather their ready and complete digestibility and handling in the animal economy. We find also that the fruit acids are often of considerable value, but these also are to be used with an eye singly to their ready transmutation. Generally speaking, they have definite advantages over the direct ingestion of alkalies, but at times the stomach will not handle them in sufficient quantity to make them of value. Under such circumstances alkalies are given direct, in such forms as chloride of calcium in vichy or some other alkaline water or sometimes better, one of the artificial alkaline waters, especially those which contain calcium salts. The salts of the vegetable acids are, however, to be preferred when readily tolerated. Iron and arsenic are generally given in some of the types, and arsenic, mercury and iodides in others. In the hypertrophic types, especially those occurring in people of the short back, plethoric shape and habit, colchicum, iodides, thyroids and venesection are oftentimes effective. Venesection is probably the one most effective measure in the more or less acute cases for the relief of pain and in our therapy as rapid as morphine and vastly more lasting. The letting of blood, by the by, oftentimes is a most effective measure in cases even not of the plethoric habit.

We look upon the matter of the relation between rest and work as of prime importance. It evidences bad judgment on the one hand to advise exercise or any actual work for acutely inflamed joints, when every movement increases pain, tenderness, spasm and swelling. On the other hand it is also bad judgment to favor complete rest for joints which are neither tender nor œdematous. Work within the limits of tolerance, work which does neither produce nor favor increased pain or spasm or œdema, is advisable and must be insisted upon. Work within the limit of tolerance in gradually increasing periods of time, with rest as nearly complete as possible, in a good functioning non-strained position in the interim is a good working plan.

Locally: When a joint is tender in any especial area cauterization and blistering are advisable; when it presents general tenderness, leeching, and especially when many joints are involved venesection is practiced. When there is dense and massive effusions around the joint (not free fluid in the cavity of the joint), it is often of value

to inject mild citrate of soda solutions in the neighborhood of the effusions. These injections are painful, but definitely promote absorption of the exudate. Fibro-lysin has been used by us in just such conditions in many cases, where theoretically its value should be evident, but I am not satisfied that it has any value, certainly not any value to be compared to those advised. As soon as it is practicable a good functioning position is secured, for while use in a bad position with increased strain favors increased deformity, use in a functioning position is an ever welcome ally in the restoration of function.

While generally in tender joints we deplore movements which are accompanied with pain, nevertheless we do not hesitate to make any movement which is necessary to secure the position desired, using as much force as is required to accomplish this purpose. This is done in one or two seances, splinting for a few days after the movement so that the effects of the trauma may wear off. It is never forgotten that every movement which excites pain with generally resultant œdema, must be considered an injury and is to be deplored, but, after all, function is the desired aim, and function cannot be resumed in a non-functionating position. Believing also that the strain of a bad position promotes not only increased deformity, but also increased pathology, we, therefore, in deformity, even in painful joints, incur the guarded trauma, in order that strain shall be relieved and a useful position secured.

When, however, the joint under consideration is in the best possible position to resume function and assuming the extreme tenderness has abated somewhat, under the methods already discussed, we now take up the treatment for joint mobilization, for the removal of the remaining stiffness, effusion, pain and tenderness, for the repair of the long-disused muscles and the clearing up of the sometimes massive myosites, for the dissolution of the fascial œdemas and the coaxing of the skeletal organism to again take up, perhaps in a limited degree, their forgotten use:—to restore their forgotten function, is a statement well within the mark. One who has watched these cases, especially in those who, for years perhaps, have been heartsick with long-deferred hope, must have noticed the inability, after repeated attempts, to even get an impulse to a muscle group and then seen the limb lifted and the joint slowly moved, and noted the joy of the patient in the greater ease with which the muscular effort is made, is convinced that in addition to the pain, to the stiffness, to the paresis, to the deformity, there was also practically an entire forgetting of the co-ordinating path and muscle sense. At this stage massage, at the hands of a well-trained masseuse, carefully directed, is probably the best single means in our armamentarium. It is harmful to use massage, excepting mild effleurage, in the earlier stage when pain, spasm and tenderness are extreme and when splinting is the essential factor; it is futile to use it later when ankylosis has occurred excepting with the object of getting better muscular control of

the stiff limbs. Used at the essential moment, however, in a proper manner, carefully controlled, it is, I repeat, the best single means at our disposal. This argument, however, is no excuse for rough treatment, for unskillful handling, and especially not for the masseuse attempting to find painful spots and then bruising them. A good masseuse desires directions when wisely offered—a bad one may be known by her resentment of them. Good, careful work is desired. Good, efficient work of this kind is not equally secured by a ten weeks' trained university student, even when armed with a couple of well-kept and thumbled card indexes. The next best procedure is passive congestion—the well-known "Thomas' dam," after the method of Thomas, of Liverpool. I have said *the best means and the next best means*, but far better than either is their combination, the massage beginning just after the peak of the congestion has passed. Care must be taken, and especial directions must be given, that the treatment must not provoke pain. Treatment must be given daily at first. Splinting should be at first continued at night, or for many hours daily if found necessary to prevent spasm or deformity.

General soreness during the course of treatment is combated with epsom salt packing; local tenderness with leeching and cauterization; local œdema and dense thickening with leeching or citrate of soda injections; the general weariness and heart soreness, with gentleness and persistence; discouragement and procrastination, with firmness and reassurance of improvement.

SKIN RASHES IN EXOPHTHALMIC GOITRE

By F. F. GUNDRUM, M. D., Sacramento

The purpose of this communication is first to report two cases which presented what is apparently an uncommon skin complication, and secondly to review very briefly the available literature upon skin rashes in Exophthalmic Goitre.

Case 1. Mrs. W. Age 36. Had had, since puberty, a very slightly enlarged, symmetrical thyroid, without symptoms, either during her two pregnancies, or at any other time. The patient's attention was attracted to her thyroid by comments of her friends. When she consulted me in 1919 her thyroid measured 5.5 cm. in horizontal diameter, and there were no unusual manifestations. In October, 1920, I was called to see her, because of violent itching. She was somewhat thinner than formerly, with a definite exophthalmos; pulse, 140; lid lag, marked tremor of hands, and intense itching. There was a discrete rash scattered over arms, body, and legs, most profusely over the legs, as high as the knees. This consisted of deep, pink, almost red macules, barely perceptibly raised, varying from the size of a pea to that of a quarter. They disappeared on pressure. There was no scaling, no weeping, and no edema. Never having seen such a rash associated with goitre, I gave cathartics and local antipruritics, without benefit. Dr. C. E. Schoff, who saw the patient with me, agreed that the rash was probably toxic, and we advised partial thyroidectomy, which was done. About two-thirds of the gland was excised by Dr. J. B. Harris. There was a marked exacerbation of rash upon the night following the resection. Upon the third post-operative day, the skin was clear. There has been no recurrence.

Case 2. Mrs. R. Consulted Dr. Harris because of a goitre, tremor, tachycardia, and loss of weight. Examination showed very slightly elevated macules, deep pink in color, in size varying from a pea to a dime. They itched "quite a lot." The distribution was symmetrical, and about ten were present upon each forearm, and twenty upon each leg. In this patient too, an exacerbation was had upon the day following operation. The rash disappeared on the fourth post-operative day. There has been no recurrence.

The dermatoses described in patients with exophthalmic goitre are many and various in appearance, pathology, and probably in etiology as well. Text books and available literature describe many skin conditions as occurring in exophthalmic goitre, but in the main, without classification or endeavor to correlate the skin pathology with the known physiological upsets, produced by an overacting thyroid gland; (3) (4) (5) (6) (7). J. du Castel (1) divides the dermatoses as follows:

- (1) Vasomotor, such as hot flashes, dermatographia, edema, purpura;
- (2) Trophic, such as melanoderma, vitiligo, scleroderma, alopecia;
- (3) Toxic, such as urticaria, pruritus, erythema, etc.;
- (4) Microbial, such as furunculosis, eczema, etc.

Hyde and MacEwen (2) make an effort to classify upon basis of etiology.

Their group 1 includes dermatoses of accidental concurrence such as acne, eczema, some urticarias, tinea versicolor, leukoderma, and pigmentations.

Group 2 includes dermatoses more or less distantly related to the essential morbid processes of goiter, such as hyperidrosis, urticaria, erythema, sudaminae, hidrocystoma.

Group 3 includes dermatoses intimately related to the morbid processes of goiter, such as scleroderma, edema, myxedema.

A goodly proportion of the skin rashes mentioned in the literature falls into Group 1 of this classification, and a still larger number into Group 2. In all probability most dermatoses described with exophthalmic goiter are no more than results of a hypersusceptibility to insult brought about through the moist, congested, and often slightly edematous condition of the skin. However, a small number of these skin conditions may be the direct results of the pathological thyroid physiology accompanying exophthalmic goiter.

The two rashes described above, apparently depend quite directly upon thyroid intoxication, they both flared up and then disappeared after partial thyroidectomy.

References

1. J. du Castel: Paris Medic., May 10, 1919.
2. Hyde & MacEwen: Amer. Jr. Med. Sciences, June, 1903, p. 1000.
3. A. Maude: Brain, 1894, p. 246.
4. S. E. Dore: Brit. Jr. Dermat., October, 1900, p. 353.
5. Burton: Lancet, London, September 22, 1888, p. 573.
6. Sabourand: Annals d. Dermat. et Syph., vol. IV, 1913, p. 140.
7. Chambers: Domin. Med. Monthly, February, 1903. Capital National Bank Building.

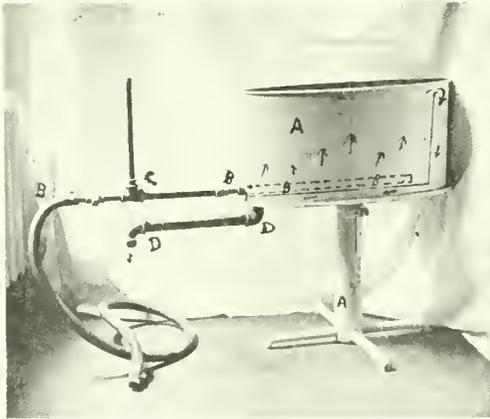
A USEFUL APPARATUS IN PHYSIO-THERAPY*

H. L. LANGNECKER, M. D., San Francisco and FRANCIS E. BOERKE.

Inasmuch as the essential equipment commonly used is complicated and expensive, the apparatus herewith illustrated and described has been devised to obtain a high temperature flowing areated bath

*From the Department of Physio-therapy, Stanford University Hospital.

as a necessary preliminary in the treatment of certain orthopaedic conditions where better movement of joints or the softening of scar tissue, et cetera, is desirable or indicated, especially in the distal portions of the upper extremity. Its practicability, simplicity and inexpensiveness makes it readily available and aids materially in acquiring better results in the treatment of this class of cases. For the past one and one-half years its usefulness has been frequently demonstrated in our department.



Description:—Conveniently shaped receptacle on adjustable stand (A-A), the supply pipe (B-B) attachable to water supply contains an aereating valve (C) and terminates in a straight one-inch pipe, with perforations on its upper surface (B) extending across the bottom of the tank. Excess water is carried away by overflow pipe (D-D).

This arrangement gives an aereated warm bath easily regulated as to temperature, force and activity of water.

County Societies

ALAMEDA COUNTY

At the monthly meeting on June 20, thirty members were present and 250 absent. The program consisted of:

1. Case Reports, by Florence Sylvester.
2. Immunization Against Diphtheria With Toxin-Antitoxin, by Ann Martin.
3. Static Defects of Feet in Children, by O. P. Stow.

These papers were discussed by N. A. Cary, Moffitt, Gompertz, Everingham, and Greig.

MENDOCINO COUNTY

The Mendocino County Medical Society met at Ukiah at the Langland Hospital, where a banquet was provided by the hospital management, Mr. and Mrs. S. B. Black and the Ukiah fraternity, on June 20. Dr. Petticord of Fort Bragg reported the State meeting; Dr. E. C. Griner gave a paper on Pain in the Abdomen; Drs. D. Smith and M. Rowe of the State Hospital gave a very helpful talk on mental conditions met by the general practitioner. There were thirteen members present.

Drs. M. A. and Chas. Craig of Lakeport were elected members of the County Society of Mendocino. They reside in Lake County, which has no county society.

SAN DIEGO COUNTY

The last scientific session of the Medical Society before its summer recess produced three excellent papers for discussion: First, paper on "Ileus," by

B. J. O'Neill, M. D.; second, paper on "Dietetic Management of Diabetes," by R. A. Kocher, M. D.; and third, "Tics and Their Treatment," by T. Coe Little, M. D.

These papers were listened to by a large and representative gathering and called forth liberal discussion, in the face of which it seems almost a crime to close the scientific machinery during the summer months.

The local Medical Bulletin is carrying serially throughout the summer months intimate sketches of the early history of medicine in San Diego County. They make, not only enjoyable reading, but constitute a history of the times they represent that is extremely valuable to record and preserve. They are written by Dr. P. C. Remondino.

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held Friday evening, June 10, at the Chamber of Commerce quarters, Dr. R. T. McGurk presiding in the absence of the president. Those present were: Drs. R. T. McGurk, F. J. Conzelman, W. P. Lynch, L. Dozier, C. F. English, L. E. Tretheway, C. D. Holliger, L. Haight, J. V. Craviotto, H. E. Price, Grace McCoskey, Minerva Goodman, Hudson Smythe, A. H. McLeish, F. S. Marnell, G. J. Vischi, E. A. Arthur, J. F. Blinn, J. D. Dameron, Harry Cross, D. R. Powell.

Report was received from Dr. Dameron, as chairman of the Committee on Admissions, reporting favorably upon the names of Dr. E. L. Blackmun and Dr. F. J. O'Donnell. Thereupon the chairman declared Drs. Blackmun and O'Donnell duly elected members of the society.

The secretary announced the death of Dr. J. P. Sargent of Lodi, and it was moved, seconded and carried that the secretary convey the expressions of regret at his passing to the surviving widow.

Dr. F. J. Conzelman presented three very interesting cases of organic nerve lesions.

Dr. Harry Cross presented two cases of tuberculosis which were greatly improved by the method of treatment which he has instituted. Dr. Cross stated that he had treated 230 odd cases with his new preparation, and had had very satisfying results, but that he was not yet ready to divulge the nature of the preparation, excepting to state that in it he was able to give large doses of mercury without constitutional disturbances, and that the preparation had a selective action upon the tubercle bacilli. There was considerable discussion and numerous questions asked. The members of the society are very hopeful that Dr. Cross in the near future will be able to give more detailed information as to his methods and remedy.

Dr. T. G. Inman of San Francisco gave a very interesting talk on spinal cord conditions. By means of charts he demonstrated the effect on different nerve bundles in the spinal cord that lesions would have when located at various sites.

DOCTOR MOFFITT HONORED

Dr. Herbert C. Moffitt, clinical professor of medicine at the University of California Medical School, has recently been the recipient of exceptional and well-deserved honors. On June 23, his Alma Mater, Harvard University, conferred upon him the honorary degree of Doctor of Science. In conferring the degree President Lowell spoke as follows: "Herbert Charles Moffitt, professor of medicine at the University of California; the physician who built up for the University of California the great medical school of the Pacific Coast." At the last meeting of the American Association of Physicians Dr. Moffitt was elected president for the ensuing year, succeeding Dr. W. S. Thayer.

Book Reviews

Laboratory Manual of Pharmacology. By A. D. Bush. 251 pp. Illustrated. Philadelphia: F. A. Davis Company. 1919. Price, \$3.50.

If the author's students actually use this book, they spend much more time with him than is given to the study of pharmacology in other medical schools.

The manual is an unusually complete one. A man who has worked his way through it will have a sufficient working knowledge of the more important drugs. It should be useful, not only to the author's students, but as a basis for laboratory courses in other medical schools. L. E.

Accessory Sinuses of the Nose. By Ross Hall Skillern. 418 pp. 300 Illustrations. 3rd ed. Philadelphia and London: J. B. Lippincott Company. 1920.

This book is a particularly clear and comprehensive treatise on the subject and without question is one of the best in the English language. It gives in a clear and concise manner the anatomy, pathology and treatment of the various diseases of the sinuses; gives a very complete bibliography of those subjects which cannot be treated in detail, and gives references for statements made.

The first one hundred pages are given to general consideration which should be of great interest and value to general medical and surgical practitioners as well as being most worthy of the occasional reviewing by ear, nose and throat specialists. H. A. F.

A Nurse's Handbook of Obstetrics. By Joseph Brown Cooke. Ninth edition. 468 pages. Illustrated. Philadelphia and London: J. B. Lippincott Company. 1920.

For any nurse who is specializing in obstetrics, it would be difficult to find a better book than this one.

The book is quite complete, not only in the essential details that a nurse should know, but also in interpreting the examinations of the physician, thus adding an absorbing interest to the whole picture. This is all told in simple, yet scientific, phrases so that the nurse is surprised at how much she can really know about the procedure of an obstetrical case.

It can be most enthusiastically recommended to the nurse, to the superintendent of nurses, and even to the physician giving lectures to nurses.

New illustrated colored prints have been added to this edition—also a chapter on prenatal nursing. M. J.

Laboratory Manual of the Technic of Basal Metabolic Rate Determinations. By Walter M. Boothby, M. D., and Irene Sandiford, Ph. D., Section on Clinical Metabolism. The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation, University of Minnesota. Octavo volume of 117 pages with 11 tables and charts of explanation. Philadelphia and London: W. B. Saunders Company. 1920. Cloth, \$5 net.

The book is a handy manual for the technician doing this sort of work. The technic is plainly and concisely set forth, and should leave no doubt as to a correct procedure. The tables are convenient and arranged in one manual will save considerable time for the worker. The clinician who would understand the chemistry underlying the basal metabolic rate of the body must turn elsewhere for his information. For this there is a very good bibliography appended. D. M. E.

Radiography of the Chest. By Walker Overend. 119 pp. St. Louis: C. V. Mosby Company. 1920. Price, \$5.

This book which is the first of two volumes on the roentgen examination of the chest deals en-

tirely with pulmonary tuberculosis. It is concise and well illustrated. A commendable feature is the inclusion of a brief clinical history with each illustration. Perhaps too much space has been given to the subject of classification of pulmonary tuberculosis and too much emphasis laid on nomenclature to the exclusion of detail in descriptions of the roentgen appearances. Taken as a whole, the book will be found very satisfactory as an elementary exposition of the subject.

H. E. R.

Optimistic Medicine. By A Former Insurance Man. 318 pages. Philadelphia: F. A. Davis Company. 1921.

The author here tells not his name,
He keeps himself unknown to fame;
He's but an old insurance man,
Built on an optimistic plan.

Just what audience he would reach
With the things he has to preach,
'Tis hard to tell. We look in vain.
The preface does not this explain.

He takes about three hundred pages
To state that humans of all ages—
Infant and youth, adult and old—
By a physician must be told

How to live and what to eat
To reach old age with temper sweet;
How to avoid each ache and pain
Of the body and the brain.

His optimism is extreme,
That he should think or even dream
That doctors can prevent each ill
That strikes the body, mind, or will.

With anecdotes he illustrates
Quite frequently each point he makes.
Sometimes they seem quite apropos,
But then again they are not so.

It is not worth a doctor's while
To read a book writ in this style.
A layman won't assume the task.
"What audience?" again I ask.

A. L. F.

Surgical Clinics of North America. February, 1921. Volume 1, Number 1 (Philadelphia number). 259 pages. Published bi-monthly. Philadelphia: W. B. Saunders Company. Price per year, \$12.

J. B. Deavor: Pancreatitis. **J. C. DaCosta:** Hydatid cyst of liver. Paget's disease of bones. Fracture of vault and base of skull, tear of dura, laceration of cortex, and hemorrhage from posterior branch of middle meningeal artery. Lethargic encephalitis mistaken for meningeal hemorrhage. Pulsating central sarcoma of lower end of humerus. Presenile spontaneous gangrene. **J. G. Clark:** Prolapsus uteri; ultimate results in one hundred cases. **C. H. Frazier:** Clinical lecture on trigeminal neuralgia. **A. P. C. Ashhurst:** Birth injury of right shoulder, neurolysis of brachial plexus. Fracture of tibia: Open reduction. Recurrent posterior dislocation of hip following infantile paralysis, paralytic valgus of right, and calcaneovalgus of left foot. Cystic ovary. Umbilical hernia. Incomplete abortion. Hemorrhoids. Cellulitis of forearm and thigh. Open reduction of fracture of forearm (Dressing). Two cases of effusion into both knees: One syphilitic, the other hemophilic. **J. H. Gibbon:** Amputation of breast for carcinoma; the Stewart incision. **C. F. Nassau:** Epithelioma of lip. **T. T. Thomas:** Method of applying extension with plaster cast fixation in fractures of leg. **J. H. Jopson:** Old fracture of patella. Treat-

ment by open operation, wiring of fragments, and suture of fascia and aponeurosis. Ectopic testicle: Perineal variety: Operation and implantation of testicle in scrotum. Primary hemangioma of spleen. G. P. Muller: Large enchondroma of scapula of many years' duration; excision of tumor and scapula followed by local recurrences. Enchondroma of scapula and long bones. Chondro-osteoma of humerus in young boy. Multilocular cyst of lower jaw, treated by simple excision and followed by cure for a period of three years.

Anaphylaxis and Anti-Anaphylaxis and Their Experimental Foundations. By A. Besredka. 143 pp. St. Louis: C. V. Mosby Company. 1919. Price, \$2.25.

Besredka must be considered the authority par excellence on the subject of desensitization or anti-anaphylaxis, as Victor C. Vaughan appropriately states in the preface to the American Edition of this monograph. It is not surprising to find, therefore, Chapter V of this small book to contain a vast amount of information which is of great practical value to those who are concerned in any form of treatment involving the use of serums, vaccines or the injection of proteins of any kind. The statements on food idiosyncrasies, tuberculin-allergy, etc., are clear and definite. As is well known the idea that the antibody-antigen reaction that causes the shock of anaphylaxis takes place in or upon the cells of the fixed tissues originated with Besredka, who believes that the reaction which determines the shock occurs in certain cells of the central nervous system. It may be remarked here that since, in the guinea pig, the rabbit and the dog, the pathological changes of anaphylaxis have been shown to occur independently of the central nervous system, the latter phase of Besredka's theory, which this author maintains in the monograph is evidently untenable. The theories relating to anaphylaxis are dealt with in Chapter VII. The specialist misses a number of important observations and probably desires a more detailed discussion of the various hypotheses, which have been offered to account for the phenomena of anaphylaxis and allergy.

The concluding Chapter VIII, "Recent Work on Anaphylaxis," by Dr. Gloyne, is excellent, and supplements in many respects the presentation of Besredka. As a whole it can be said that a complicated subject is explained in an attractive manner and this monograph should be consulted by all medical men, who have already made themselves familiar with the elements of this subject.

K. F. M.

Books Received—July, 1921

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Surgical Clinics of North America. April, 1921. Vol. I, No. 2. Publisher, W. B. Saunders Co.

Typhus Fever With Particular Reference to the Serbian Epidemic. Publisher, Harvard Press University.

Intestinal Flora. By Rettger and Chaplin. Publisher, Yale University.

Allen Treatment of Diabetes. By Hill & Eckman. Publisher, W. M. Leonard.

Infections of the Hand. By Kanavel. Publisher, Lea & Febiger.

Roentgen Interpretation. By Holmes & Ruggles. Publisher, Lea & Febiger.

Diseases of the Skin. By Ormsby. Publisher, Lea & Febiger.

Nutrition and Clinical Dietetics. By Carter-Howe & Mason. Publisher, Lea & Febiger.

Evolution of Disease. By Danysz and Rackemann. Publisher, Lea & Febiger.

Medicine Before the Bench

In this column from time to time will appear comments on court decisions and proceedings affecting public health laws, physicians and surgeons, the conduct of hospitals, laboratories, X-ray and all the agencies of modern medicine.

LEGAL LIABILITY FOR TRANSMITTING INFECTION

Both civil and criminal courts have recently rendered decisions declaring that the transmission of venereal disease lays the offender open to criminal and civil action.

In Oklahoma a man has been sentenced to five years in the penitentiary for infecting a girl with syphilis. In Nebraska the court upheld a doctor who warned a hotel keeper that one of his patients, a guest at the hotel, had syphilis and had refused treatment and was consequently a menace to the public health. In North Carolina a woman has been awarded \$10,000 damages against her husband for a similar infection, and the Supreme Court has upheld the judgment.

The Nebraska case is important because it asserts that a physician's duty to protect the public health may, under certain circumstances, transcend his duty to hold his patient's confidence inviolable. The North Carolina case is also important because it sets aside in this particular case the legal barrier that prevents a wife from testifying against her husband and bringing suit against him.

All three cases are valuable in counteracting incorrect statements, often made, that the venereal disease law falls almost exclusively on women and lets men go free. State laws, of course, govern in all such cases, but the fact that every State in the Union has now adopted many, if not all, of the venereal disease laws, gives ground for expecting similar action in other States. Certainly the wide dissemination of the three decisions should go far to curb diseased persons who deliberately expose others to infection.

Curiously enough, the District of Columbia is the only part of continental United States that has no venereal disease laws. Congress, which makes the laws for the district, has not yet acted.

The fact that the North Carolina decision makes it likely that marriage will henceforth be no adequate defense against a suit for transmitting infection will probably hasten the adoption by the States of laws requiring every applicant for a marriage license to present a certificate by a reputable doctor certifying that he is free from venereal disease and providing that without this no license shall be issued.

Twenty States have already adopted laws forbidding persons with venereal disease to marry; seven of these—New Hampshire, New Jersey, North Carolina, Oregon, Washington and West Virginia—having acted during the present year's sessions. Similar bills are now pending in several States.

All of the twenty States do not require medical examination and certification that the applicant is free from venereal disease. "Such certificate should be required in every State," insists the Public Health Service. "Any decent man with an uncured infection who marries does so either because he does not realize the seriousness of his action or because he believes that he is cured. The necessity for an examination should bring its seriousness home to him and should be welcomed by him as a protection for his wife and children. No real man should object to a medical examination required by law."

Of course those that hold the thought that disease is non-existent and those that believe that thumping the spine is the proper procedure demur to these decisions recently rendered.

DECAYED TEETH AND CHILDREN'S DISEASES

That decayed teeth are very strong predisposing causes to the "catching" of measles, scarlet fever, pneumonia, mumps, and other childish diseases is strongly urged by the U. S. Public Health Service, which cites very considerable reductions in those diseases in cities where dental clinics have been established in the schools. At Bridgeport, Conn., for instance, diphtheria has been lessened 8 per cent. At an orphanage in Boston these diseases, which had annually afflicted about one-third of the 325 inmates, practically disappeared after eight months' dental work. The absorption of pus from rotting teeth had weakened the children and made them easy victims to disease germs, and the cleaning up of this increased their powers of resistance.

NEW PUBLIC HEALTH SERVICE HOSPITALS

Washington, May —. The hospital program of the U. S. Public Health Service is moving rapidly. Nine new hospitals, which will accommodate more than three thousand patients, are now being put into shape for early occupancy. Three of these, in Iowa, Montana, and Oregon, with a capacity for about five hundred patients, should be in operation within two months. Others will not be ready for a longer time. Especially will this be the case with three Army reservations, two of which had been abandoned for ten to twenty months, which were specifically transferred to the Service by Act of Congress.

The Colfax hotel, at Colfax, Iowa, a leased building with 130 acres of grounds, is being fitted to receive two hundred patients. The Army hospital at Fort William Henry Harrison, near Helena, Mont., will be opened with one hundred general patients, but may later be greatly expanded. Additional money will be necessary to fit the buildings at Dawson Springs, near Hopkinsville, Ky., for maximum usefulness; but the necessary funds are expected to be forthcoming and the hospital to be opened with five hundred tuberculosis patients within five months. The Hahnemann hospital, at Portland, Oregon, should be ready for 164 general patients by July 1, and the Speedway Hospital, at Chicago, for one thousand general patients by August 1.

Of the three Army posts specifically turned over by Congress, that at Fort Walla Walla is attractively situated near Walla Walla, Wash., on a low plateau near the junction of the fruit and wheat belts. The post has been abandoned for a year and, except for two brick barracks, its buildings are in bad condition and must be rebuilt. It will shelter 284 tuberculosis patients.

Fort McKenzie, one mile northwest of Sheridan, Wyo., is pleasantly situated against a northern shield of mountains. Its brick buildings surround a fine parade ground, once planted with trees, which, however, have suffered severely from lack of irrigation since the post was abandoned. Most of the region is sparsely timbered.

The red brick buildings of Fort Logan H. Roots, near Little Rock, Ark., stand on a bluff overlooking the Arkansas River. During the war some temporary wooden buildings were erected, but most of these have been removed.

Fort McKenzie and Roots are each planned to accommodate more than six hundred nervous-mental cases. Each of the three posts is likely to be ready in less than six months.

A naval station, at Gulfport, Miss., has just been taken over from the Navy by the Public Health Service and will be utilized as a hospital or home either by the Service or by some other branch of the government.

SPARE THE OX

According to a bulletin just issued by the U. S. Public Health Service, a French investigator has discovered that the malaria mosquito prefers cattle to human beings and will feed on them whenever she can, thus materially reducing the human malaria rate in several parts of France. He suggests fitting up stables as gigantic mosquito traps with cattle for bait. Here's a chance for the antivivisectionists and anti-vaccinationists to start a movement under the slogan, "Spare the ox; let the mosquito bite your own child."

Commission on Milk Standards

UNITED STATES PUBLIC HEALTH SERVICE

The number of bacteria in milk depends on dirt, temperature, and age, says the United States Public Health Service. Specific disease bacteria are not often present, and the difficulty of detecting them by laboratory methods renders these of little value in guarding milk against specific disease. The only practical safeguard is by medical, veterinary, and sanitary inspection and by pasteurization.

Bacterial counts indicate the safety and the "decency" of milk. Small numbers of bacteria indicate fresh milk, produced under clean conditions and kept cool; large numbers indicate dirty, warm, or stale milk.

Bacteria in milk are related to infant mortality. Children fed on milk containing few bacteria show a lower death rate than those fed on milk containing many. Bacteria harmless to adults may cause infant diarrhea, and milk containing large numbers is apt to contain species capable of setting up intestinal inflammation in infants.

In making the counts the methods of the American Public Health Association Laboratory Section should be used. Extensive study justifies the conclusion that bacterial analyses of duplicate samples of milk by routine methods in different laboratories vary about 28 per cent. Tests of five samples will give fairly accurate results and will always permit any milk to be accurately graded. At least four of the five should show fewer bacteria than the maximum allowed for the grade awarded. Grading should never be based on a single sample.

The grading of milk by the bacterial tests greatly modifies milk inspection by public health officials. Bacterial tests should precede dairy inspection, for they will point the way to insanitary milk. The milk inspection service should be reorganized, and it and the laboratory service co-ordinated under one head.

The Commission on Milk Standards, which was established in March, 1911, by the New York Milk Committee, a voluntary organization, consists, at the present time, of seven public health officials, six bacteriologists, four chemists, and two agricultural experts.

Notices

SECTION ON ORTHOPEDIC SURGERY

The Council of the State Medical Society has approved the establishment of a Section on Orthopedic Surgery and has appointed for the first year's work of this section, Dr. W. W. Richardson of Los Angeles, chairman, and Dr. G. J. McChesney of San Francisco, secretary. In the 1922 program special time will be allotted to this section. Members interested in presenting papers should correspond with either Dr. Richardson or Dr. McChesney.

SECTION ON OBSTETRICS AND GYNECOLOGY FOR THE COMING STATE MEETING

In the past years we have lost some very valuable discussions owing to the failure to employ a meeting stenographer. Furthermore, resolutions passed at various meetings have been forgotten because they were not properly recorded. If those who are interested in this section will contribute a small sum of \$5 we shall be able to have a stenographer at our next meeting and perhaps will be able to provide mimeographed copies of the discussions.

I, therefore, call on those who wish a strong Section of Obstetrics and Gynecology to help us to make a success by mailing a check to the Secretary of this Section.

DR. L. A. EMGE,

Stanford University Hospital, Sacramento and Clay Streets, San Francisco, Calif.

PACIFIC COAST ORTHOPEDIC ASSOCIATION

The Pacific Coast Orthopedic Association was organized on May 13, 1920, with charter members from California and Washington. A constitution and by-laws was adopted, Dr. Harry M. Sherman (deceased) of San Francisco was elected president of the association, Dr. M. C. Harding of San Diego was elected vice-president, and Dr. Thomas A. Stoddard of San Francisco, secretary-treasurer. In order to become a member of this association, it is necessary that the physician limit his practice to orthopedic surgery, and that his application be accompanied by a thesis on some orthopedic subject, showing either original work or special work or a critical review of literature on an orthopedic problem.

NARCOTIC LAW

The following letter from the Assistant Prohibition Commissioner to John L. Flynn, Acting Director of Internal Revenue, suggests a legitimate way by which physicians may dispose of excess stocks of narcotics:

"Receipt is acknowledged of your letter of May 31, 1921, in which you state that quite a few druggists with Class 3 and Class 5 licenses, and some physicians registered in Class 4, are coming into your office 'with large stocks of inventories which they wish to reduce.' They desire to give part of their narcotic drugs to some charitable institutions, there being several of these which are registered in your office, among which are the San Francisco Tuberculosis Clinic, The Little Sisters of the Poor, King's Daughters and the Pacific Hebrew Home for Aged. Some of these institutions have asked you if it would be permissible to take over the narcotics donated to them by attaching an affidavit to the original order form, stating the purpose for which the narcotics are obtained, and that no financial consideration of any kind enters into the transaction, this affidavit to be kept on file with the duplicate order forms kept in the narcotic records of the institution.

"In reply you are advised that such narcotic drugs would apparently constitute excess stock, and this being the case, it is the opinion of this office that a physician desiring to dispose of such excess stock by giving it to a duly registered charitable institution may, under the provisions of T. D. 1199, dispose of same by a single sale (or gift), pursuant to an order form, to the institution without thereby incurring additional liability under the Harrison Act. The original order form should, of course, be preserved with the physician's narcotic records and the duplicate order form with the institution's records for a period of two years to show the disposition of the drug."

THE CALIFORNIA STATE HOMEOPATHIC MEDICAL SOCIETY

The forty-fifth session of the California State Homeopathic Medical Society was held at the Hotel San Rafael on May 11 and 12, and concluded at Hahnemann Hospital, San Francisco, May 13. The following officers were elected for the ensuing year: President, Dr. H. L. Shepherd; first vice-president, Dr. J. H. Buffum; second vice-president, Dr. Lillie Boldemann; secretary, Dr. Guy E. Manning; board of directors—Drs. Wm. Boericke, J. W. Watd, Sidney Worth, George H. Martin and A. K. Crawford.

New Members

Dr. Adolph Gottschalk, San Francisco; Dr. W. C. Hobdy, San Francisco; Dr. J. R. Masterson, San Francisco; Dr. Margaret Schulze, San Francisco; Dr. Evan C. Mills, San Francisco; Dr. M. H. Hirschfeld, San Francisco; Dr. L. E. Hardgrave, San Francisco; Dr. George A. Gray, San Jose; Dr. Harry E. Peters, Pittsburg; Dr. Edgar Holm, Eureka; Dr. J. Walter Kean, Los Angeles; Dr. W. T. Jamison, Pacific Grove; Dr. J. M. Colburn, Riverside; Dr. Benj. J. Edger, San Francisco; Dr. H. S. Chapman, Stockton; Dr. Jewel Fay, Livermore; Dr. John W. Bardill, Holtville; Dr. E. D. Craft, Los Angeles; Dr. William A. Clark, Pasadena; Dr. Robert A. Stanton, South Pasadena; Dr. H. M. Hall, Los Angeles; Dr. Arnold E. Saverien, Los Angeles; Dr. Edwin M. Clinton, Los Angeles; Dr. R. V. Graves, Fullerton; Dr. M. H. Heldman, Fullerton; Dr. Judson H. Cole, Anaheim; Dr. Camillo Barsotti, San Francisco; Dr. Stuart C. Way, San Francisco; Dr. Jerome D. Wirt, San Francisco; Dr. A. H. Rosburg, San Francisco; Dr. Herlwyn R. Green, Palo Alto; Dr. George W. Goodale, San Francisco; Dr. A. O. Eckhardt, Downieville; Dr. A. W. Kimball, Williams; Dr. R. M. Moose, San Bernardino; Dr. E. A. Crokat, East San Diego; Dr. F. L. Clemens, San Diego; Dr. L. B. Oliver, Chula Vista; Dr. W. O. Weiskotten, San Diego; Dr. E. N. Young, San Diego; Dr. George McKenzie, Concord; Dr. J. M. Ward, Oakland; Dr. Edward Purcell, Oakland; Dr. S. A. Lockwood, Oakland; Dr. E. M. Lundegaard, Oakland; Dr. L. L. Sherman, Oakland; Dr. Horace B. Dean, Weimar; Dr. Alfred A. Gumbiner, Los Angeles; Dr. John A. Leas, Los Angeles; Dr. William A. Strole, Los Angeles; Dr. Salvatore R. Monaco, Los Angeles; Dr. J. T. Edward, Pasadena; Dr. M. C. Terry, Los Angeles; Dr. I. Leon Meyers, Los Angeles; Dr. Cortland Myers, Los Angeles; Dr. Frank D. Coleman, Los Angeles; Dr. J. W. Farrell, Los Angeles; Dr. F. F. Thompson, Los Angeles; Dr. William B. Wright, Los Angeles; Dr. T. C. Lyster, Los Angeles; Dr. Julian N. Dow, Los Angeles; Dr. Mary B. Poket, Hamilton City; Dr. William D. Sansum, Santa Barbara; Dr. Franklin Nuzum, Santa Barbara; Dr. Hugh F. Freidell, Santa Barbara; Dr. Charles F. Mills, Atascadero; Dr. L. M. Pulsifer, Davis; Dr. W. H. Heuschele, Santa Clara; Dr. E. M. Miller, San Jose; Dr. Thomas K. Bowles, Modesto; Dr. George E. Hall, Palo Alto; Dr. L. J. Schermerhorn, San Francisco; Dr. A. H. Rankin, San Francisco; Dr. E. Blanche Ramer, San Diego; Dr. C. M. Vanderburgh, Fresno; Dr. Walter H. Sullivan, Sausalito; Dr. Chester A. DeLancey, San Quentin; Dr. S. B. Hewitt, San Francisco; Dr. Sidney Reiser, San Francisco; Dr. Caroline Cook Coffin, Oakland; Dr. Sherman Tuttle, San Francisco; Dr. Otto Barkan, San Francisco; Dr. John C. Williams, San Francisco; Dr. Davis Grisso, San Francisco; Dr. F. J. Carlson, San Francisco; Dr. A. E. Benner, San Mateo; Dr. James B. Bullitt, San Jose; Dr. W. N. Finney, Concord.

Obituary



AN APPRECIATION OF HARRY MITCHELL SHERMAN

By DOUGLASS W. MONTGOMERY.

Harry Mitchell Sherman has passed away, and it is now thirty-five years since I first knew him. I say "knew" rather than "met" because, from the first, we were intimately associated, and I grew to know him very thoroughly as the years passed by. There is an old French saying, "Il faut tres longtemps pour faire le tour d'un homme," and during these years of active professional life I made the circuit of him fairly frequently, and found no unlovely or mean spots in him. If I can tell the truth about him it is all that I ask, as the truth without embellishment is the most interesting thing that can be produced.

Although Dr. Sherman's father had resided in San Francisco in the very early days, and his uncle, William Sherman, had been master of the Mint, he arrived here a comparative stranger, and had no easy time during the first months of practice. He was fortunate, however, to become associated with George Chismore, one of the most efficient, kindly, humane men I ever knew. He was also fortunate in acquiring the orthopedic work in the Children's Hospital, which was then a very modest institution, located in two frame buildings on Thirteenth Street, near Folsom. He soon made this the chief orthopedic center in San Francisco. What an energetic individual he was then to be sure, with his large, powerful frame and his quick step!

Sherman's manner, whole bearing and voice are best described as being those of a grand seigneur. His manner was always nervous and high strung, without, however, a trace of weakness. He impressed one as driving himself, and one felt he would be lonely if he ever gave up the job. Al-

phonse Daudet speaks of the radiance of those who go cheerfully to their work, and it was even so with Sherman. His grand ways, his absorption, and at times his apparent neglect of those surrounding him were, however, something quite different from conceit or vanity, and never bore the marks of being in any way assumed or of conveying an ulterior meaning. They were as natural to him as any feature of his face, and they manifestly had the substantial backing of a fine character, an integrity that was sometimes too uncompromising and that amounted to a peculiarity, and accomplishments far above the ordinary. Sweeter to me than any music was the sound of that lofty, rather muffled voice with a nuance of affection in it, as I heard it, possibly on the street or in a crowded room. It was the voice of a friend in a world where, from the nature of things, true friends must necessarily be scarce. A most unselfish friend, who never required anything but friendship in return.

Some time after Sherman's arrival in San Francisco a number of medical men, including himself, George Chismore, Henry Ferrer, John F. Morse, J. D. Arnold, A. P. Whittel, W. S. Whitwell, R. I. Bowie, C. A. von Hoffmann, W. W. Kerr, Martin Regensburger and myself constituted what was informally called the Friday Evening Club. Out of this association there developed the San Francisco Polyclinic, of which Sherman was for a long time secretary. He worked hard at this task, and it was a heavy one. I can see him yet, sitting bolt upright, evening after evening, writing all the correspondence in his swift flowing, perfectly legible hand; he had neither amanuensis nor typewriter. All this time he, together with Charlotte Blake Brown, contributed the main force which drove forward the Children's Hospital.

When San Francisco was visited by the plague there was much confusion of tongues owing to the many commercial interests involved. As in all such questions, if the full truth is known, adjustments take place which are almost invariably advantageous to everyone concerned. Dr. Sherman was one of those who undertook to enlighten the public so that these adjustments might be brought about, but the public was an unwilling listener. At a public meeting at which he spoke he appended the following characteristic remark: "The smallness of the audience indicates that the people are either indifferent or inimical to the present campaign. It, therefore, shows, not that we should cease or slacken our efforts, but rather that we should more vigorously continue them until everyone is aware of the facts." This is the kind of spirit which would save a community from itself. The city did finally realize that it was better to solve the problem than to evade it, and the correct solution has been of infinite benefit to this community as a whole, irrespective of persons. Truly the rain falls on the just and on the unjust alike.

From the Polyclinic he passed into the University of California, taking the Chair of Surgery. Here he worked with his accustomed energy, and was an appreciated teacher, as he already was an accomplished writer. The earthquake came, and everything was considerably tumbled about, but instead of decreasing his exertions, he increased them. He assembled the faculty almost immediately at a meeting in his home, and organized a campaign for construction. The medical buildings, which had been devoted solely to laboratory work and to lecturing, were changed by him into a hospital. Under the disturbed conditions, this was an arduous and difficult task. Having accomplished it, however, he, at great personal sacrifice, urged his own private patients to enter there, while a number of his colleagues were quartering theirs in a much more commodious and more accessible private hospital.

In the year 1913 his connection with the Uni-

versity of California was severed. One of the main reasons for this severance was that he had by his personal exertions made the position an enviable one. One thing certain is that it was not because of inactivity on his part, as he was then working at his height in writing and lecturing, and in his public and private practice. It was after this that he strove, successfully, to enlighten the public on the nature of tuberculosis, the only way to combat this insidious disease. And it was long after this that he worked in the same way on the cancer problem, and with the same enthusiasm and success, and he brought to both these questions an exceptional gift of exposition.

But Dr. Sherman was one of those who cannot live by bread alone; an ideal was as necessary for him as the air he breathed. He was a charter member of the College of Surgeons, a body representing the best elements in this division of our profession in North America. Among its ideals was that each should strive to enlighten the public in regard to the great maladies, such as tuberculosis, syphilis and cancer, which cause so much misery and destruction, and in which, if properly understood by the commonality, so much may be accomplished to control or to mitigate. These subjects, together with his hospital work, chiefly in St. Luke's Hospital, afforded an outlet for his untiring energy. In fact, his private work represented only a small part of his activities.

When the war came he was indefatigable in work among the troops, and finally received a commission in the Medical Corps, and was honorably mustered out on the cessation of hostilities. It was during his army service that he contracted a severe influenza that, as a remote consequence, caused his death.

He was peculiarly fitted for this army work because of his expertness in orthopedic surgery which was the work of his youth. He was the dean of the orthopedists on the Pacific Coast and facile princeps. I well remember at a dinner of the University of Columbia Alumni, given after his return from service, listening to one of his lucid, delightful, profitable talks on his work in camp.

But you will say, "What reward did he have for all this labor?" It can be answered that he had much. Being so interested in his work and so busily engaged in it, he had no time either to become dull and introspective or to do evil to his neighbor. One might associate for days with Dr. Sherman without hearing from him an ill-natured remark, or the expression of an ignoble thought. This escape from our chief enemy, *ourselves*, is one of the great, inestimable rewards of a busy life, spent in the pursuit of worthy aims.

Harry Mitchell Sherman has passed away, but his deeds have not passed away, and his individuality remains among us. The encouragement for us, in contemplating his life, lies in the fact that he did not exist for himself alone, rather that he was a fine type of a fine race. He was honorable, but can anyone who knew him imagine him as being anything else? What was true of this moral trait ran through the entire fiber of the man; he was what he was, not so much because he willed it, but because he could not be anything else. There are those that are of the earth, earthy, and are born to corruption, and there are those born with a living spirit, and surely this is what Saint Paul meant.

Deaths

Armstrong, John M. Died in Pasadena, California, April 23, 1921. Age, 64. Was a graduate of University of Michigan, Ann Arbor, 1885. Licensed in California, 1895.

Hay, Rilla Grafton. Died in Los Angeles, California, April 7, 1921. Was a graduate of Iowa

State University, Iowa. Licensed in California, 1879.

Hubbard, B. Roswell. Died in Los Angeles, California, June 11, 1921. Was a graduate of Eclectic Medical Institute, Cincinnati, 1879. Licensed in California, 1901.

Kenyon, Frank P. A graduate of Detroit Medical College, 1876. Licensed in California, 1907. Died in Pomona, California, May 8, 1921. Was a member of the Medical Society, State of California.

Lillie, William A. Died in Monterey, California, June 21, 1921. Was a graduate of Bellevue Hospital and Medical College, 1895. Licensed in California, 1895. Was a member of Monterey County Medical Society.

Oliver, Leonard Briggs. A graduate of University of Iowa, 1887. Licensed in 1920. Died in Chula Vista, California, June 10, 1921.

O'Reilly, E. F. Died in Lancaster, California, March 16, 1921. Was a graduate of University of Southern California, 1914. Licensed in California, 1914.

Newkirk, Garrett. Died in Pasadena, California, April 7, 1921. Was a graduate of Rush Medical College, 1868. Licensed in California, 1901.

Swancott, John, of Los Angeles. Died March 9, 1921. Age, 27. Was a graduate of the College of Physicians and Surgeons, Los Angeles, 1917.

Teubner, Charles. Died in Oxnard, California, June 9, 1921. Age, 65. Was a graduate of University City of New York, 1885. Licensed in California, 1888.

Walker, Frederick Earl. Died in Long Beach, California, April 24, 1921. Was a graduate of University of Iowa, 1898. Licensed in California, 1915. Was a member of Los Angeles County Medical Society.

West, Eugene Francis. Died in Felton, California, June 8, 1921. Was a graduate of California Medical College, California, 1889. Licensed in California, 1890.

Woodin, Irving. Died in Los Angeles, May 10, 1921. Age, 69. A graduate of Long Island College Hospital, New York, 1874. Licensed in California, 1883.

Harris, Bartlett Y. Died in San Francisco, June 5, 1921. Was a graduate of the College of Physicians and Surgeons, Chicago, Ill., 1888. Licensed in California, 1888.

Kilbourn, Harvey B. A graduate of Jefferson Medical College, Pa., 1879. Licensed in California, 1886. Died June 4, 1921, in San Francisco. Age 74.

Lain, Elizabeth. Died in Santa Rosa, May 17, 1921. Was a graduate of Hahnemann Hospital College, San Francisco, and College of Physicians and Surgeons, 1897. Licensed in California, 1897. Was a member of the Medical Society, State of California.

Pace, H. L. Died in Chicago, Ill. Was a former resident of Tulare, Cal. Graduated from Missouri Medical College, 1890. Licensed in California, 1890.

McKee, James A. Died in Sacramento, Cal., April 20, 1921. Was a graduate of Rush Medical College, 1886. Licensed in California, same year. Was a member of the Medical Society, State of California.

Moss, J. Mora. Died in Washington, D. C., April 24, 1921. Was a graduate of Cooper Medical College, California, 1894. Licensed in California, 1895. Was a major in the Army, and a member of the Medical Society, State of California.

Topp, Thos. M. A graduate of Chicago Homeopathic Medical College, Ill., 1897. Licensed in California, 1898. Died in Truckee, Cal., March 17, 1921.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
 BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Editor and Secretary : : : : : W. E. MUSGRAVE, M. D.
 Managing Editor : : : : : CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

| | | | |
|--------------------|-----------------------------------|----------------------|---------------------------------------|
| Alameda..... | Dr. Ruby L. Cunningham, Berkeley | San Bernardino..... | Dr. C. L. Curtiss, Redlands |
| Butte..... | Dr. Edward Baumeister, Chico | San Diego..... | Dr. Robt. Pollock, San Diego |
| Contra Costa..... | Dr. P. C. Campbell, Richmond | San Francisco..... | Dr. Le Roy Briggs, San Francisco |
| Fresno..... | Dr. G. L. Long, Fresno | San Joaquin..... | Dr. Dewey R. Powell, Stockton |
| Glenn..... | Dr. W. H. Walker, Willows | San Luis Obispo..... | Dr. Paul K. Jackson, San Luis Obispo |
| Humboldt..... | Dr. L. P. Dorais, Eureka | San Mateo..... | Dr. A. L. Offield, Burlingame |
| Imperial..... | | Santa Barbara..... | Dr. Robert W. Hartwell, Santa Barbara |
| Kern..... | Dr. Edward R. Guinan, Bakersfield | Santa Clara..... | Dr. Chas. Richards, San Jose |
| Lassen-Plumas..... | | Santa Cruz..... | Dr. J. B. Cutter, Watsonville |
| Los Angeles..... | M. Creamer, Los Angeles | Shasta..... | Dr. F. Stabel, Redding |
| Marin..... | Dr. W. F. Jones, San Rafael | Siskiyou..... | |
| Mendocino..... | Dr. O. H. Beckman, Fort Bragg | Solano..... | Dr. A. V. Doran, Vallejo |
| Merced..... | Dr. Brett Davis, Merced | Sonoma..... | Dr. N. Juell, Santa Rosa |
| Monterey..... | Dr. T. C. Edwards, Salinas | Stanislaus..... | Dr. E. F. Reamer, Modesto |
| Napa..... | Dr. Robt. Crees, Napa | Tehama..... | |
| Orange..... | C. R. Lane, Santa Ana | Tulare..... | Dr. J. T. Melvin, Porterville |
| Placer..... | Dr. R. A. Peers, Colfax | Tuolumne..... | |
| Riverside..... | Dr. Paul E. Simonds, Riverside | Ventura..... | Dr. C. A. Jenson, Ventura |
| Sacramento..... | Dr. S. E. Simmons, Sacramento | Yolo..... | Dr. Frances L. Newton, Woodland |
| San Benito..... | | Yuba-Sutter..... | |

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

SEPTEMBER, 1921

No. 9

SHOULD THE PATIENT HAVE THE RIGHT OF CHOICE OF PHYSICIAN?

One would be indeed both wise and bold who would offer a complete program of treatment for the "industrial medicine" problem of today, or for that matter who would hazard a prognosis for its future. All persons will admit the controversial nature of the subject and all will also admit that the present policies, methods and procedure are far from what they should be when considered from the standpoint of the public, the patient, the physician, employer or the carrier.

This being a fact, we must of course, expect numerous and frequent changes in methods, with new ones developing from time to time. During this transitional period and until a satisfactory solution of the problem is found, the opinion of any student of the subject upon any phase of the problem is entitled to our consideration. Doctor Myers' article, published in this number of the JOURNAL, will be endorsed in whole or in part by some, and others will as frankly dissent. All will be interested.

The editor desires to invite careful attention to just one point mentioned by Dr. Myers and which runs like a thread through all discussions and legal decisions bearing upon the subject: *It is the right of any sick person to the services of the physician of his choice.* Violation of this prerogative strikes pretty close at the very foundation of our democracy. The Constitution of our country devotes space to the protection of the rights of individuals, and it is at least a question whether a test case would not result in the upholding of the right of choice of physician by any sick person as an inherent right. Certainly such a conclusion is socially and economically sound; has been all but universally recognized

always everywhere except in prisons and in the military.

Violations of this principle always have caused trouble, and there is no record of the permanent success of any organization or law founded upon such a fallacy. The laws of California and of other States and of all countries where social and State medicine are in force, violate this principle both in policy and in practice. It is the principal rock upon which many have been wrecked and which experienced navigators in the waters of compromise are now busy trying to avoid.

Most insurance carriers have violation of this principle as one of their rules and it causes them more trouble than all other problems connected with their work. The alleged reason why insurance carriers take the choice of physician from the patient into their own hands is a financial one. They have learned from experience that they can select physicians who will accomplish more in time saved to injured workmen than will be saved if the workman is allowed to choose his own physician. This, of course, is a fact; but even so, has the insurance carrier, or the law for that matter, the right to invade the grounds of personal liberty to such an extent?

Would we or would we not be better off and all of us be happier if we actually, in law and in practice, allowed every sick person the absolute right of choice of medical attendant from among those qualified by education and experience, in spite of the fact that such privilege would increase the hazards of illness, the cost of medicine and in the case of insurance companies the premium rate?

"Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider."—Francis Bacon.

MEDICAL EDUCATION

Physicians interested in medical education should read the various comments made upon this subject at the annual meeting of the American Medical Association in Boston, particularly the remarks made by Dr. Bevan, chairman of the Council on Medical Education, and the presidential address of Dr. Work. Dr. Bevan stated in part as follows:

"I desire to refer to a disturbing influence which has been introduced into medical education in the last few years, and which has become in a way a menace to our progress along sound lines. I refer to the introduction of a scheme of organization of the faculties of our medical colleges, which has been introduced by the great educational foundations, and by some of the State universities. I shall refer especially to the plan of all-time clinical instruction. This plan did not originate in the medical profession. It originated outside the medical profession and, unfortunately, it has been forced upon the situation largely by money. It is a subsidized plan which has been presented to universities with the statement that they would be given one or two millions of dollars or more, provided they would adopt the all-time clinical plan in their scheme of organization. . . .

"This plan has not been a success. I do not hesitate to say that it has been a failure. It has not the support of the medical profession. I fail to find that it has anywhere the support of the great teachers of medicine, or the great teachers of surgery, or the great teachers of the medical and surgical specialties. The plan has been backed largely by men who are not medical men, and by men who, if they are medical men, are connected with laboratories. It is a very expensive plan. Its cost is out of all proportion to the results that are obtained in medical education.

". . . We should make it very clear to the outside agencies who are urging and subsidizing their special plans that the organized medical profession cannot adopt any plan of medical education that is not in keeping with the honor and dignity and best interest of the medical profession.

"One weakness of the all-time clinical plan is the grotesque proposition that the all-time clinician in one of these schools is to accept fees from well-to-do patients and the rich, but that these fees are not to go to the individual who renders the service, but to the institution. . . .

"This plan (it) has been applied in a hybrid form recently in the University of Michigan with disastrous effects. The University of Michigan is planning to enter the field of medical practice. It contemplates building a hospital of six hundred to twelve hundred beds, and putting salaried men at the heads of the clinical departments in the institution. These salaried men are to take care not only of the poor, but also of the well-to-do and rich. In other words, they are distinctly entering into competition with the medical men of the State. . . .

"In the development of the medical education of the future, the great medical profession will be

little influenced by subsidized plans urged by endowed propaganda from outside agencies, but will be controlled by the experience and advice of the great laboratory workers, the great clinicians, the great teachers who are on the firing line of medical progress and are in touch with the needs of medical education and medical practice."

Following along the same line as Dr. Bevan's remarks were those of Dr. Work in his annual address. He states:

"That governments, through their teaching universities, may not justly, for a fee, attract patients for medical treatment. It is the function of a teaching college to train physicians, and scatter them for public use, and to instruct, develop and protect them as alumni in their several places.

"It cannot draw the sick to a common center for pay, in order to augment the salaries of its teachers, without breeding distrust, relieving citizens of their proper sense of responsibility to their neighbors, and incurring the just antagonism of its alumni."

The medical profession of California can again congratulate itself that it had the wisdom to establish the League for the Conservation of Public Health, which has so successfully opposed the introduction of State medicine into California in any disguise or form. That the profession in this State has escaped the "disastrous effects" noted by Dr. Bevan in Michigan is due to the well-directed campaign of the League, which has secured the closest co-operation and effective action of a united medical profession which stands together upon a public welfare platform, devoted to the scientific practice and progress of modern medicine.

The dangerous developments in Michigan and other States referred to by Drs. Bevan and Work are being carefully observed here and any attempt to adopt plans that are producing "disastrous effects" elsewhere will meet with invincible opposition.

ORAL RADIOLOGY

"It is probable no other particular branch of radiology warrants more earnest consideration and conscientious study, at this juncture in the development of the science, than oral radiology.

"Two things appear with alarming clarity: One, that medical radiologists know comparatively little about the pathology of the mouth; and two, mighty few dentists know enough about the technique of radiology to function properly.

"Two matters of vital importance must be worked out if the radiologists on the medical side are to fulfill their functions, and if the dentists on their side are to advance in the practice of their science commensurately with public demand. Those two things are: One, uniformity of nomenclature; and two, standardized technique, based on a thorough understanding of mouth pathology. At present, there is such a multiplicity of terms describing identical oral conditions, and such a paucity of knowledge concerning the technique of oral radiology, that both dentist and medical diagnostician experience keen disappointment in the results obtained."—Abstract of editorial from the *Journal of Radiology*, Volume II, No. 7.

THE INFLUENCE OF CLIMATE ON TUBERCULOSIS

"A special or truly immune climate does not exist. The value of climate depends upon how perfectly it can aid in the production of improved nutrition, and the restriction of all functions to a normal physiological standard working into the body and mind to accomplish this. Tuberculosis can be cured in every climate where extremes do not exist. The individual condition of the patient alone allows the choice. To accomplish a cure, the plan of treatment and the method of life the patient follows holds the first consideration."—Abstracted from the recent book on Pulmonary Tuberculosis by Dr. L. J. Otis.

THE RELATIONSHIP BETWEEN THE STATE AND THE PHYSICIAN IN ENGLAND

At the recent meeting of the British Medical Association, nationalization of the profession was condemned by all as an impracticable procedure. The work of the physician is essentially individualistic, and the relationship between patient and practitioner should be between patient and practitioner, and cannot be abolished by State intervention. That changes are required and that a closer relationship between the State and the profession is necessary must be admitted. This relationship is in the process of evolution. Such enactments as the Insurance Act, Workmen's Compensation Act, and Midwives' Act have thrust new obligations on physicians, and for such services they are compensated by the State. A plea was made for better understanding between the State and the medical profession on questions relating to curative and preventive medicine. A complete reorganization of the public health bodies is required to prevent overlapping and duplication of work. At present five local authorities are concerned with maternity and infancy; three with school children; six with mental deficiency. With such a system, or lack of system, the work must be expensive and ineffective. A single authority with subdivisions is clearly a first essential in any measure of reform, and this requires the earnest co-operation of the State, the public and the profession. New conditions require that medical schools and post-graduate courses must be prepared to furnish improved training in preventive medicine and in the political science of commercial responsibility. With well-educated general practitioners the future is secure, and to them must be assigned the education of the public in measures necessary to preserve health, as well as dealing with the care of the sick. At the present time only the very rich and the very poor can obtain the advantages of a full clinical and laboratory examination in case of sickness. Even when complete diagnostic procedures have been carried out, a suitable treatment is often impossible at home, and also in nursing homes, which are frequently merely expensive boarding houses.

A preliminary report has been made, showing definite opposition to nationalization of the profession and opposition to converting medicine into a State service. However, it is proposed to establish primary and secondary health centers through-

out the country. The primary health centers are virtually cottage hospitals scattered through the smaller centers of population and staffed by the physicians of the district, each of whom attends his own patients. These cottage hospitals are to contain provision for midwifery, operating room, radiographic rooms and laboratories, and facilities for open air treatment and physiotherapy. They also should have dental clinic, services for prenatal care and child welfare, physical culture and the early treatment of tuberculosis and of occupational diseases; special departments for venereal diseases and tuberculosis. These centers are to be under the control of part time physicians. The secondary centers are much more complete in equipment; they are to be located in large cities, and existing hospitals are to be utilized for the purpose. These secondary centers would draw their patients from the primary centers or directly from the homes of the patients. It is proposed that the staff of existing hospitals take over the work of the secondary centers, such services to be paid for as special fees.—(Abstract from editorial in the Canadian Medical Association Journal, October, 1920.)

ADVERTISING MEDICINE

"There is a growing sentiment in the organized medical profession that a closer co-operation of the newspapers and the medical profession for the instruction of the people on health topics is the ideal method of accomplishing the main purpose of the press, both lay and medical, namely, the instruction of the people. Of course, in this instance, it means the instruction of the people on how to conserve health. Incidentally, such co-operation would eliminate much of the humbuggery and quackery that now fool the uninformed.

"Lately we have observed a more frequent use of a superior method of instructing the people on health topics, namely, the use of the name of some well-known institution or medical organization as the source of the information. Now this is, in our opinion, the proper method and the only sure manner in which medical knowledge can be conveyed to the people without the prejudicial thought that always surrounds individualistic opinions."—Abstracted from an editorial in the Journal of the Missouri State Medical Association, July, 1921.

The editor also suggests the advisability of magazines controlled by sound medical thought, but published with a view to popularizing health protection.

In "Better Health," published by the League for the Conservation of Public Health, California has such a magazine, which is now in its second year of existence. Every number of "Better Health" contains interesting and instructive articles, embodying sound views on medical problems. It is edited carefully, with a view to giving the public sound information and advice, and it should be in the hands of every citizen of the State.

THE CALIFORNIA ASSOCIATION OF RADIOGRAPHERS

There is published on page 382 of this number of the Journal the Constitution of the California Association of Radiographers. This organization has been formed and is now functioning as a recognized technical specialty of medicine and dentistry; a member of the section on technical specialties of the State Society.

In authorizing and carrying into effect this organization, the medical profession of California, through its house of delegates and council, has taken a step that will advance the cause of better medicine and clarify a situation that was becoming daily more dangerous to the public.

The unguarded, unprotected use of the Roentgen rays by incompetent persons already constitutes a serious menace to the health and even the lives of citizens of this country. The gravity of the situation is increasing very rapidly. Many new machines are being installed and operated by persons who have no adequate conception of their dangers to the patients, and who have only the most superficial knowledge of the mechanics of the machines or of the best technique for their use.

By common practice and more or less general consent, the confusion regarding the proper designation of persons working in this field is being cleared up. The physicians and medical organizations interested in the field of roentgenology and radium have adopted "Radiologist" as the designation of choice and "Radiographer" has been adopted as a satisfactory designation of the legitimate non-medical technician.

The Council of the State Society has created a new section on "Radiology (Roentgenology and radium therapy)," with Dr. Albert Soiland of Los Angeles as chairman and Dr. Howard E. Ruggles of San Francisco as secretary. This section, working in co-operation with other Radiological Associations, should be able to do much for the development of this specialty.

The Association of Radiographers, by recognizing themselves as technicians in a medical and dental special field; by providing for safe entrance requirements; by recognizing and practicing professional ethics; by voluntarily placing the control of their organization in a body, the majority of whom are professional men, have established for themselves a perfectly legitimate and necessary technical field, in which they should have the co-operation and support of the medical profession. Technicians are just as necessary in the field of radiology and as assistants to medical men practicing this specialty as they are in pathology, surgery, medicine or any other branch of professional work.

The nurse is the oldest of all technicians, and for a long time she was the only one. Today, in order to practice prevention, diagnosis and treatment of disease, the profession uses dietitians, public health nurses, medical social workers, radiographers, physiotherapists, physicists, chemical, bacteriological and other laboratory technicians. The technical help of these persons is necessary, not only because they are skilled artisans, but

because they conserve the time of the more expensively trained and consequently more highly compensated physician and thus help to keep down the cost of medicine to the public without interfering with the legitimate income of physicians.

Proper organization of these technical specialties, with their members operating under medical control, ought to clarify some of the special fields of medicine so thoroughly that the public may distinguish between the competent and the incompetent, and it ought to react in the establishment of legal safeguards in the use of dangerous diagnostic and remedial agents.

All work done by members of the California Association of Radiographers will be under the supervision of or upon the written prescription of a physician or dentist, and all reports by them are made to the physician or dentist who requests the work.

THE CALIFORNIA ASSOCIATION OF MEDICAL SOCIAL WORKERS

The organization of Medical Social Workers as members of the technical specialties section of the State Medical Society of California has been completed and the organization is now functioning. This action has been taken by the Council under authority of a resolution passed by the House of Delegates at the 1921 meeting in Coronado. The preamble and constitution of the new organization is published on page 381 of this number of the JOURNAL.

In creating this organization its members have taken an advanced stand in ethics, procedures and ideals. They have outlined a definite technical field for themselves; have created the machinery for control of that field and have aligned themselves with the organizations of physicians in a way that cannot fail to be of great advantage to the public, to the medical profession and to themselves. Altogether, the cause of better medicine and public health will be definitely improved, and the way has been provided to bring order, efficiency and system into essential activities that have heretofore not been so coordinated.

Physicians and public health officers will benefit by this organization because the work of its members will be in harmony with the ideals of the medical profession, and the results of their united efforts will be available for all.

The public will benefit because the services of these trained technical assistants will be made part of the program of better medicine and better health as conceived and carried out by physicians of preventive and curative medicine.

The medical social worker who renders the most important services to humanity does so when working in the atmosphere of medicine as the technical assistant to the physician. In order to render this service, she must have training and experience in that field and atmosphere, must be imbued with the ethics, ideals and spirit of service that ever characterizes the true physician.

This organization will have a place on the program of the technical specialties section of the State Society at the annual meeting in Yosemite

next May. Physicians and social workers interested in developing this program and in the success of the organization should communicate with the secretary.

THE ANESTHESIOLOGY SITUATION IN CALIFORNIA

The correspondence of the office of the State Society seems to indicate a lack of information regarding the status of anesthesiology in this State.

At the annual meeting of 1920 the house of delegates established the professional and ethical status of anesthesiology by passing the following resolution:

Whereas, The administration of inhalation anesthesia, to wit: the practice of anesthesiology, is the practice of medicine and demands a thorough medical education; and

Whereas, The practice of using technical assistants among the laity or the nursing profession for the giving of inhalation anesthetics, tends to lower the standards of medical education and needlessly endanger human life; therefore, be it

Resolved, By the House of Delegates of the Medical Society of the State of California, that the administration of inhalation anesthetics—the practice of anesthesiology—should be performed and practiced only by licensed physicians and surgeons, and that the custom of employing technical assistants among the nursing profession or among the laity is hereby condemned; and further, be it

Resolved, That no person other than a duly licensed physician and surgeon be employed or used by any member of this Society to administer an inhalation anesthetic, except in an emergency or in communities or districts where no physician and surgeon is practicing anesthesiology; and be it further

Resolved, That no hospital shall be deemed to have acceptable standards which employs a nurse or lay anesthetist to administer inhalation anesthetics or to practice anesthesiology, except in cases where duly licensed physicians and surgeons are not available, and then only as an employe of such hospital.

The attorney for the State Board of Medical Examiners in a legal opinion states, "one who is not licensed and who administers an anesthetic is subject to the penalties of Section 17 of the Medical Practice Act." Other legal opinions, including that of the attorney of the American Medical Association, are to the same general effect, and court decisions, including the Superior Court of at least one State, have definitely defined the giving of an anesthetic as the practice of medicine within the meaning of the law. The last session of the Legislature passed, and the Governor has signed, a law requiring thirty-two hours of instruction in anesthesiology for all medical students.

Thus, to sum up the situation, we find that the practice of anesthesiology is the practice of medicine. It is so established professionally and ethically by a resolution of our own house of delegates. It is so established legally by competent opinions and court decisions, and it is so recognized by the laws of our State which specifically provide instruction in the subject for medical students.

Medical institutions and physicians should obey the law and the ethics of their profession. If a sufficient number disapprove of the law and the ethics, there is machinery for changing them.

Original Articles

THE USE OF THE D'ARSONVAL METHOD OF COAGULATION NECROSIS FOR THE REMOVAL OF IMMENSE INTRAVESICAL OUTGROWTHS OF THE PROSTATE, SIMPLE OR MALIGNANT.*

By GRANVILLE MacGOWAN, M. D., Los Angeles.

Every one interested in urological surgery has been aware, during the past ten years of the wonderful curative effect of certain modalities of the high frequency current in the treatment of tumors of the bladder.

The good qualities of these therapeutic agents were first made use of for minor surgery of the skin—in getting rid of papilloma, small fibroid tumors, malignant growths of moderate size. It seems first to have occurred to Edwin Beer of New York to have instruments constructed by which advantage could be taken of this knowledge for the treatment of papillomatous growths of the bladder, the treatment of which by open operations is so unsatisfactory, and which by closed operations, by means of the cautery knife, heretofore, had been attended with great difficulty and real danger.

Following his experience, the writer and others, made use of both the Oudin and the D'Arsonval currents in the treatment of large papilloma and cancerous growths of the bladder, and, in many cases with such marked success that it seemed to him to be desirable as a method of assisting the removal of giant tumors, whether springing from the bladder wall, or directly from the prostate; whether cancerous growths distinctly pediculated but filling up large portions of the bladder; or tumors, simple adenoma, springing from either or both sides of the prostate; supplied with blood vessels of large size, ramifications of which extend from the mucosa into the connective tissue subdivisions of the growth, promising enormous loss of blood in any attempt to enucleate, the resulting wound being of such a character, that the staunching of the hemorrhage and its control by any kind of tamponade would be problematic.

The Oudin current is monopolar, and is not available for this purpose, because it is not hemostatic, excepting when the heat of the current becomes sufficient to char the tissues; whereas the bipolar, or D'Arsonval current, is distinctively disorganizing, causing coagulation necrosis and dessication of the tissues. In this process, the fluids of the tissues are cooked, the endothelium of the blood vessels destroyed by the heat of the process of boiling and subsequently dried up. This destruction does not extend very far from the end of the metallic electrode; its action is not rapid. The process does not appeal to those who want to get in and out quickly, without regard to surety of cure. It is not a therapeutic measure for the showy operator. It is practically a bloodless one and one eminently safe, so long as the end of the

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

electrode is not thrust through the tissues that lie outside of the bladder walls towards the rectum or towards the peritoneal cavity. As the desiccated tissue increases, it is snipped away with scissors until the margin of destruction is approached, and this is evidenced by the ability of the vessels to seep a little bloody serum. When the process has been continued until it reaches into the walls of the bladder everything that appears to be involved in the growth is to be desiccated, and as desiccated removed with the curette until all of the hardened infiltrated portions of the bladder wall marking the site of the tumor have become flexible to the finger and all the blood vessels of supply have been destroyed by the current. If the line of direction of the growth is towards the rectum, the gloved finger of an assistant should be kept in this cavity so as to give timely warning of too close approach to the gut. There is always a considerable degree of heat which precedes the point of the electrode, and this is easily felt in the rectum. One can be quite safe in coagulating the tissues so long as the finger can be kept comfortably in the rectum. If the growth has sprung from the prostate, when all of the intra-vesical portion has been removed in this way, as it can be without any hemorrhage, then the electrode can be thrust into the capsule of the prostate on either side and these tissues also coagulated. It is not necessary to proceed to the extent of absolute destruction, as one must in cancer of the bladder or in cancerous growths springing from the prostate, unless it is very plain, to the sense of touch, that the probabilities are overwhelmingly in favor of the growth being malignant, in which case it should be loosened up after finding the plane of cleavage, and gradually enucleated, as the tissues are cooked, the capsule thoroughly treated with the spark, with all the outlying structure that seemed to be involved in the malignant growth. In the case of malignancy, further certainty of cure is acquired by introducing within the capsule of the prostate, after the prostatic tumors are removed, an appropriate quantity of radium and leaving it there for an appropriate time.

In this connection, I have to report five cases, a successful treatment of only one of which could, in all probability, have been accomplished in any other manner.

1. The first is a case of a malignant growth involving a portion of the trigone and a part of the wall of the bladder on the left side. Mr. Peters, a farmer of Ventura, patient of Dr. Stockwell.

2. Mr. S. K., sixty-three years of age, a gentleman of Anaheim sent to me by Dr. Jos. King on the 30th of September, 1919, who had an enormous epithelioma of the bladder, which almost filled the viscus, complicated with contracture of the bladder neck, and a small adenomatous tumor of the prostate of the Albarran type.

3. Mr. B. H. of Tacoma, seventy-two years of age, who came to me March 26, 1920. In this case the prostate almost filled the bladder, and serves as a model for the picture No. 1 on the blackboard. There was almost no room in the bladder. The tumor could be felt and seen through the abdominal wall, extending almost to the umbilicus after 200 cc. of urine had been withdrawn. The blood vessels, coursing over it, as was ascertained when

the bladder was opened for preliminary drainage, were from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter.

4. Mr. B. R., merchant, sixty-nine years of age. Sent to me by Dr. Burrell of Santa Ana on December 10, 1920.

His prostate was enormously enlarged both intra-urethrally and intravesically. At the preliminary cystotomy it was found that it nearly filled the bladder. It was dark blue in color, very soft and bled at the slightest touch. The fact that, in spite of its size and the great irritation present, there was but 15 cc. of residual made me much more than suspicious that I was dealing with a sarcomatous growth, and I was not anxious to enucleate it without preceding coagulation necrosis. This was accomplished, after which the tumor was readily removed without hemorrhage.

5. Mr. F. P., attorney, sixty-three years of age resident of Los Angeles, joint patient with Dr. Lasher Hart. This man had had urinary irritation, frequency, and difficulty in passing his water, for a number of years because he had a distinct stricture of the perineal urethra; two years ago he had an attack of retention; catheterization was easy at that time. On the 12th of March, 1921, he came to me, after an unsuccessful attempt by my colleague, a urinary specialist of ability, to pass a catheter, having complete retention and suffering much pain. He had not been given a general anesthetic, but he had been narcotized; the bleeding was excessive. He was taken to the Clara Barton Hospital and a supra-pubic cystotomy done upon him for drainage.

In recent years, with men over sixty, I invariably do a double vasectomy preliminary to the supra-pubic drainage, so that my patient may be spared the depressing effects of epididymitis, which so frequently occurs in these prostatic operations. This is an innocuous procedure in men of this age, and one to which they readily give consent. Upon doing this operation, on the right side, we noticed that the bleeding was excessive, that the intimate blood vessels supplying the vas were as abundant as they would be in acutely inflamed tissue, and that the tiniest ones bled excessively. On the left side there was the remnant of an old epididymitis, which dated back some twenty-five years. There appeared to be a very moderate hydrocele, but when we cut down upon the cord, to isolate the vas, we opened the sac of a hydrocele of the cord, which extended up to the internal ring, which opened, it was imperative to get rid of. The sac dissected out without difficulty. The hemorrhage following was as if erectile tissue had been wounded; a great many ligatures were applied and the wound closed with drainage, after which the bladder was opened. In cutting the skin, the deep fascia and the muscular wall of the abdomen, we had the same experience with the blood vessels repeated; all had to be tied, and double. When the bladder was opened a dense, dark blue colored tumor, which felt cystic, presented itself, pressing tightly against the bladder wall and was lightly scratched by the knife used to make the incision. The limited space in the bladder was filled with clots from the previous hemorrhage, probably a handfull being scooped out and the scratch in the mucosa of the tumor fairly spurted blood. To this tissue I fearfully applied a fine catgut ligature, with a small round-pointed needle; it controlled the bleeding largely, although there was some from the needle holes. A long trailer was then packed in the bladder to stop the bleeding and act as a drain. About this time it was noticed that the scrotal wound was evidently filled with blood clots, and the hemorrhage had not been stilled. The wound was reopened and the tissues matted; every large and small blood vessel required a ligature. The wound was packed again and left open. He was given an injection of horse serum to increase the coagulation point of his

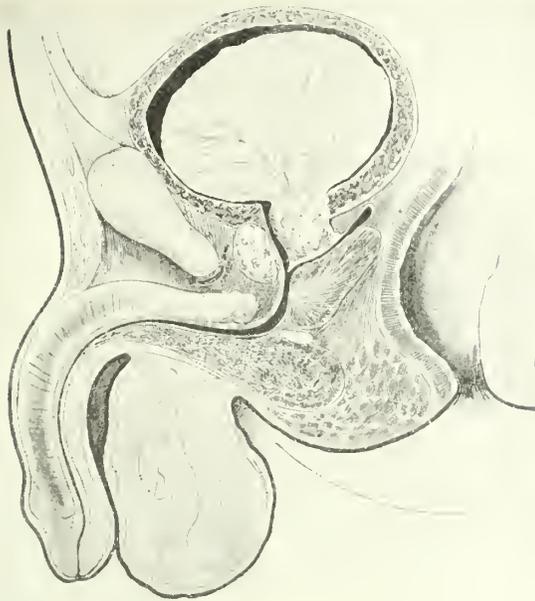


Fig. No. 1, Case 3. Schematic drawing illustrating original and relative size of growth.

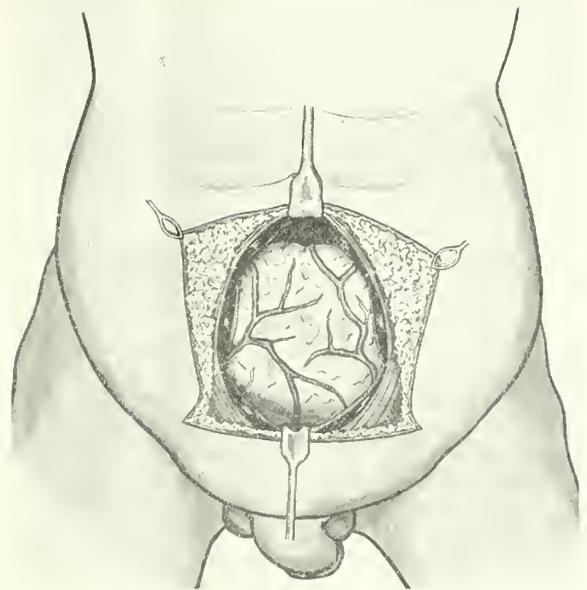


Fig. 2. Made at time of operation on Case 3. 1. Showing the free exposure required. 2. The manner of securing the bladder to the abdominal wall. 3. The large sinuses coursing over the bladder tumor.

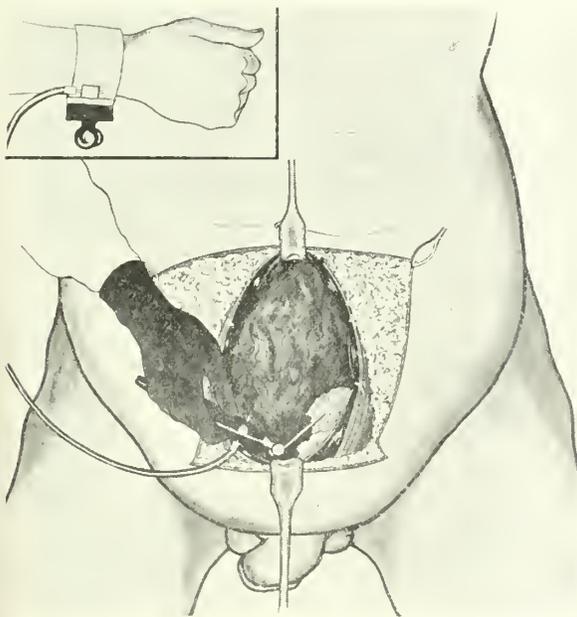


Fig. 3. Made at time of removal of the tumor of Case 5. Showing the mode of securing the necessary exposure. 2. The method of using the desiccating electrode, the tumor having filled the bladder is shown three-fourths removed. 3. Small insert shows the wrist electrode.

blood. He had a prompt reaction with rise of temperature to 104.

On the 4th of March I removed the packing from the bladder wound because he had been having severe tenesmus, frequently repeated, and much bleeding. On the 17th I took his blood count, which showed: hemoglobin, 75%; white cells per cmm, 6,000; red cells per cmm, 4,310,000; color index, 87%; polymorphonuclear leucocytes, 74%. Red cells appeared normal in size and shape. Platelets one plus.

The following day, believing that a blood transfusion would be necessary when I came to remove the tumor, which it was obvious could not be de-

layed on account of the severe and almost constant tenesmus. Dr. Zeiler reported that his blood coagulation then appeared normal. He grouped him and reserved one of his group for transfusion on call.

On the 19th, with an abundantly large aeroplane incision, which extended up to the navel, we obtained access to the tumor, so that it did not require much handling. It was the size of the fist of a large man, very soft, purplish and flaccid and was composed of the lateral lobes of both sides of the prostate, with a tumor mass connected with and springing from the left side of the bladder wall, outside of and above the ureter, which was completely concealed.

At the time of commencement of operation, the appearance of the tissue of the scrotum, the upper thigh and the lower abdomen on both sides, was such as to make it very uncomfortable for the operator, because the black and blue discoloration in the tissues extended on both sides almost up to the ribs. I was very content to have at my command the agent of coagulation necrosis to aid me in dealing with the intra-vesical difficulties.

Picture No. 2 is intended to illustrate this tumor before it was attacked with the D'Arsonval current. You will notice that the bladder wall, which is very thick, is attached on both sides with two strong silk ligatures to the fascia of the rectus muscles; two similar sutures attack the anterior part of the bladder wall and control it, coming out just above the pubic bones; this, together with the Judd speculum, gave us full command of the tumor, which extended almost to the extreme top of the bladder. This growth was subjected to coagulation necrosis, plenty of time being taken to cook the tissues thoroughly, and the destroyed portions removed from time to time with scissors or rongeurs, until the tumor was reduced to the level of the bladder neck. This stage of removal is seen in illustration No. 3. At the commencement any little manipulation of, or the slightest touch on the growth, caused excessive hemorrhage of scarlet blood. The process of coagulation necrosis was continued down into the prostatic portion of the tumor, that is into the capsule of the prostate on the left, everything being destroyed as we went along. The tumor was pulled away from the rectum, frequent inspections being made to

ascertain the heat and the amount of destruction. When the tissues began to feel normal, coagulation was stopped and the remnant of the tumor on the left enucleated. It was found that the infiltrated tissues outside of the prostate itself comprised a large part of the lateral wall of the bladder on the left. The prostate on the right side was enucleated with very little difficulty. All the bands holding the tumor to the capsule on the right side were coagulated before they were severed. The time of the operation was three hours; the hemorrhage was negligible.

After these coagulation necrosis operations there is always a great deal of sloughing of the destroyed tissues; it usually takes about three weeks for the tissues to clean themselves, just as it does on the skin.

The tenesmus which was present before his bladder was opened did not disappear until about the 20th of April—that is more than a month; it gradually become less acute and came at more rare intervals. Portions of the tissue from the right side of the prostate were sectioned for me by Brem, Zeiler and Hammack; they reported that indications were those of simple hypertrophy. Clinically, the upper portion of the tumor, which was entirely destroyed, was very suggestive of sarcoma.

In the case of H., case 3, the gross appearance and the stone-hard feel were suggestive of carcinoma; no sections were made. On account of the enormous blood sinuses present in H.'s tumor, I had no scientific curiosity to determine whether it was actually malignant or not. I was too much afraid of getting into trouble if I broke these sinuses. In the last case related, that of P., I had had enough experience with his bleeding propensities already to effectively stay my hand. When a tumor will spurt red blood like a severed artery when it is injured by a knife, my scientific curiosity ceases. I have no desire to make any sections for the purpose of determining whether it is carcinoma, sarcoma or some other form of growth. I am interested in subjecting the man to as little risk as possible. I felt as a surgeon reasonably certain that both of these tumors were potentially malignant.

Peters, case No. 1, was cured of his cancer of the prostate and bladder and died this spring, almost eighty years of age; for several years after the operation he was inspected by me twice a year; he never showed any evidence of further malignancy of the prostate or the bladder.

K.'s tumor (case 2) was frankly a malignant one; he had a stormy recovery, but he is now actively engaged in business, and while he does not report to me, I have learned from sources of information from people who surround him that he appears to be in every way well, and as he constantly is expanding his business enterprises, I have no reason to doubt that his cure is a permanent one. He quarreled with me because, in order to make the assurance of his cure more certain, I wanted to employ radium in the pedicle; to this he objected.

Mr. H. (case 3) has reported to me recently that he is entirely well in every way; that he has excellent control of his bladder and has no symptoms of any urinary trouble.

In the case of R. (case 4) the tumor was of a type from which we always see excessive bleeding, and for which many operators feel obliged to pack the cavity from which the tumor is removed, and suffer a great deal of anxiety, and occasionally lose a patient from hemorrhage, unnecessarily, if the coagulation necrosis is available.

Mr. P. (case 5) represents the type of tumor which without this agent would stand a very small chance of the patient surviving the first few days following the operation.

A PRELIMINARY REPORT OF AN INVESTIGATION INTO THE OXYGEN PERCENTAGES OF NITROUS OXIDE-OXYGEN ANESTHESIA.*

By DOROTHY A. WOOD, M. D., MARY E. BOTSFORD, M. D., San Francisco.

When nitrous oxide was first introduced as an anesthetic agent, it was used alone or in combination with air. In 1868 Dr. Horace Andrews of Chicago was the first to call attention to the fact that nitrous oxide and oxygen was a much more satisfactory mixture. In order to obtain the anesthetic state in average individuals, at least 80 per cent of nitrous oxide in the inspired gas mixture is necessary. This leaves only 20 per cent to be occupied by other gases, and as the air contains 80 per cent useless nitrogen and 20 per cent of oxygen, it follows that in a mixture of nitrous oxide and air the percentages were 80 per cent nitrous oxide, 16 per cent useless nitrogen and 4 per cent oxygen. Sometimes 80 per cent nitrous oxide was insufficient for relaxation and then the available oxygen was crowded down to 3-2 per cent. This necessitated very short operative procedures, for at least 10-15-20 per cent of oxygen is necessary to support life for any length of time. It was therefore a great step in advance to use nitrous oxide-oxygen, for then the mixture became 80-90 per cent nitrous oxide and 20-10 per cent oxygen.

Many of the accidents and objections to the use of nitrous oxide arise from the bad effects noted from the cyanosis due to insufficient oxygen. It is not necessary to go into a detailed description of asphyxia, suffice it to say that the respiratory and cardiac rates are increased, the blood pressure is elevated, there is deep cyanosis, rigidity of the voluntary muscles, spasmodic jerking movements (jactitation) and dilatation of the pupils. Treatment of this is the administration of oxygen, if untreated death rapidly ensues. However, momentary asphyxia of the above type, when oxygen is at hand, has been proven to be comparatively safe, and it is the prolonged state of slight cyanosis which gives the really damaging results. Morse demonstrates "a direct relationship between the frequency and severity of post-anesthetic vomiting and headaches, with the amount of cyanosis present during the operation. The duration of the cyanosis seems to be a more striking factor than the intensity, for transient cyanosis, though quite marked, was not succeeded by these sequelæ, while low grades of slight duskiness, prolonged, gave evidence of post-anesthetic acidosis." Aside from this is the question of damage to the heart muscle from an insufficient supply of oxygen.

The question then arises, What is the percentage of oxygen in the mixture of nitrous oxide and oxygen that is safe? A search was made through the literature for statements concerning the percentage of oxygen need, and these varied from 2-20 per cent of oxygen. However, the calibrations on most machines are incorrect for absolute percentages, so that the wide range of figures cannot be relied on or the low recorded per-

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

centages be wholly condemned. It was not until Connell perfected the mechanical difficulties of gas delivery that a definite table of nitrous oxide-oxygen percentages, with the results of varying mixtures, could be worked out. He found that any mixture less than 92 per cent nitrous oxide and 8 per cent oxygen was extremely dangerous and was useful only for momentary procedures, but even for this the use was condemned. He found the mixture 92 per cent nitrous oxide and 8 per cent oxygen, satisfactory for induction only. The zone recommended for abdominal surgery had the mixture of 89 per cent nitrous oxide and 11 per cent oxygen. In this zone the color of the patient was faintly cyanotic. The zone for surface surgery was 86-84 per cent of nitrous oxide and 14-16 per cent oxygen; here the color was normal. This zone with the addition of a slight amount of ether, when necessary, in suitable cases is recommended as best for all work, including abdominal surgery. A mixture of 80 per cent nitrous oxide and 20 per cent oxygen gives a subconscious analgesic state suitable for obstetrics.

Now, various conditions in individual patients arise to upset the minute regulation of gas proportions. It was the experience of Marshall and Cannon in war surgery, that patients operated on following severe loss of blood, or during shock, required a much greater percentage of oxygen for operative safety, than did normal subjects. With this as a basis, Jones and McPeck are at present conducting researches on guinea pigs, using nitrous oxide oxygen anaesthesia. After determining the proper and safe degree of oxygenation in a normal set of pigs, and the N_2O-O per cent curves plotted, the pigs have been ex-sanguinated to varying degrees and then reanaesthetized. In their preliminary report they state that they then found that the same proportion of gases safe in normal animals were dangerous and fatal to those ex-sanguinated. In fact it was possible to determine by the reaction of the exsanguinated pigs that a blood loss of 20 per cent demanded three to four times the amount of oxygen of normal pigs. This, therefore, is a very definite indication for using increased oxygenation with nitrous oxide, in the presence of recent hemorrhage.

Connell had previously stated that any altered capacity of the blood to transfer oxygen, either in decreased rate of blood flow, or diminished hemoglobin content, would upset his charted table of zones, and that persons with reduced hemoglobin, septic conditions, excessive or rapidly increasing weight, and growing children demanded a greater percentage of oxygen in N_2O-O anaesthesia. He stated that the percentage of oxygen need is approximately in direct ratio to the degree of anemia present, and that a patient with 50 per cent hemoglobin requires for the zone of light anaesthesia 18-20 per cent oxygen instead of 11 per cent required by normal man.

During the war some very interesting investigations were carried on at the Mineola Flying Field, concerning the oxygen need of men, candidates for the aviation service. The response of the aviator to a decreasing supply of oxygen was tested by experiment lasting from 25 to 145 min-

utes. Three methods of oxygen variation were employed. First—A chamber was constructed, in which it was possible to reduce the barometric pressure, and thus duplicate the pressures and oxygen tensions of varying heights in the air. Second—A rebreathing machine (with stationary barometric pressure of sea level), which started out with ordinary air, but gradually with the rebreathing the O content was decreased and the CO_2 was absorbed with caustic potash. Third—Respired air was diluted with increasing amounts of nitrogen. The results obtained from the three methods of oxygen variation were the same, proving that the barometric pressure of high altitudes is not the causative factor in mountain sickness, but that the difficulties in breathing, rapid pulse rate, headache, cyanosis and syncope are due to the diminished oxygen tensions of high elevations.

As the oxygen in the air inhaled from the apparatus was reduced, the man was thereby virtually elevated to a corresponding altitude. Thus a mixture containing 20 per cent oxygen has a barometric pressure of 760, and the altitude is sea level. When the oxygen percentage is reduced to 17.9 per cent it equals that of an elevation of four thousand feet and a barometric pressure of 651.

| Oxygen Percentages | Altitudes | Barometric Pressures |
|--------------------|-----------|----------------------|
| 15.9 | 7,000 | 579 |
| 14.2 | 10,000 | 516 |
| 13.2 | 12,000 | 478 |
| 12.2 | 14,000 | 444 |
| 11.3 | 16,000 | 412 |
| 10.0 | 19,000 | 368 |
| 6.4 | 30,000 | 230 |

As the oxygen percentages were decreased, almost the same symptoms were noted in these men as are noted by anaesthetists when the oxygen content becomes insufficient during anaesthesia, that is, an increase in respiratory volume and rate, an increase in pulse rate, an elevation in blood pressure and the appearance of cyanosis. There is headache and nausea, and the counterpart of this we have in N_2O -oxygen anaesthesia, as the post-anaesthetic headache and vomiting in cases that have been somewhat cyanosed during the larger part of the anaesthetic. In the aviators' tests, some men compensated so easily and so well that they stood, for brief intervals, as low as 6 per cent oxygen or an altitude of 31,000 feet, which is higher than any heavier-than-air machine has ever reached. Other men failed to compensate at all, or did so poorly, and, therefore, could not endure even the slight oxygen deficiency of moderate altitudes.

The respiratory and cardiac centers are ordinarily stimulated by about the same fall in oxygen pressure. In some subjects the first response began at an oxygen percentage of 17.9 per cent; while the majority showed the first response between 15.5 per cent to 16.5 per cent. This, therefore, means that in the average individual, when the oxygen content of the inspired mixture becomes less than 15 per cent, he must neces-

sarily put out some effort to keep metabolic processes at the proper level, and it would seem that low oxygen percentages under anæsthesia would be very similar to low oxygen percentages at high altitudes.

We then have the following to consider: Is the patient in question, under anæsthesia, able to stand the necessary increase in pulse rate, respiratory rate, and blood pressure elevation? and is this particular patient one of those who would react well in the aviator tests?—for there were three very definite types of reaction to the tests made. The optimum type showed no response until the reduced oxygen reached about 15 per cent, then there was a gradual increase in pulse, respiration and blood pressure until 7-6 per cent oxygen was reached, when the blood pressure, pulse and respiration started to drop and the patients fainted, with rapid recovery with administration of oxygen. The second type showed response at 17.9 per cent O and the compensatory reactions were excessive, pulse, respirations and blood pressure went very high and collapse came at 9-8 per cent oxygen, with a much longer time required to recover, and with severe headache for some time thereafter. A third type is seen in elderly people when there may be practically no response, no rise in blood pressure, very little rise in pulse rate and respiratory rate. The compensatory mechanism seems to be entirely overwhelmed. The counterpart to this type is seen in people who are unable to have ether added to the N₂O-O mixture, for relaxation, and who may become cyanosed in an effort to keep them relaxed sufficiently for operative work, and then, although there is cyanosis, there may be no change in pulse, respiration and blood pressure. These patients may then show post-operative myocarditis, due to the fact of the insufficient amount of oxygen supplied the heart muscle during the operation.

From the foregoing it can be seen that no person was able to stand an oxygen percentage of less than 15 per cent without certain definite compensatory reactions showing. This might be directly applied to N₂O-O anæsthesia, to the effect that no patient should receive less than 15 per cent oxygen, unless his heart allowed him to be placed in the optimum class above, and that no patient with any symptoms of cardio-respiratory strain be given less than 18 per cent oxygen, and that such patient would be better if a small amount of ether were given instead of relaxation.

In 1893 some experiments were performed on rabbits and dogs under anæsthesia, blood was taken by Oliver and Garrett and tested for the gaseous content. One animal was given pure N₂O without O, and blood was withdrawn during deep cyanosis. The analysis showed:

| | <i>Before Inhalation</i> | <i>After Inhalation</i> |
|------------------|--------------------------|-------------------------|
| CO ₂ | 34.3% | 15.66% |
| O | 22.0 | 3.49 |
| N | 1.8 | 11.23 |
| N ₂ O | .... | 22.49 |

This experiment was the only one of its type found in a very careful search of the literature.

Lundsgaard, and afterward Stadie, worked out the oxygen percentages in venous and arterial blood in cyanosed and uncyanosed individuals. But to our knowledge no one has worked out these under varying percentages of oxygen intake during anæsthesia. Lundsgaard collected venous blood and analyzed it first as to its total oxygen combining capacity and second for the actual amount of oxygen present in the sample. The difference between the two he termed the oxygen unsaturation. The extent of oxygen unsaturation in venous blood of normal individuals averaged 5.7 cc. oxygen per 100 cc. blood. He then examined a series of patients with decompensated hearts, the unsaturation here averaged 12.4 cc. per 100 cc. blood. With a return to compensation he found the oxygen unsaturation again within normal limits. Stadie found the venous oxygen unsaturation in cyanosed pneumonia patients to be 10.0 cc. oxygen per 100 cc. blood. He found that in normal individuals there was an unsaturation of 1.1 cc. oxygen to 100 cc. of arterial blood and in cyanosed individuals 5.6 cc. O unsaturation per 100 cc. of arterial blood.

With this experimental work before us we thought that the same line of investigation could be carried out under anæsthesia, with blood oxygen determinations to indicate what the degree of oxygen unsaturation is under varying percentages of oxygen intake.

Our proposed experimental investigation is to anæsthetize dogs with nitrous oxide and varying percentages of oxygen, to find the percentage of oxygen which first calls upon the compensatory mechanism of the animal. This will be done by Kymographic records of pulse, respiratory rate and blood pressure. We then will repeat the experiments, using rebreathing, and thus determine what change in oxygen percentage is necessary in the presence of carbon-dioxide; to then repeat a third time on exsanguinated dogs to determine the oxygen needs of low hemoglobin. It is proposed to take samples of blood, in all of the three types of experiments, at varying levels of oxygen intake percentages to determine the degree of oxygen unsaturation in the blood under anæsthesia, without cyanosis and with slight, moderate and intense cyanosis.

As a matter of practice anæsthetists ordinarily use the color of the patient's cheek, forehead and finger nails as the guide to the safety of anæsthesia, but Lundsgaard found that a considerable degree of oxygen unsaturation in the blood may be present without showing as cyanosis. He also found that cyanosis could not be produced in patients whose hemoglobin was less than 35 per cent. So that an accurate means of gas delivery with an oxygen percentage seldom less than 15 per cent is much to be preferred to the more or less haphazard methods usually employed.

Bibliography

1. Teter—Dental Cosmos, 1915, lvii, 1026.
2. Davis—Therapeutic Gazette, 1919, vol. xliii, p. 82.
3. Parker—Cleveland Med. Jr., 1909, vol. viii, p. 389.
4. Buckler—Maryland Med. Jr., 1908, vol. ii, p. 125.
5. Boyle British Med. Jr., 1917, vol. ii, p. 653.
6. Robinson—British Med. Jr., 1916, vol. ii, p. 291.
7. Bennett—Medical News, 1902, vol. lxxxi, p. 1118.
8. Evans—Amer. Jr. Surg. Anaes. Supp., 1916, vol. xxx, p. 52.
9. McGahey—Med. Record, 1917, vol. xcii, p. 769.

10. Boyle—Lancet, 1917, vol. ii, p. 667.
11. Gwathmey, J. T.—Text-book of Anaesthesia.
12. McMechan—International Jr. Surg., 1913, vol. xxvi, p. 205.
13. McMechan—Amer. Year Book Anaes., 1915, vol. i, p. 251.
14. Connell—Quoted in the above article.
15. McKesson—Quoted in the above article.
17. Byington—J. A. M. A., vol. iii, p. 697.
18. Karsner—Jr. Exp. Med., 1916, vol. xxiii, p. 149.
19. Smith, Lorrain—Jr. Physiology, 1899, vol. xxiv, p. 19.
20. Hoover—J. A. M. A., 1918, vol. lxxi, p. 880.
21. Greene—N. Y. State Med. Jr., 1903, vol. iii, p. 443.
22. Henderson—Am. Jr. Surg., 1917, vol. xxxi, p. 291.
23. Gwathmey—Med. Rec., 1904, vol. lxvi, p. 816.
24. Gwathmey—N. Y. M. J., 1916, vol. civ, p. 825.
25. Lutz and Schneider—Am. Jr. Physiol., 1919, vol. 50, p. 280.
26. Gregg, Lutz, Schneider—Am. Jr. Physiol., 1919, vol. 50, p. 302.
27. Lutz & Schneider—Am. Jr. Physiol., 1919, vol. 50, p. 327.
28. Gregg, Lutz, Schneider—Am. Jr. Physiol., 1919, vol. 50, p. 216.
29. Lutz & Schneider—Am. Jr. Physiol., 1919, vol. 50, p. 228.
30. Schneider—J. A. M. A., 1918, vol. lxxi, p. 1384.
31. Whitney—J. A. M., 1918, vol. lxxi, p. 1389.
32. Air Service Medical—Manual of the Medical Research Laboratory.
33. Henderson—J. A. M. A., 1918, vol. lxxi, p. 1380.
34. Lundsgaard—Jr. Biol. Chem., 1918, vol. xxxiii, p. 133.
35. Lundsgaard—Jr. Exp. Med., 1918, vol. xxvii, pp. 179, 199, 219.
36. Lundsgaard—Jr. Exp. Med., 1919, vol. xxx, p. 147.
37. Lundsgaard—Jr. Exp. Med., 1919, vol. xxx, pp. 259, 271, 295.
38. Stadie—Jr. Exp. Med., 1919, vol. xxx, p. 215.
39. Parrop—Jr. Exp. Med., 1919, vol. xxx, p. 241.
40. Oliver and Garrett—Lancet, 1893, vol. ii, p. 625.
41. Kaya & Starling—Jr. Physiol., 1909, vol. xxxix, p. 346.
42. Connell—Am. Jr. Surg. Anaes. Supp., 1917, vol. xxxi, p. 59.
43. Casto—Am. Jr. Surg. Anaes. Supp., 1918, vol. xxxii, p. 42.
44. Casto—Am. Year Book Anaes., 1915, vol. i, p. 31.
45. Van Slyke—Jr. Biol. Chem., 1918, vol. xxxiii, p. 127.
46. Pemberton—Surg. Gyn. Obs., 1919, vol. xxviii, p. 262.
47. Henderson—Am. Year Book Anaes., 1915, vol. i, p. 95.
48. Henderson—Jr. Biol. Chem., 1917, vol. xxxi, p. 217.
49. Henderson—Jr. Biol. Chem., 1918, vol. xxxiii, p. 31.
50. Henderson—Jr. Biol. Chem., 1918, vol. xxxiii, p. 39.
51. Haggard & Henderson—Jr. Biol. Chem., 1920, vol. xliii, p. 237.
52. Haggard & Henderson—Jr. Biol. Chem., 1920, vol. xliii, p. 3.
53. Haggard & Henderson—Jr. Biol. Chem., 1920, vol. xliii, p. 15.
54. Haggard & Henderson—Jr. Biol. Chem., 1920, vol. xliii, p. 29.
55. Graham—Anals of Surgery, 1921, vol. lxxiii, p. 170.
56. Barcroft—The Respiratory Function of the Blood.

CONDITIONS OF INDUSTRIAL ACCIDENT PRACTICE IN CALIFORNIA*

By THOMAS CHALMERS MYERS, M. D., Los Angeles

California was the nineteenth state in the Union to enact an industrial accident law for the protection of the injured laboring man. This measure was compiled by our legislators after an examination of laws adopted by other states and similar laws of other nations.

Subsequently other states have enacted similar measures, and in a like manner have used the California law as a model for their state. In their legislative consideration and press comments, the medical profession of California were frequently reported as being well satisfied with their law. This, I believe, is a misrepresentation and a misconstruction of the attitude of the majority of the members of our profession, and particularly the members of this Society. One can safely state that nothing has occurred in our organization which has caused so much dissatisfaction, discontent, suspicion and bad feeling as the Industrial Practice Act of California.

The bill was looked upon with considerable suspicion by all, and it was only after being assured and reassured by the officials of our Society that the rights of every member were amply protected, with proper safeguards included to adjudicate all differences among ourselves, also between ourselves and the insurance companies and the patients, and between the insurance companies and the patients, that it was finally accepted by the various county units.

The initiatory agreement entered into between insurance companies and the State Medical Society at Santa Barbara in 1914 was adopted by the House of Delegates, and is explained in detail in the May and June numbers of the California State Journal of Medicine, 1914, and provides under the heading "Choice of Physicians" as follows: "That the employer (or insurance company) is to have a right to a free choice of physicians and such selections are to be made from lists of names furnished by insurance companies. These lists of names to be the lists of members of the several County Medical Societies which collectively compose the Medical Society of the State of California, but no member may be compelled to do the work if he does not wish to. Provided, that in counties where there is no County Medical Society or in *Special Cases* where the employer may desire to secure the services of some physician who is not a member of his County Medical Society, he reserves the right to do so. Also, provided that in the larger centers the Societies are to prepare lists of names of members who are willing to do the work and to arrange so that the services of some of them may be secured at any time by means of a telephone exchange or some other plan by which their whereabouts may be ascertained. And also, provided, that the companies are to be permitted to advise their policy holders that certain physicians have in the past done work for them satisfactorily. It is understood that an insurance company may have a regularly appointed medical referee in any given locality." Editorially the Journal further states: "Any member of the Society may be called in if he wishes to do this work." "Any member has a choice to keep his patient and treat the injured one if he wishes to do so—other things being equal."

The general plan resulting in this agreement was formulated at a number of conferences between Dr. Jones, representing the State Society, Dr. Kugeler, of San Francisco Society, Dr. Parkinson, representing the council, Dr. Gibbons, representing the Industrial Commission and various representatives of insurance companies and approved by the Adjustment Board representing fifteen different companies. This contract was enacted for the purpose of protecting patients, employers, insurance companies and members of this Society. Gradually it has been abrogated until at present the rights of the majority of our members are ignored, with patients and employers being compelled to accept attention from men in whom they have neither confidence nor acquaintance.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

It is stated that the reason of this change is on account of the inefficiency of the doctors, both as to their methods of caring for the injured and the preparation of proper records and reports. It should be remembered at this time that many causes of trouble have resulted in surgeons trying to protect patients from unjust and commercial methods of underwriters. The practitioner is equally interested with the employer and the underwriter in restoring his patient to duty, and the insinuations received from insurance people that the medical profession have neglected this important point applies only to individuals and not to the profession at large. The structure of the practice of every physician and surgeon is based on the foundation of his ability to cure his patients and their subsequent early return to their vocation. Membership in our State Society should be made a sufficient guarantee of his qualifications to practice his profession.

Every American, be he working man or executive, believes that he has the inalienable right to select his own surgeon, and every sincere practitioner of medicine and surgery concurs with this principle insofar as it is compatible with proper attention and care. The California Industrial Practice Act, as interpreted by the Insurance Companies, annuls this and places their selection absolutely in the hands of the carriers, dictating and enforcing their wishes by threatened withdrawal of compensation.

The paragraph previously quoted from the State Journal recites the necessary constitutional authority to protect every member of this Society and is given in full in hopes that our officers, state and county, will cease to allow the abuse of authority by insurance companies and the brazen activities of industrial physicians and surgeons.

If its provisions have been nullified by time, by law, interpretation, or amendment of the law, it has been done without our knowledge or consent, and the officers whose duty it is to secure its enforcement are employed to fulfill their trust, and in turn to exact proper co-operation from like officers of the County Units.

Compliance with industrial people in their interpretation of the Industrial Practice Act should cease, and advice and rulings sought from our own legal department. To accept interpretation of a law as final without independent advice or court decision is a dangerous precedent and brands us with the mark of inefficiency.

Careful inquiry by correspondence and personal investigation fails to discover any definite methods used to select industrial surgeons by the underwriters, other than personal inquiry by insurance medical directors.

In our section those chosen are not noted among the medical fraternity as enjoying any distinguishing halo of intelligence. They are average men doing average work. Their dissatisfied and not always properly cared for patients are constantly soliciting assistance from those not privileged or accepted as competent by the underwriters.

The privilege was accorded the writer, with others, to serve on a committee of investigation of Industrial Practice conditions in a labor section close to Los Angeles. The committee found that two men had been chosen to supplant the local surgeons. One was imported from Los Angeles, and his idea of professional courtesy was to announce in a provincial manner on the street corners and in drug stores that the local men were incompetent to perform surgery and that he had been brought to the community to save their lives and limbs. Neither of the new men had the necessary X-ray apparatus and to this day have to refer their Rentgenology to their predecessors. Yet the chief reason given for their appointment was that the offices of the local men were not properly equipped to handle industrial work. The men supplanted are well known, not only in their community, but in Southern California, and some of them were competent enough to have been selected for hospital service by the Surgeon General of the United States Army during the World War. Can you imagine a more unpleasant or disagreeable situation than exists among the members of this Society who now practice in this community?

The hospitals used in our section by industrial surgeons are not characterized by their efforts to recognize the principles and assume the obligations of standardization, but rather have enjoyed the privilege of housing their patients through the relative cheapness of their charges. This confronts us with these questions: Why does one set of patients have in the same hospital a cheaper rate than another? Why is their anesthetic fee cheaper? Why is their X-ray work cheaper, etc.? It is unfair that your patients pay regular rates for anesthetics, X-ray, laboratory work and nursing, etc., while the insurance companies enjoy special rates for the same privileges.

Industrial surgeons are actively engaged in educational propaganda for recognition of their work as a special branch of surgery. This is a laudable ambition, and as long as they assume all the responsibilities of a specialty, it should be encouraged. We look to the specialist as the main source of educational instruction for the future. Socially and professionally he is presumed to represent the highest type of medical men. He is expected to limit his work, and if anything, is more deeply obligated to acknowledge the authority, and secure the enforcement of the constitution and by-laws of our Society and its component units.

The industrial surgeon as a specialist, must assume similar obligations and cannot deny the right of others, qualified by their county unit, to assume the care and responsibility of industrial cases without being deprived in return of the right to care for civil work not covered by the Industrial Practice Act.

When we are prepared to strictly limit the passing of sounds to the urologist, the swabbing of the throat to the laryngologist, the opening of boils to the surgeon, the curing of

fissure to the proctologist, we may then consider the merits of the industrial surgeon as a specialist, but would still be confronted with the problem as to where the dividing line should be between the industrial and general surgeon.

Because some, by reason of opportunity, personal solicitation, public proclamation of their ability, secure an inordinate share of any branch, hire stenographers and clerks to attend to their claim agency work, turn the care of their patients over to salaried assistants, who may be registered in the state but frequently not members of their county unit, accept salaried positions or consultation work from a flat fee broker, take cases away from fellow members equally competent by threatening the patient with loss of compensation, refuse to call fellow members in consultation when requested by the injured, post their names in factories to the exclusion of all others demanding to be called in case of accident by threatening cancellation of insurance, should they expect the recognition due a specialist?

Medical directors of insurance companies are usually conscientious in their efforts to protect their employers, but they must be reminded that loyalty to this Society is their primary obligation and asked to guard against the tendency of permitting their activities to be exclusively used for the benefit of insurance companies and neglect the welfare of our personnel. Their complaint that many are careless in making out proper reports, which necessarily must be complete, adequate and accurate, is unquestionably well-founded and must be corrected with a prompt willingness on our part to conform to their requirements. Our council has wisely provided the means for the adjustment of all disputes in the following paragraphs of the Santa Barbara agreement:

"Charges in excess of proper ones or bills unduly padded by fictitious or unnecessary visits should be deemed unprofessional conduct and subject to discipline by suspension or expulsion. In case a bill rendered by a member is regarded as excessive by the employer (or carrier), it should be submitted to the County Medical Society for scrutiny and adjustment, and if there still be failure to agree it may be submitted to the Council of the State Society or the Industrial Commission."

To insure us protection against the abuse of insurance by those who are well able to pay regular fees and likewise against the cutting of fees, our Council and insurance representatives accepted the following additional clauses:

"That incomes in excess of the maximum covered by law, \$1666 a year, are not considered in this fee schedule." "No contracts at flat fixed fees for all work are to be made and those now existing are to terminate at the earliest possible date."

It is well known that men earning annual incomes extending into many thousands are enjoying the benefits of the industrial accident law. Stockholders of manufacturing corporations occupying official positions are classified as salaried men, and no matter what their wealth or earning capacity may be, they may, and frequently do, accept industrial aid.

The use of flat fixed fee system, instead of being terminated as directed, is becoming more popular. There is more money in it for the underwriter, who is usually not connected with a National or board company, and an easy salaried job for the doctor with few, if any, of the ordinary cares of practice.

The flat fee is usually arranged in the following manner: A large corporation is, for instance, engaged in shipbuilding; spends in insurance, based on the regular fee schedule, \$150,000 annually. The flat fee broker or underwriter approaches the concern and offers to undertake their contract for \$125,000 a year, a saving to the corporation of \$25,000. The broker maintains a medical office and employs regular physicians, surgeons and consultants on a salary, many of whom are members of this Society.

Not satisfied with beating the fee schedule, he often skims a little cream from the doctor. One of our members states that he was offered the position of operating surgeon by an underwriter, provided he would rebate a percentage on hernias and other operations. This system, from all angles, is an absolute violation of the tenets of our Society.

The propriety of insurance doctors holding executive offices in the State and County Societies under ordinary circumstances cannot be questioned, but when found using their positions to further the claims of insurance companies and their medical departments as against their fellow members it is possible that the just demands of our membership for impartial recognition, careful consideration of their complaints, and a respectful hearing for their suggestions and amendments may not be courteously entertained. No section should be barred from office, but when occupying executive positions they should be careful not to deprive others of constitutional rights nor accord the privileges of our publications to outsiders when their own professional attitude is under consideration.

The fact remains that discord and contention have arisen among our fraternity, and the lack of appreciation of professional courtesy and medical ethics by industrial practitioners is the underlying cause. Ethics, in a broad sense, is the science of ideal human character. It pertains to all walks of life and is a fundamental law of the A. M. A. and its integral parts. Its application is the powerful influence which distinctly maintains the higher plane of the professional life over that of the commercial.

Two distinct classes of medical men are directly concerned in solving this problem. Those employed or designated by insurance companies, including specialists, who are directly responsible to this Society for the professional conduct of those with whom they consult, and those which comprise the balance of our membership.

The scope of industrial insurance already includes social medicine. Health insurance and State medicine are knocking at our door. The future of all is at stake and the internist, obstetrician, pediatrician and other specialists must become equally interested.

It is of prime importance that both sections should work together to devise a solution of this problem. All must maintain an attitude of sincerity and absolute fair dealing on a basis of protecting the profession at large. The blame for this utter confusion cannot be placed entirely upon the insurance companies. A communication received from the medical director of the State Accident Industrial Commission implies that insurance companies have never been supplied with a list of properly qualified surgeons by the County Units, nor have adequate means for securing prompt service of physicians been provided. Thus it is that more diligence must be exercised to see that everything is done to obviate the impression of negligence.

Nothing is more productive of bad feeling in the profession than to have one group set themselves up as superior and exclusive practitioners, using their attainments to monopolize certain lines of practice to the exclusion of others who naturally resent this lack of appreciation of our common interests as embodied by our State membership organization.

The man who assumes that he alone, with a few others in each unit, is the only one competent to do any special line of work is presumptuous, disloyal and a discredit to the splendid traditions of organized medicine.

To anyone who has watched the trend of political affairs, it is quite evident that a day of trial for the medical profession is at hand. Only by maintaining our high standards of professional character can we promote the stimulus which will excite the rank and file of our profession to present a solid front to the enemies which seek to debase our standards. Our industrial friends cannot escape by enacting one rule for insurance work and another for civil. The majority of our members have registered dissatisfaction with present conditions and delay in securing relief is only occasioned by lack of concert and State-wide consultation to decide what shall be the remedy for this deplorable condition.

To this end, an exact definition of measures to protect the rights of all are enumerated and repeated to refresh the minds of everyone concerned:

1. Each County Unit should select or nominate the men competent to do this work, general practitioners, surgeons and consultants. This group should include the men definitely used by insurance companies and should be controlled by a committee whose function is to pass on qualifications and protect physicians and carriers alike. The incompetent should be removed and remain removed until proven otherwise. This takes the control of our practice from insurance companies and insurance doctors and places it where it rightly belongs, namely, with the medical profession.

2. The privilege should be accorded every injured individual or his employer to call his personal surgeon, provided he is on the County Unit list of industrial surgeons.

3. The State Society should secure the enforce-

ments of the intention of the law that the privileges of the Industrial Act should be limited to individuals of moderate income.

4. The State Society and its component units should have fair and unbiased interpretation of the law from its own legal staff, and where the rights of our memberships are not protected, should take the proper steps to secure legislative amendments.

5. No member should undertake this work for less than the fee schedule nor accept employment with any firms indulging in this pernicious practice.

6. No member should employ on salary men who are not members of the County Society. Applications pending should be considered as membership.

7. Officers of the Society and County Units known as representing insurance companies should be made to understand a proper appreciation of the delicacy of their positions and prevented from using them for the material benefit of themselves or their companies.

8. All the rules of courtesy and ethics that have heretofore applied to the practice of medicine and surgery should hereinafter also apply to the daily life of industrial surgeons.

1501 S. Figueroa St.,

Los Angeles, California.

ACUTE LYMPHATIC LEUKEMIA WITH SPECIAL REFERENCE TO THROAT CONDITIONS—REPORT OF A CASE

By H. D. NEWKIRK, M. D., Anaheim, Cal.

Member of the Staff of the Johnston-Wickett Clinic, Anaheim, Cal.

Acute lymphatic leukemia is a disease not fully understood.

Hewlett in "Monographic Medicine,"¹ defines it as follows: "A diffuse, unrestrained growth of the tissues that give rise to the white blood cells. The disease is really in the blood-forming organs, and lasts from one to nine weeks." A very indefinite definition.

The chronic form, with its anemia, glandular changes and characteristic blood findings, is not often overlooked, but the acute type, which runs its course with speed and extreme virulence, simulating or complicating other and more common diseases, is rare and more apt to be passed over.

The literature is scant on this subject. Most of the reported cases seem to be complicated with some other affection.

Monroe² reports a case simulating meningitis, and Samson³ reports one complicated with noma in a child where the symptoms of leukemia disappeared during the onset of the noma, but later returned.

The etiology is uncertain. Two theories are possible:

1. Malignancy, based on the fact that in this disease we assume an unrestrained growth of certain cells in the body, but differing from the ordinary neoplasm in the fact that there seems to be no one definite focus. The pathology includes all the tissues concerned with the formation of white blood cells.

2. Infection, supported by the fact that the progress of the disease, with high fever, prostration and hemorrhagic tendencies, is similar to other diseases of infective origin. The nature of the infection, if such be the case, has not been discovered. However, Ellerman and Bong⁴ have succeeded in transmitting chicken leukemia to normal fowls, and they note the interesting fact that some of the animals inoculated developed the myeloid form, while others showed the lymphatic type. They consider the cause a filterable virus. Ziegler and Jochmann⁵ report several cases due to tonsil infection, and Hausemann suggests that many of its manifestations resemble those of severe diphtheria and other septic diseases.

The symptoms are usually well defined. The onset is fairly sudden, often starting with a chill, followed by fever, which soon becomes high and of a septic nature. The throat frequently shows evidence of early active inflammation, to such an extent that the case may be easily mistaken for a severe tonsillitis or peritonsillar abscess. Stomatitis is common. Hemorrhage from the gums, into the bladder and other areas, often occurs. The cervical glands enlarge early in the disease, but the swelling is not extreme. The spleen may not even be palpable, also, no evidence of disease may be found in the long bones. Anemia and prostration are always present. Cardiac weakness comes on early, and the disease is invariably fatal in from a few days to a few weeks.

The diagnosis hinges on the blood picture which quickly develops, rapid changes taking place daily. Without the blood-cell relationship, the diagnosis is difficult and often impossible. Acute miliary tuberculosis, acute pyemia, acute follicular tonsillitis, acute peritonsillar abscess and, in fact, any acute inflammatory disease may be easily mistaken for acute leukemia, especially those diseases having a severe throat infection.

Examination of the blood gives the diagnosis at once, and while the leucocytosis is increasing by leaps and bounds, the change in the character and relationship of the white cells is one of the earliest features, and cannot fail to call one's attention to the nature of the disease. As has been said, more mistakes occur by not making a thorough examination than by not knowing, and this is especially true in the diagnosis of this disease. Blood counts show a leucocytosis running to 500,000 or over per cu. mm. with large and small lymphocytes above 80 per cent. In the lymphatic type myelocytes are rarely present, and polymorphonuclears are less than 5 per cent. Transitional cells are common, so much so that it has been suggested that the different types of leukemia may be but varieties or different stages of the same disease.

Treatment of any kind is only palliative, for, as Greene⁷ says, "the disease is invariably fatal in a very brief time." Cases of the sub-acute and chronic type have been treated with Fowler's solution, benzol, X-rays and radium, and removal of the spleen in Banti's disease with but slightly better results.

Case No. 6684. J. O. The patient, a male, age twenty, had been apparently well up to one week previous, when he complained of sore throat. He had a small ulcer on his tongue, which he had been treating with a gargle. Family history was good. Past history, noted the usual childhood diseases, but nothing of importance for past ten years, except attacks of tonsillitis twice a year. Present examination showed patient fairly well nourished, but of sallow complexion and pale, and with very large, cryptic tonsils. Temperature, 104°. Pulse, 120. Right cervical glands somewhat swollen and tender. Glands elsewhere negative. Spleen not palpable. Lungs, heart and abdomen negative. Reflexes normal. Considerable blood was oozing from the throat, and the patient could open his mouth with difficulty. Tonsils were enlarged and right peritonsillar region swollen and hemorrhagic, with dark purpuric areas extending well over the vault, and out along the gums. The physician in charge had been in attendance the past two days, and stated that the throat looked typical of a peritonsillar abscess. He so diagnosed and, acting on this assumption, had incised deeply in the region of the swelling, but got no pus. He then, to make sure, probed at different angles, feeling that with this kind of throat and temperature pus must be present somewhere in the locality, but found none. The following day hemorrhagic areas developed, and the bleeding from the incision continued fairly profuse. After two days of continuous bleeding, we saw the case in consultation. In spite of loss of blood and high temperature, the boy said he felt good and was hungry. However, he looked very sick.

Our diagnosis of acute leukemia was made on the laboratory findings. Hemoglobin, 68 per cent. Erythrocytes, 2,760,000. Leucocytes, 33,800. Small lymphocytes, 26½ per cent. Large lymphocytes, 67 per cent. Polymorphonuclears, 1 per cent. Transitionals, 5½ per cent. Later the same day the white count went to 38,000, the percentages remaining about the same. By the following morning the white count was 125,000 with large and small leucocytes together, 94 per cent, polynuclears, 1 per cent, and transitionals, 5 per cent.

Realizing the hopelessness of the situation, yet anxious to check the hemorrhage, we gave 1 cc. of hemoplastin intravenously. In a few hours the bleeding from the throat incision stopped, but later the same day epistaxis began and the urine was quite red in color. This condition was partially controlled by a second injection of hemoplastin, but the pulse became faster and weaker, and the second day the patient died.

CONCLUSIONS

1. Acute lymphatic leukemia, while a rare disease, must not be overlooked when considering severe throat conditions.

2. The laboratory is absolutely essential in differentiating the various blood diseases, and though the case looks simple, unless emergency demands immediate action, the best practice calls for the taking of clotting time and complete blood and urine tests before any diagnosis is made, and especially before any surgical procedure of the throat or anywhere else is decided upon.

1. Hewlett—Monographic Medicine, Vol. I, p. 617.
2. Monroe—Journal A. M. A., Vol. 74, No. 9, p. 603.
3. Samson—Berl. Klin. Woch., Feb. 3, 1908.
4. Ellermoun (V) Untersuchungen Über das Voins der Buhnerleukamia. Z. Bchr. f. Klin. Med., 1914, LXXIX, 43.
5. Zeigler and Jochmann—Deut. Med. Woch., XXXIII, No. 19.
6. Hausemann—Berl. Klin. Woch., Jan. 5, 1914.
7. Greene—Medical Diagnosis, p. 157.

PRECANCEROUS LESIONS OF THE UTERUS.

By WM. G. MOORE, M. D., San Francisco.

The unsatisfactory results of any type of treatment of well-defined carcinoma of the cervix emphasizes the need of early recognition and treatment of all conditions which would appear to favor the development of cancer of the cervix or uterine wall. Why is it that cancer of the cervix in the multipara is more common than that of the body, while in the nullipara cancer of the body predominates?

In 412 cases reported by Sampson, 97 per cent had been pregnant. In 334 cases collected by Williams, 96 per cent had been married and nearly all had borne children. Cullen reports forty-nine out of fifty who were married and had borne children.

If, as we believe, it is due to trauma and irritation, cannot we lessen the number by early correction of this condition?

The term "precancerous," first suggested by Orth, has arisen from the fact that there is no sharp histologic line of demarcation between benign and malignant tissues, but that there are often border-line cases upon which competent pathologists will disagree.

The pathologist uses it as a term descriptive of histological elements in a given piece of tissue; the clinician often applies it rather loosely to such things as appear to be contributory factors in cancer causation, such as lacerations, erosions, polyps, inflammation, and other types of irritative lesions (Taylor) which characterizes the types of uteri most apt to develop cancer.

In this paper the term "precancerous" will be used in the stricter sense of the pathologist, which does not mean that the precancerous lesion is the cause of cancer or is early cancer, but simply that such lesions become cancer sooner or later in the majority of cases.

The earliest possible diagnosis is, of course, the utmost importance and at present a most fruitful field of endeavor, because a knowledge of the beginnings of cancer and its precursors will equip us with a knowledge of prophylactic measures which are always more effective than curative measures in the control of a terrible disease.

In the first place, all do not agree that there are conditions, which can properly be termed "precancerous." It is contended (Rubin quoting Van Hausemann and Pick) that a case has developed to that stage when it permits of diagnosis, or it has not, and therefore in the latter instance the carcinoma cannot be identified. These difficulties (Eden) have led observers to endeavor to define conditions which, while not definitely malignant, yet show such a tendency to end in malignancy that they may be regarded as half-way houses. Such conditions, if they could be detected, would rightly be called "precancerous."

It is obvious that, histologically considered, carcinoma must have a beginning (Rubin). The pathologist, like the clinician, is not prepared to make a diagnosis until some amount of destructive capacity is manifested either grossly or his-

tologically. Routine examination of all material, suspected and otherwise, would open up the possibilities of acquiring the necessary material for the study of the earlier phases of cancer formation.

The greatest practical difficulty arises in deciding upon what criteria the diagnosis, especially as regards malignancy, shall be based. What shall we regard as metaplastic non-malignant epithelial changes and what shall we regard as atypical epithelial which will sooner or later develop into cancer? Unless this point can be definitely determined, it is evident that we can never hope to improve our prophylactic therapy for cancer.

Cancer, then, is an evolutionary process requiring time to show its actively destructive process. Precancerous lesions, as a rule, pass very slowly into cancer. For example, leukoplakia of the mouth and bladder have been known to exist for years before showing areas of malignant degeneration (Hall-Marchand-Cabot-Bloodgood). Ewing says: "It is not true that a pathological condition must be either cancer or not cancer. It may be neither the one or the other. It may be in the process of becoming cancer."

Precancerous lesions have been described in nearly every region of the body where cancer occurs, especially the lip, mouth, skin, bladder and to some extent the uterus. One cannot help but be convinced of the actual occurrence of such lesions in organs after reading such articles as Ewing's, Buerger's, Marchand's, Cabot's, Davis', Hall's, Marion's, Bloodgood's and many others.

Carcinoma may be placed in two large groups as regards etiology (Ewing). Those in one group have been so placed because it has been observed that the cells of even the smallest established carcinoma appear to be entirely separate from the normal tissues and to differ essentially from those phases of atypical hypertrophy or inflammatory overgrowths which accompany other types of carcinoma. These well-established observations have led Ribbert to assert that the cells of carcinoma are isolated throughout their entire course, and hence the cells of origin must be isolated. This author has also affirmed that no one has ever seen the beginning of carcinoma of the breast, all true cancers of this organ being so well differentiated that the attempt to trace the neoplastic from the normal cell invariably fails. A careful study of 475 cases by Kilgore appears to bear this out. The comprehensive list of tissue abnormalities, as catalogued by Williams, Meyer and others, has established on a very broad basis the theory of Cohnheim that tumors develop from misplaced and embryonal cell groups which have never enjoyed a normal structure. In all this group of cases, the origin of cancer is from congenitally misplaced or abnormal cells, and not from transformed normal cells. Precancerous cannot be used in connection with this group of carcinomata.

In the other very extensive group the evidence points to the origin of carcinoma from previously normal adult cells which pass through a series of changes induced by chronic irritation and

terminating in carcinoma. This class of tumors belongs to the so-called "Irritation Group," and the preliminary cell changes have been called precancerous lesions, as already defined. Clinical observation and morphological study have long indicated that the majority of important tumors are not dependent on congenital abnormalities in tissue structure, but arise from once normal but previously altered tissues, and that various forms of chronic inflammation and irritation are observed to precede the appearance of most tumors.

A careful review of the work of Hall, Cabot, Davis, Marion, Marchand, Weir, Berkeley and Bonny, Sweeny and Bloodgood in regard to skin cancer, cancer of the mouth, of the bladder, and vulva should be sufficient to convince the most skeptical in the precancerous lesion as a definite entity and urge us to further effort for evidence of such lesions in the uterus.

The lesions of the cervix uteri which have been most commonly designated or suspected as being precancerous are:

(1) Cervical erosions, (2) lacerations, (3) chronic endocervicitis, (4) chronic hypertrophy, (5) leukoplakia, (6) senile changes, (7) polypi, (8) metaplasia, (9) glandular hypertrophy, (10) submucous fibromata.

The alteration in structure which precedes the definite development of carcinoma of the cervix have been variously interpreted. Schauenstein, Sitzenfrey and Schottlander describe as characteristics of beginning carcinoma the following changes:

1. The appearance of groups of irregular hypertrophied epithelial cells with hyperchromatic nuclei, with irregularity and indistinctness of cell borders.

2. Loss of regular stratification of cell layers, especially of the proliferating basal cells, (Schottlander). He also emphasizes the importance of marked nuclear granulations.

The significance of these changes is contested. Huerlin and Pick interpret them as atypical hypertrophy and regeneration. Yet if to the above criteria are added:

3. Downward growth of epithelial papillae and definite heteropia, there is little doubt that one has to deal with the early stages of carcinoma. Bloodgood emphasizes the breaking through of the basal layer of cells and lymphoid reaction about the papillae. Rubin pictures extremely early but quite definite proliferation of atypical cylindrical and squamous cells on the surface and in the glands of old erosions, and the routine study of such erosions reveals many phases of such precancerous lesions. It need not be assumed that every case presenting the above changes will necessarily develop cancer, focal epidermization often remaining stationary; but it is highly important to recognize that the majority of cervical cancers develop from such altered cells. When atypical hyperchromatic and hypertrophied cells are growing downward from the epidermis or fill enlarged gland alveoli, the diagnosis of beginning carcinoma is justified.

Ewing lists as histological criteria in the diagnosis of cancer the following:

1. Cellular overgrowth passing beyond that observed in other processes affecting the same tissues.

2. Atypical qualities of the cells, metaplasia, anaplasia.

3. Loss of polarity.

4. Heteropia.

5. Desoplastic properties.

6. Local invasive properties.

7. Metastases.

Many interesting specimens of early epithelial proliferations have been found in the routine microscopic examinations of all tissues removed at operations in the Gynecologic Clinic of the University of California Medical School. These range from simple epithelial proliferation, possibly as a result of inflammatory changes, to microscopic areas which show mitotic figures and invasion of the basement membrane and adjacent structures by new-formed cells.

THE VALUE OF BASAL METABOLISM ESTIMATIONS IN CASES WITH LOWERED METABOLISM*

By R. B. HILL, M. D., Los Angeles.

We are learning more and more that the ductless glands of the body control many of its functions by their specific activities. The physical and mental development of the individual are dependent on their action and interaction. Nutrition of the body, of the mind and of the sex organs is dependent on the trophic stimuli of the endocrine system. These glands are concerned with the body growth long before their trophic relation is evidenced by the development of the secondary sex characteristics.

It has been known for years that the secretions of the ductless glands have been intimately related to the metabolism of the body. However, it has been only within the past few years that they have received the study that their importance justifies. Such interest has been aroused chiefly through the clinical application of the results of purely scientific studies and the devising of methods of study which could be used by the clinician. The determination of the basal metabolic rate has become a necessary factor in diagnostic medicine, and the value of this procedure in aiding in the determination of the activity of the endocrines is rapidly becoming recognized.

While the action of all of the internal secretions upon metabolism is not entirely clear, it has been definitely established that one controlling factor in the regulation of basal metabolism is thyroxin, on which the functional activity of the thyroid gland is largely, if not altogether, dependent. So characteristic of thyroid diseases are changes in basal metabolism that its determination is accepted as an index to the activity of that gland, provided, of course, that other diseases which bear upon metabolism are excluded.

While the determination of the basal metabolic

*Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

rate furnishes reliable proof for or against the under or over-activity of the thyroid gland, and it is not necessary to depend entirely upon the hormonal signs and symptoms, the physical characteristics do play a most important role in the diagnosis.

The thyroid has been called the "gland of energy." "It speeds up and activates all the functions and organs." The patient suffering from hypothyroidism lacks energy, is dull, has a tendency to melancholia and has a poor memory. There are changes in the skin and hair, the patient looks old; there is enlargement of the abdomen and a tendency to become stout. Mucoïd edema of the subcutaneous tissues and an atheromatous change in the aorta are sometimes found. There is a diminution in perspiration, a moderate degree of anemia and the genital functions are diminished; digestion is altered. Thyroid inhibits the islets of the pancreas, therefore in cases of decreased thyroid activity the power to assimilate carbohydrates is increased.

Peristalsis and intestinal secretion are influenced to a certain extent by thyroid secretion, so that many digestive annoyances are associated with thyroid affections. An altered relation in the secretion of the thyroid and pituitary may, owing to their relation to the pancreas and liver, markedly influence the sugar tolerance and bear a close connection to diabetes.

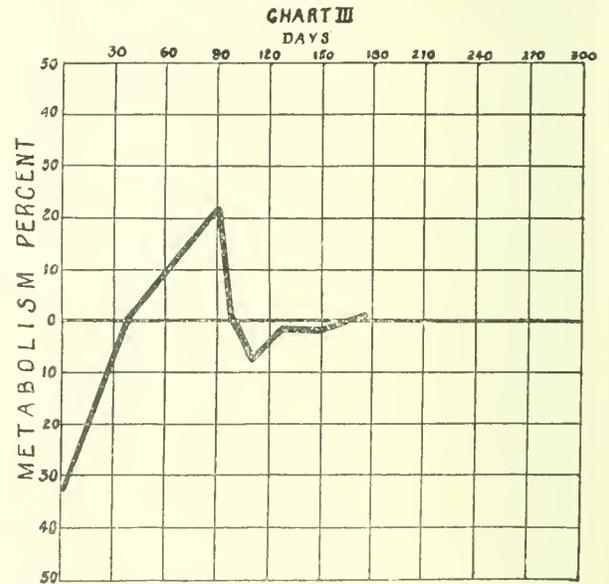
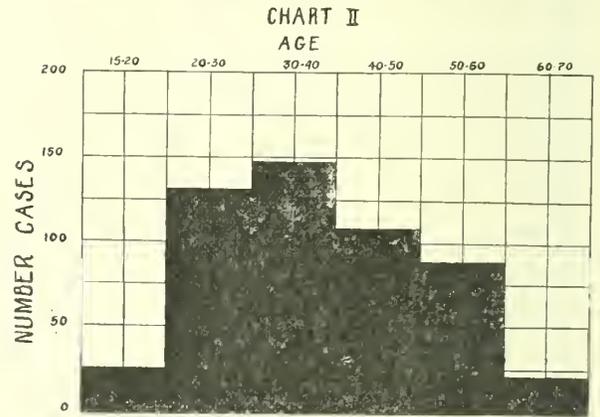
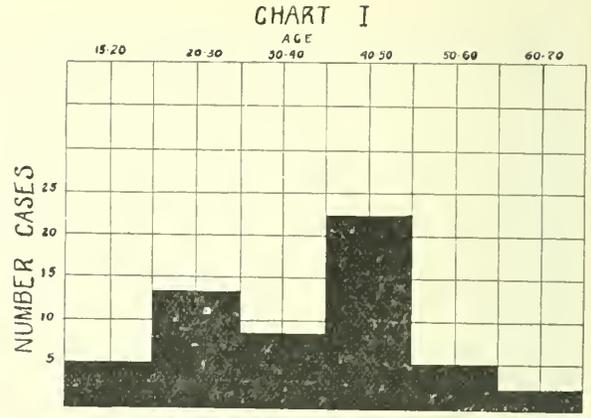
The thyroid, aside from its many stimulating and protective functions, is distinctly a sex gland. During the period of menopause there is a normal waning of ovarian function, with which there should be a gradual diminution of thyroid activity. Since every ductless gland is affected by the underactivity or the overactivity of any of the other glands, the instability of gland function, so particularly marked in the female, can readily be accounted for. This is shown from the fact that diseases of the thyroid are from six to ten times more frequent in women than in men. The entire co-ordination between the glands is often upset at the menopause, hence at this time we frequently see nervous disturbances in the female.

When the nervous and digestive symptoms of thyroid disorders, the associated mental upsets, the metabolic changes and physical and mental lack of tone and energy are considered, it is evident that in this type and numerous milder forms there may be included many cases suffering from hypothyroidism which in the past were diagnosed as hysteria or neurasthenia.

An analysis of the outstanding signs and symptoms, together with basal metabolic readings of a series of 54 cases, in which the basal metabolism readings were low, is presented. In many of the cases a diagnosis was definitely established and in others clinical diagnoses confirmed by an estimation of the oxygen consumption.

Of these 54 cases, 48 were females and 6 males. Five were between the ages of 15-20, thirteen between 20-30, seven between 30-40, twenty-two between 40-50, five between 50-60, and two between 60-70.

Chart I illustrates graphically the ages in



which such derangements are most common. It will be seen that the greatest number occurred between the ages of 40-50, or the menopause age, and the next largest number between the ages of 20-30, or the period when glandular stability is being established.

As these cases all occurred in a large general office practice, it was thought that the disproportion of the cases between the ages of 40-50 might be accounted for by the fact that the greatest

number of all patients registering were between those ages.

Chart II, prepared from a survey of the ages of 540 consecutive cases, shows that the peak is reached between the ages of 30-40.

The estimations were made with a Benedict respiration apparatus and the arbitrary figure of minus 10 taken as the lower limit of normal. It has seemed to me that the wide range ordinarily accepted for the normal reading is too great when the estimations are well controlled, as most of our normal readings do not vary more than 5 per cent.

The readings in the 54 cases varied between minus 13 and minus 47, the average being minus 20.2 before treatment was instituted; the average reading following the administration of thyroid extract, thyroid extract and ovarian extract, and, in some, ovarian extract alone was minus 4.4.

The chief complaints of forty-eight of the patients were nervousness, exhaustion and no ambition, indefinite symptoms which might be due to a variety of causes, the most common probably being syphilis and tuberculosis. There was no evidence of tuberculosis or syphilis in any of the cases physically. The radiological and serological examinations were negative. The typical appearance of the advanced myxedema patient was not present in any of the cases. Fourteen complained of a rapid heart, and fifteen of a rapid gain in weight. The thyroid gland was definitely enlarged in fourteen; three of these complained of palpitation. The pulse was slow in forty. The average systolic blood pressure was 125; the average diastolic pressure 74.

Following the administration of glandular therapy twelve of the cases were apparently well, thirty-eight improved and four unimproved. Of the four unimproved, three were epileptics and one a case of paralysis agitans. The average time necessary to bring the metabolism readings to normal was three weeks. Undoubtedly, many classed as improved will eventually be entirely well, as it is sometimes difficult to establish the dosage of the glandular extracts necessary for a particular patient. To accomplish this, it is necessary to follow the clinical course closely and make frequent basal metabolism readings.

Chart III shows the basal metabolic curve of a patient who was given thyroid extract and did not report for observation again for seven weeks, when there were marked symptoms of hyperthyroidism and the basal metabolism reading was plus 23.

The study of the present group of cases has impressed me with the relative frequency of the condition and the marked improvement that can be attained by the administration of some of the glandular extracts in selected cases. While it would seem to be unwise to become too enthusiastic over what seem to be satisfactory results in complaints of this kind until the cases have been observed over a long period of time, the results are presented for what interest they may have.

RESTORATION OF FUNCTION IN ACQUIRED HAND DEFORMITIES*

By A. GOTTLIEB, M. D., and L. I. NEWMAN, M. D.,
San Francisco, Cal.

From the latest report of the Industrial Accident Commission of California¹ we have extracted figures to demonstrate the "total" number of industrial accidents in the state and the average disability in days; the number of cases of all permanently disabled and their average disability in days for which compensation had to be paid to the employes; and we have compiled figures from the same source to show the frequency of "hand" injuries and deformities and the resulting losses in time, function and compensation payments. Comparing the figures for the "total" with those for the "hand," we learn that hand injuries, not counting the hand deformities which are secondary to arm and forearm lesions, form 30.3 per cent of the total number of industrial accidents, and that the average loss of working days is 2.8 times greater for the hand than for all injuries combined. The reason for this state of affairs is to be sought in the fact that the hand is the most needed tool for the performance of work and that, notwithstanding accident prevention measures, it frequently gets caught in the working machine; further that no workman can return to his occupation unless the wound has healed and at least minimum function has returned, which accounts for the large number of lost working days.

From the figures of the report given under the heading "loss of function" it has been calculated that in a number of cases the hand represents 65.3 per cent of the "total." This high percentage of hand cases with loss of function can only be accounted for by the neglect of early preventive physiotherapy in the acute stage of the injury because of the wrong conception deeply rooted in the medical profession that functional restoration is the object of aftertreatment with physical remedies and can be entrusted to the masseur or the reconstruction aid.

The comparative low figures in days, i. e. 214.2 for the "hand" against 352.1 for the "total" (chart 1) during which temporary compensation has been paid, is explained by the multiple cases, 783, of low percentage, 1-10, of impairment (chart 2). Under this column are classed the cases which have resulted from the minutest injuries, cuts and bruises, to the more severe which, however, return to work within not over forty weeks.

The economic loss sustained by industry through hand injuries is enormous but uncertain of calculation, because it involves so large a number of workmen of various vocations which are thrown out of work for a considerable length of time during which they are not sick enough to be hospitalized and not well enough to be useful. This type of injured are not only forced to idleness but are exposed to moral degradation and frequently to compensation neurosis as well.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Chart 1. From Table XV of the Report.¹

| Location of injury | No. of cases | —Total— | | —Loss of function— | |
|--------------------|--------------|--------------------------|--------------|--------------------------|--------------|
| | | Aver. disability in days | No. of cases | Aver. disability in days | No. of cases |
| All | 57,991 | 39.3 | 1,955 | 352.1 | |
| Hands | 17,580 | 113.9 | 1,276 | 214.2 | |

Chart 2. From Table XVI of the Report.¹

| Permanent disabilities and Total cases | Loss of use | percentage of impairment of earning capacity, etc. | | | | | |
|--|-------------|--|-------|-------|-------|-------|----|
| | | 1-10 | 11-20 | 21-30 | 31-40 | 41-50 | |
| All | 1,741 | 757 | 938 | 365 | 224 | 84 | 53 |
| Hands | 1,068 | 321 | 783 | 152 | 69 | 33 | 19 |

Preventive physiotherapy: In the acute stage of the injury, physiotherapy is a prophylaxis against muscular atrophy, adhesions of tendons, stiffness of joints and the development of trophic changes. No time should be lost in its application by regarding physical measures as an object of aftertreatment; it should be practiced by the attending surgeon or under his strict directions as a supplement to the surgical or orthopedic therapy. The surgeon, however, must be acquainted with the various agencies and know their indications. Only by an intelligent application of physical remedies in the acute stage will the number of minor impairments, 1-10 per cent, which swell the figures given under "loss of function" on chart 2, be considerably reduced.

Physiotherapy in fully developed cases: A detailed description of the methods to restore function to acquired hand deformities has been fully outlined in an article by one of the writers² and need no repetition here. It should only be remembered that the less time is lost from the union of severed tissues until the patient is submitted to physical treatment, the quicker and better will function be restored and the reverse. The truth of this statement is obvious if one fixes in mind the objects of physiotherapy in acquired deformities, which are: to increase circulation, to soften and stretch contracted tissue, to loosen scars and re-establish elasticity in ligaments, to regain lost muscle power and restore motion to joints of the wrist and fingers by gradually breaking up the articular and periarticular adhesions; and if one recalls the theory concerning the transformation of muscles, tendons, ligaments and other connective tissues as advanced by Riedinger,³ which teaches that in the course of time after injury the

tissues on the concave side of the deformity shorten and thicken, while on the convex side they lengthen and attenuate. The more time is allowed for this tissue transformation the more pronounced and resistant will the deformity become and functional restoration be the more tedious and time consuming.

To confirm the above considerations about physiotherapy, fifteen cases have been selected at random from the files of the State Compensation Insurance Fund and tabulated on chart 3 to demonstrate its necessity in restoring function to the damaged hands and to procure actual savings in compensation allowance.

All cases presented bear witness to the fact that functional restoration has been obtained from about 40 to 100 per cent. Whenever the treatment was instituted early, as in the cases 6, 7, 8, 9, 10, 12 and 15, functional gain was at a maximum and the savings proportionately large; while the delay of treatment up to three months after the injury, as in cases 1, 2 and 5, resulted in a lower functional improvement and in less financial saving. The value of physiotherapy at any event is obvious from the cases 3, 11, 13 and 14, which presented time lost since the injury in excess of three months and required a high percentage of disability rating; notwithstanding these unfavorable conditions the cases have improved in function from 40 to 100 per cent and have resulted in equivalent financial savings in compensation.

The case 4, an exception to the rule, represents money lost instead of saved, because after five months of physical therapy the rating in money was not reduced, on the contrary the amount was augmented by the expense of the treatment and by the payment of temporary compensation during the same. The treatment, however, has restored the man from practical helplessness to a fair usefulness in his earning capacity before his final discharge.

Summary: The stated facts leave no doubt that physiotherapy should be administered early after the injuries, by orthopedists welltrained in physiotherapy, or under their supervision, in order to obtain the highest degree of functional and economic returns; and that no case should be regarded closed and submitted for final rating until the

| Case No. | Preliminary Per cent | Rating Amount | Time since injury | Physiotherapy Length of treatment | Final Rating Per cent | Amount | Expenses for Physioth. | Temp. Comp. | Savings |
|----------|--------------------------------|---------------|-------------------|-----------------------------------|-----------------------|-----------|------------------------|-------------|-----------|
| 1. | 35 | \$3000.00 | 3 months | 6 months | 17.5 | \$1500.00 | \$180.00 | \$510.00 | \$ 810.00 |
| 2. | 32 ³ / ₄ | 2500.00 | 3 " | 6 " | 18 | 1340.00 | 300.00 | 460.00 | 400.00 |
| 3. | 30 | 2500.00 | 3.5 " | 3 " | 0 | — | 65.00 | 250.00 | 2185.00 |
| 4. | 69 | 5000.00 | 2.5 " | 5 " | 69 | 5000.00 | 132.00 | 425.00 | *557.00 |
| 5. | 60 | 5000.00 | 3.25 " | 5 " | 20 | 1700.00 | 125.00 | 510.00 | 2675.00 |
| 6. | 8 | 442.00 | 2 " | 11 days | 0 | — | 30.80 | 143.00 | 268.00 |
| 7. | 15 | 840.00 | 1 month | 6 weeks | 0 | — | 50.00 | 168.00 | 622.00 |
| 8. | 16 ² / ₃ | 924.00 | 4 days | 7 months | 0 | — | 108.00 | 420.00 | 396.00 |
| 9. | 10 | 800.00 | 2 weeks | 6 " | 0 | — | 95.00 | 170.00 | 635.00 |
| 10. | 35 | 2000.00 | 1 month | 2.5 " | 6 | 350.00 | 70.00 | 200.00 | 1380.00 |
| 11. | 20 | 1000.00 | 6 months | 2 " | 0 | — | 37.00 | 200.00 | 762.00 |
| 12. | 17 | 1000.00 | 3 weeks | 6 weeks | 6.2 | 685.00 | 46.00 | 90.00 | 579.00 |
| 13. | 16 | 1400.00 | 4 months | 2 months | 10.3 | \$895.00 | 65.00 | 180.00 | 260.00 |
| 14. | 15 | 715.50 | 5 " | 4 " | 7.3 | 365.50 | 110.00 | 176.00 | 53.50 |
| 15. | 24 ¹ / ₄ | 1863.00 | 3 weeks | 6 weeks | 1 | 76.00 | 60.00 | 114.00 | 1613.00 |

* Loss.

expert opinion of a reconstructive physiotherapist has been obtained concerning the possibilities of improving the deformity by further treatment with physical measures.

References:

1. Report of the Industrial Accident Commission of the State of California from July 1 to June 30, 1920. Pages 108-110.
2. Deformities of the hand acquired after accidents. Dr. A. Gottlieb. Calif. State Journ. of Med., 1921, XIX, 72.
3. Anbildung und Schwund oder Erhaltung der Substanz und der Funktion. J. Riedinger. Centralblatt der Chir., 1897, No. 10,273.

THE IMPORTANCE OF THE VEGETATIVE SYSTEMS, NERVOUS AND ENDOCRIN TO CLINICAL MEDICINE.*

By F. M. POTTENGER, A. M., M. D., LL. D., F. A. C. P., Monrovia, Calif.

It is unnecessary to emphasize before a group of neurologists that the study of the nervous system furnishes the basis for understanding the clinical manifestations of disease. It is necessary, however, to emphasize that neurology as a specialty, as practiced in the past, largely left out of account that branch of the subject which is of greatest importance to general medicine, and consisted too much of recognizing hopeless organic nervous diseases, localizing cord and brain lesions, and diagnosing and differentiating various forms of mental diseases. By thus limiting the field, neurology has so far withheld from itself the honor which rightly belongs to it of being the foundation structure through which disease expresses itself, and has offered little inspiration or help to the student of general medicine. This, however, is now in the process of change, and with this change there is developing an interest in disturbances in that portion of the nervous system which presides over organic function; and, in those forms of mental distress which accompany every disease and which of themselves produce many symptoms. These are commonly found in the every-day practice of medicine and are amenable to treatment. I refer to altered relationship in the vegetative nervous system and to psychopathologic states with their many functional disturbances.

This broader field comprises a study of the physiologic control of the organism; the nervous system, both voluntary and vegetative, and the system of endocrin glands. It further comprises a study, on the one hand, of the manner in which these systems are affected by psychical as well as physical stimuli, and, on the other hand, of the manner in which the physical and psychical systems are affected by nervous and endocrin stimuli. In the developmental stage of what we are pleased to term modern medicine, through which we are now passing, laboratory study and specialization have dominated the field. There has been a tendency to magnify the importance of certain lines of study and to minimize others; to magnify the part at the expense of the whole. There has been too much of a tendency to treat special branches of medicine as entities apart from the

general subject. This idea has been further fostered by the prevailing tendency to consider the disease apart from the patient.

The error of this attitude has been gradually forcing itself upon the leading thinkers in all specialties, with the result that they are beginning to realize that their special subjects are only minor branches of the whole, and the importance of general medicine is again being emphasized as it has not been since the dawn of specialization. No group of physicians should be able better to understand the disintegrating influence of specialization and the harmful effects of illogically developing the study of parts and systems apart from the whole, than neurologists, for their study leads them more than any other group of specialists to study the patient and his reactions and to an investigation of those structures of the body which control normal activity and through which abnormal activity is expressed. No other group of men should appreciate so fully the unity of the human organism and the incompleteness of the grasp of present-day medicine which has so exalted the study of disease and which has attempted to divide diseases into those of this and that organ or system. No disease is limited to a given organ or system. Every disease affecting the human body should be looked upon as a disease of the whole organism. The general action may not be evident in some of the minor maladies; yet there can be no pathologic process so slight that it does not affect nerve or endocrin control, and through these exert an influence upon other parts of the body.

As the body is a unit, so should medicine be a unit; and diseases should be studied with reference to their effect upon the body as a whole. Neurologists are the only members of our profession who have been giving the major portion of their time to the study of the patient's reactions during the era now passing, in which the disease and disease process has been emphasized in contradistinction to the patient. The neurologist has studied the nervous and psychic side of the patient, but unfortunately instead of recognizing the broadness of this study and the manner in which it underlies the entire study of medicine, he has in much the same manner as the gastroenterologist, the heart, the lung, the ear and eye specialist, developed his subject in its narrow aspects and not in its relationship to medicine as a whole.

It is now time for neurology and psychopathology to be enlarged and studied in their broadest aspects. What this broad aspect is, can be appreciated best by considering man as a physiologically functioning organism which is obliged to adapt itself to a physical and social environment. If this organism could develop normally and thereafter always remain in a favorable environment and be spared harmful stimuli, there would be no physical disease and no pathologic psychical states. But such is not the case. Along with the continuous flow of normal sensory stimuli which reaches the higher centers over the peripheral sensory nerves, the reaction to which makes the normal man, there come also many harmful stimuli, some of which arise from definite disease-

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

producing factors such as micro-organisms, others that result from abnormal strength of normal stimuli. Some of these are sufficiently strong to disturb normal adjustments, causing functional disturbances and producing the condition which we recognize as disease.

Disease declares itself by symptoms, that is, by disturbed function. So long as function is unimpaired a disease process is making no impression on the physiologic activity of the organ. We can conceive of disease processes being present, yet failing to cause recognizable symptoms. In such instances the nerves are capable of withstanding the stimuli produced by the pathologic process and of still performing their function normally, or the process expresses itself in symptoms which we fail to recognize.

This we see in some of the minor maladies, and also at times in many of the more serious chronic diseases. There comes a time in many of the latter when we speak of an arrestment of the clinical activity, although the pathologic process is not removed. This is illustrated in such diseases as tuberculosis, malaria and syphilis. The patient may be free from the usually recognized symptoms, although the disease is not healed.

In medicine, because of the dominance of pathologic anatomy over pathologic physiology, we have caused much confusion by dividing diseases into organic and functional. We have assumed the attitude that functional diseases are unworthy of scientific attention. But now, just when this opinion is well established, we have learned that our judgment was wrong and that diseases express themselves in disturbed function, known as symptoms, and that disturbances in function are of importance to the organism, whether they are caused directly by a disease process in the organ affected, or are expressions of disturbed nerve balance, the origin of which is in some distant structure, or are produced by psychic unbalance.

Symptoms according to medical teaching are divided into two classes, subjective and objective. Those of the latter group are often called signs, which confuses and might suggest that they are caused differently. The former are noticed by the patient himself, and the latter are recognized by the observer. They are all disturbances in function and should be classed as symptoms, no matter how observed. A rapid pulse, a high blood pressure, a lagging chest wall, a disturbed innervation in the larynx, a dilated pupil are just as much symptoms as pain, malaise, cough, dyspnoea, heartburn, deafness, and disturbed vision. These are, one and all, produced by a disturbance in the normal physiologic activity of the tissues or organs affected.

In the past our efforts have had the effect of confusing instead of clarifying these disturbed relationships. Particularly has this been true in the symptomatology of visceral disease. We have looked upon symptoms as entities, when, instead they should be considered as disturbances in the normal working of the human machine. Symptoms do not necessarily belong to the organ or part in which they are expressed. Hilton, in that

great contribution to medicine, "Rest and Pain," recognized this fact with reference to visceral pain. He says: "When a patient is suffering from pain in any part, he is instinctively inclined to believe that he must also be suffering from inflammation in that part. Pain, as we all know, is not by itself an indication of an inflammatory state, nor is redness, nor is swelling; for any or all of these may coexist without local inflammation"; again: "Pain in any part, when not associated with increase of temperature, must be looked upon as caused by an exalted sensitiveness of the nerves of the part, and as a pain depending upon a cause situated remotely from the part where it is felt." And further: "I would ask you to regard them (pains) as resulting from some direct nervous communication passing between the part where the pains are expressed and the real and remotely situated cause of the pain."

This quotation from Hilton expresses the essence of symptoms of visceral disease—a disease expresses itself not only anatomically but physiologically. In fact, there are certain syndromes which are recognized as diseases, such as hay fever, and asthma, which have no known pathologic anatomic basis. This same is true of the functional disturbances which are caused by psychopathologic states. I know of no disease, however, which does not have a pathologic physiologic basis. The physiologic expression is the one of greatest importance to the patient. A grasp of this conception removes high and low blood pressure from diseases of the circulatory system, and places them in general medicine. It shows that most of the symptoms on the part of the gastrointestinal canal do not arise in the canal itself, but in structures which are reflexly connected with it. It removes most diseases which are expressed by pain in the chest and abdominal wall from the surface of the body to underlying viscera. The same may be said of the secretory disturbances of the various important organs of the body, in fact, of all disturbed function. A disturbed function of an organ calls for a knowledge of the nerve connections of that organ and an understanding of what local and general causes may be operating to influence its nerve supply. All of this requires a grasp of the body as a whole and emphasizes the fact of the unity of the human organism and likewise the unity of the study of its diseases—the unity of medicine. Every important disease should be studied in its pathologic anatomic, pathologic biochemical, pathologic physiologic and psychopathologic aspects.

Nerve relationships, endocrin secretions and their actions, the effect of the discharge of physical and psychical stimuli during health must be studied intently by the neurophysiologist until they are understood and made the common property of the medical profession. To this end neurophysiology must be earnestly studied. It offers a promising field for the best minds in medicine today. When this has been accomplished, the task of interpreting the pathologic reactions in the presence of disease will be greatly facilitated and medicine will be stripped of much of its con-

fusion and mysticism. It is to the neurologist and the psychopathologist that we look for guidance in this important field of medical research.

Neurology in this broadened sense will assert itself as the basis upon which the future structure of medicine may be constructed, in which all the parts as represented by the many specialties today will take their place and be molded into the unified whole.

Hilton, John: "Rest and Pain," 1913, Twelfth Edition, p. 70 and 71, G. Bell & Sons, Ltd., London.

THE ETIOLOGY OF PARENCHYMATOUS NEPHRITIS

By GEORGE E. EBRIGHT, M. D., Assistant Professor of Clinical Medicine, University of California Medical School.

A consideration of the etiology of acute and chronic nephritis presupposes a definition of the term nephritis, and here one is confronted with evasions, contradictions and confusion. Twenty years ago a definition¹ of nephritis was "An acute inflammation of the kidneys, more or less diffuse in nature. It may be either of a mild, severe or grave character." This definition was acceptable at that time for the lack of a better one, but the conception of nephritis as a disease is undergoing modification. Herrick² says: "By the term nephritis is meant an inflammation of the kidneys. As it is commonly employed, a non-suppurative inflammation is implied." Rose³ says: "Nephritis is usually defined as an inflammation of the kidneys, although it may be admitted that many of the conditions included under this heading might be more correctly described as due to a toxic action on the renal element." Christian⁴ reflects a more modern conception and implies an acceptance of Rose Bradford's toxic theory of nephritis in his definition, which is, "Nephritis is a diffuse, progressive, degenerative or proliferative lesion, involving renal parenchyma, or interstitial tissue, or both." I believe we should now go a step further and say that acute nephritis is a general disease of a toxic nature which, as a rule, involves the kidneys, but does not necessarily do so. Franke⁵ describes acute nephritis without albuminuria or acute functional disturbances of the kidneys and without casts or albumen in urine associated with a soft painless rapidly progressing general edema and edema of the lungs without evidences of cardiac failure. The following case from my records may be considered also illustrative of this contention.

A woman, 22 years of age, in excellent general health, suffered an attack of acute follicular tonsillitis which lasted four or five days. Two weeks later she awakened one morning with general edema, more pronounced in the face and eyelids, and to a less extent the entire body. There was decided diminution in urinary excretion. The urine showed a specific gravity of 1026, no albumen, no casts. There were no retinal or cardiac

alterations; headache was very severe. She was treated as if she were suffering from acute nephritis by rest in bed and rigid milk diet. Diuresis was established the following day; specific gravity of the urine was 1010, no albumen, no casts. The third day there was a very faint trace of albumen, but no casts. The fourth and fifth days, a very faint trace of albumen and a few hyaline casts were present. By the eighth day, the urinary findings were entirely normal and the edema had entirely disappeared.

It is to be noted in this case that the kidneys did not show clinical evidence of disease at the height of her period of general edema. When first seen the history of very severe headaches, pronounced general acute edema, anuria and history of acute tonsillitis two weeks before presented the usual clinical picture of a moderately severe acute nephritis except that the urine showed no albumen or casts. It is difficult to conceive that the toxic symptoms of acute nephritis are due to the kidney lesion. However, a distinction must be made between the symptoms of acute nephritis, as in the general acceptance of the term, and the manifestations of uræmia. Such evidences of an intoxication in acute nephritis as headache, edema, retinal hemorrhage, may undoubtedly be considered to be due to some toxic substance, generally of bacterial origin, or due to poisoning by inorganic chemical substances, such as mercuric chloride. Uræmia is a fairly well defined entity, which is dependent upon a reduction of the functioning power of the kidneys. Uræmic symptoms associated with advanced destruction of kidney substance are very different from the symptoms marking an acute parenchymatous nephritis except where great involvement of the kidney tissue results in interference with renal function. The chief manifestation of acute nephritis is edema. If edema were due to failure of kidney function, then in all cases in which destruction of the kidney substance is present, edema should occur, which, however, is not the case. As is well known, if the kidneys of a dog are removed the animal dies of uræmia without edema. Patients die of chronic interstitial nephritis and of chronic diffuse nephritis without edema. An illustrative case is as follows:

J. A. C., male, 29 years old; on February 1 vomited several times and immediately thereafter suffered three severe uræmic convulsions followed by coma, recovering consciousness twelve hours later. As far as he knew, his health up to that day had been excellent. Between that time and April 28, he had had two vomiting spells and headache, but no other indications of ill-health. Upon examination, four months after his convulsions, he felt entirely well, but was passing three liters of urine a day, had lost twenty-seven pounds in weight. The urine was of low specific gravity, 1010; 0.4 per cent albumin, numerous hyaline casts and red blood corpuscles. There was pronounced anaemia—haemoglobin, 54 per cent, red cells, 3,220,000. His phthalein output was less than 5 per cent for two hours. There was hypertrophy of the left ventricle; blood pressure was 190 systolic, 100 diastolic.

(To be concluded in October.)

MANIFESTATIONS OF LESIONS IN THE POSTERIOR URETHRA.

By LOUIS CLIVE JACOBS, M. D., San Francisco.

Chronic urethritis, with prostatitis and the so-called sexual neuroses, are two important types of lesions, with symptoms referable to the posterior urethra. These patients are usually referred to the urologist. The so-called sexual neurotic type of patient is the one that deserves the greatest consideration. The majority complain of a tickling sensation at the end of the penis, a feeling of discomfort over the bladder, pain along the urethra, burning on urination, painful ejaculations, dull pain in the testes and shooting pains in some part of the sexual apparatus. There may be uncomfortable sensations, which the patient himself cannot analyze. Although they may have a healthy appearance, these patients undoubtedly are suffering mental anguish and attach great importance to their symptomatology.

These patients should be cystourethroscopied, because a majority of them show pathology in the posterior urethra, which is particularly amenable to the proper treatment.

The late improvements upon the electrically lighted urethral instruments have enabled us to make more satisfactory examinations than have been made heretofore. The most practical instrument for this work is the McCarthy Cystourethroscope, although it is occasionally necessary to resort to the late model Buerger urethroscope. These modern instruments have been the result of the growing interests that have manifested themselves in the last ten years to thoroughly investigate all urological cases, so that at the present day the technic has been so improved that we are enabled to diagnose and treat conditions that heretofore were neglected.

The embryological and histological development of the posterior urethra have been thoroughly studied, various sections of the urethra made and the close intimacy of the small urethral and sub-cervical glands have been recorded. Wherever glandular tissue be present we are apt to find pathological changes in these glands, which take the form of infections, cysts, polyp formations, hypertrophies, ulcerations, edemas and new growths. The verumontanum, which is an important factor in all these chronic infections, is essentially a glandular structure, which is present at all ages. A verumontanitis is often associated with a chronic prostatitis, and vesiculitis, and an examination shows infiltrations of the mucosa of the posterior urethra, with gaping ducts of the follicles present in this area. It is, therefore, evident that the only means of making a correct pathological diagnosis is by use of the cystourethroscope.

The therapeutic results obtained in the majority of these cases by the utilization of the fulgurating current are very satisfactory. Fulguration, which has given such beneficial results in many lesions at the neck of the bladder, has remedied the pathology and symptomatology found in these cases.

A perusal of the literature shows some very good articles, with reports of case histories, in the various urological journals; but the majority of the textbooks give this subject scant consideration.

In the examination of both my office and hospital cases a record of the posterior urethra has been made with pencil sketches, and in order to perpetuate these interesting pathological pictures I have transferred them by means of modeling compound to permanent models. These wax models are duplications of the actual lesions as they appear to the cystoscopic eye.

Following are the case histories and plates of the models of these cases (of twelve patients), which are typical and illustrative of posterior urethral pathology:

Model No. 1, Mr. H. L., age 19; no venereal history; denies ever having had sexual intercourse, but gives a history of excessive masturbation, which is the probable etiological factor; complains of nocturnal emissions every night. Examination shows a hypertrophy of the colliculus, with two ridges extending into the urethra. The utricle is located to one side of the verumontanum. This patient was twice fulgurated. On examination six months later, the urethra was normal and the symptomatology had disappeared.

Model No. 2, Mr. S. H., age 65, for the past six months had frequency, hematuria, loss of weight and cachexia. Urine on examination was cloudy, containing pus and blood. Cystoscopic picture showed a carcinoma in the bladder of the infiltrating type, with a metastasis in the posterior urethra. The growth was cauliflower in type, with a spreading base. The mucosa was highly congested and showed necrotic areas. The patient became bedridden and died several months later with a general carcinomatosis.

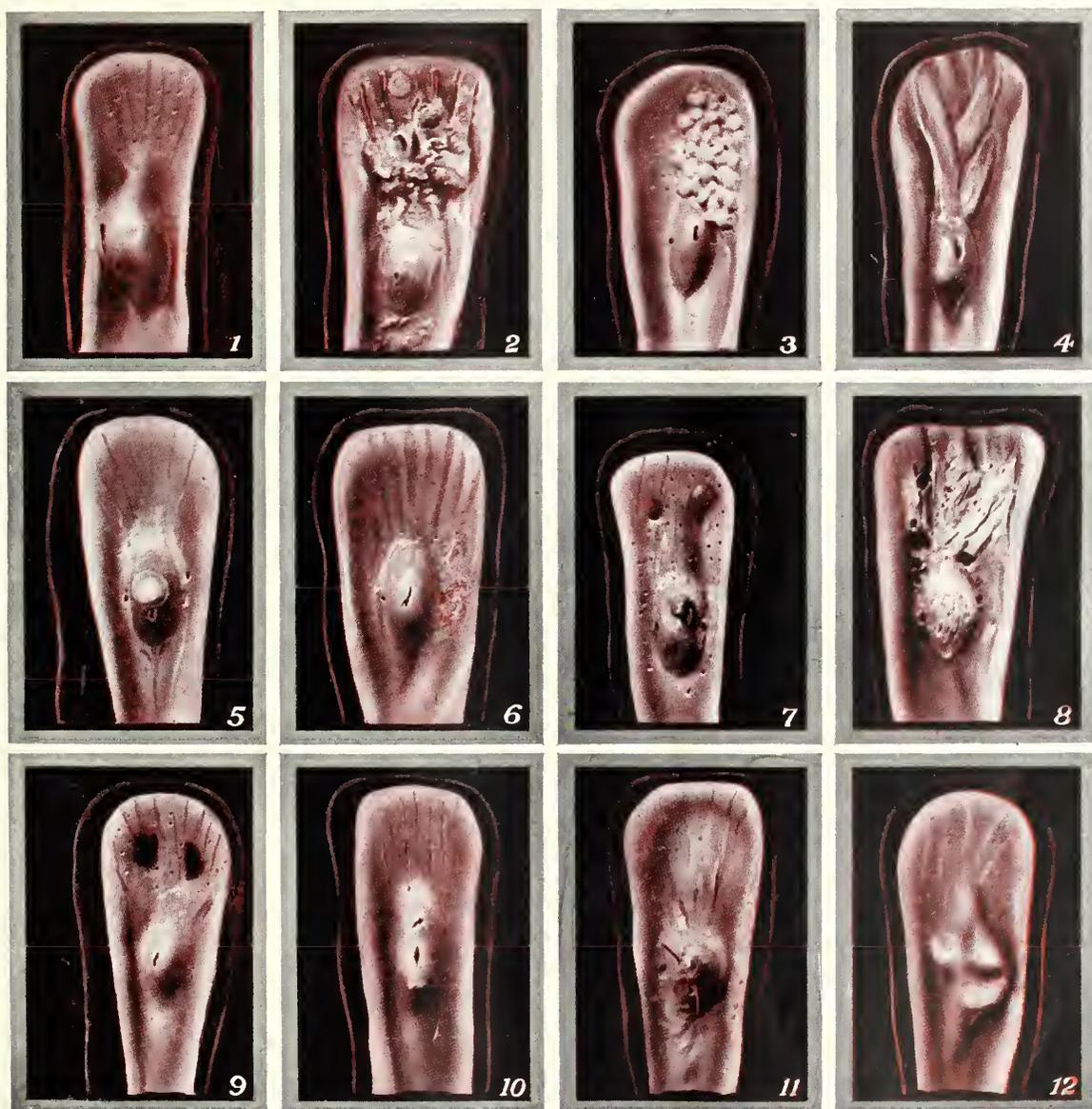
Model No. 3, Mr. H. R., age 32, had a urethral discharge for a number of months. The Wassermann was negative and smears were negative for gonococci. Prostatic secretion showed 5 — 6 pus cells to the field. Cystoscopic examination showed prominent ejaculatory orifices. There were a large number of cystic bodies, located on the wall, on one side the roof and floor of the posterior urethra. When fulgurated these cystic bodies "popped," the noise of which was quite audible to the patient. One fulguration failed to destroy all of the bodies, but they spontaneously disappeared. Re-examination several weeks later failed to show any of them. However, I continued to use the Kollman dilator, with excellent therapeutic results.

Model No. 4, Mr. F. B., was a man of over 50 years of age. He complained of some incontinence, particularly during the day. He denied gonorrhoea and lues; but the Wassermann was positive. The sphincter of the bladder was relaxed so that a sound passed very easily. Cystoscopically there were trabeculations on the upper bladder wall, with a relaxed sphincteric outlet, and a bulging in the median line. The posterior urethra showed thickened muscle bands with a prominent verumontanum.

Model No. 5, Mr. M. L., age 44, complained of burning at the end of urination. There was no frequency and no urethral discharge. He admitted having had a Neisserian infection when a boy, but denied lues. The Wassermann was negative. In the first and second glass test, the urines were clear. No stricture was detected with a F. 26 olive tipped bougie, and a F. 26 sound passed easily into the bladder. The prostate was not enlarged and not indurated. The vesicles on palpation were normal. Prostatic secretion showed a few pus cells to the field. Endoscopy was negative. Cystourethroscopy revealed a large cyst

ORIGINAL WAX MODELS

By LOUIS CLIVE JACOBS, M. D.



ILLUSTRATING LESIONS OF POSTERIOR URETHRA



located on the summit of a large and highly congested verumontanum. This I fulgurated and could hear a "pop" similar to that in the previous history. I lost track of this patient and do not know whether the removal of the cyst and the further fulguration of the verumontanum cured the symptomatology.

Model No. 6, Mr. C. L., was a young man with pulmonary tuberculosis. He complained of a tender swelling in the left testicle, which was about as large as a tennis ball in size. He denied venereal infection, and the Wassermann was negative. Cystourethroscopic examination revealed an ulcer of the T. B. type surrounding the left ejaculatory orifice.

Model No. 7, Mr. H. J., complained of sexual weakness, with extreme fatigue after attempted intercourse and some burning on urination. There was no evidence of venereal infection either from the history or the examination. Examination showed a papilloma, a polyp, an old abscess cavity and marked striations in the post montem space.

Model No. 8, was a sufferer from chronic gonorrhea and had been treated by sounds and other instrumentations. Examination showed a large number of trabeculations and scalloping of the floor of the urethra. The prostatic sinuses were well dilated. Desquamated epithelium was to be seen and a flocculent membrane was clinging to the ducts. Most of the picture I consider due to injudicious treatment; and improved most decidedly upon fulguration.

Model No. 9, shows a diverticulum of a posterior urethra. I saw this case cystoscopically on two different occasions. A double cavity, of an inter-connecting type was present in the posterior urethra. A catheter was passed into the cavity, but it did not penetrate any great distance.

Model No. 10, shows a verumontanum that had evidently been previously treated with strong applications of silver nitrate or other irritants. The upper surface seems to be detached and raised above the balance of the tissue. It is of a lighter color and the fulgurating wire passed between it and the surrounding tissues.

Model No. 11, shows a foreign body imbedded on a hypertrophied portion of the verumontanum.

Model No. 12, is that of a large broad verumontanum, with prominent anterior and posterior ridges. The tissues form three projections, which bulge into the posterior urethra. These projections were more or less cystic and readily responded to fulguration.

CONCLUSIONS

(1) Most of the cases with a chronic genito-urinary symptomatology, which previously have been classed as neuroses, have definite pathological findings in the posterior urethra.

(2) All such cases should be cystourethroscopied.

(3) The faithful use of the cystourethroscope not only reveals the pathology, but indicates the most successful method of treatment.

(4) Wax models of the posterior urethral pathology visualize the conditions involved and improve our technic.

(5) These cases receive the most benefit from fulguration.

FURTHER STUDIES ON THE NATURE OF FEVER*

By E. C. SCHMITT, M. D., and W. D. SANSUM, M. D.
From The Potter Metabolic Clinic of the Santa Barbara Cottage Hospital, Santa Barbara, Calif.

The purpose of this paper is to present additional experimental evidence in support of the

physicochemical theory that in the ordinary febrile diseases such as pneumonia, typhoid, tuberculosis and others, the symptom, fever, is due to a deficit of free water in the body resulting from an abnormal tendency on the part of the colloids of the body to bind water. This theory was advanced by Balcar, Sansum and Woodyatt following a series of experiments with sugar and salt fevers. They found that fever could be made to come and go at will by the alternate, intravenous administration of strong sugar solutions, and water. They reported that fevers as high as 111° to 115° F. could be produced by this method and in one instance the fever rose to 125.6° F. This is the highest animal temperature on record.

They produced the same type of high fevers by the intravenous administration of strong salt-solutions, thus proving that such fevers were not due to an abnormally high combustion of glucose. The same types of fever were produced in poikilothermic dogs in a similar manner, thus eliminating the influence of the hypothetical, heat-regulatory center in the brain. In these experiments the free water was removed from the body in varying degrees by the dehydrating effect of the sugar and salt solutions. From these experiments and the clinical evidence that there is an abnormal binding of water in the ordinary febrile diseases it appeared that the same fundamental principle was involved, and that such fevers should be materially influenced by the copious administration of water. This proved to be the case.

Severe pneumonia cases, and numerous influenza cases through two severe epidemics were treated by the copious administration of water. Sufficient water was used to keep the urine constantly straw-colored and of low specific gravity. This frequently required eight litres of fluid per day. Excellent clinical results followed. In these two series of influenza cases the author had no deaths. When the cases were seen at the onset, the fever never became alarmingly high and rarely lasted longer than 24 to 36 hours. The periods of convalescence were short. In cases seen some time after onset with high fever, 105° to 106° F., and usually a bronchopneumonia, such fevers were reduced in the course of a few hours to safer levels ranging from 99° to 102° F. and maintained at such levels without difficulty throughout the course of the disease.

The discussions which arose following the reporting of this work centered about the acceptance of this proposed physicochemical theory of fever, as opposed to the accepted heat center theories. Barbour says, "Without the brain there is apparently no infectious fever, and unless the water loss from the blood be extreme, as in Woodyatt's sugar dehydration, the nervous mechanism is undoubtedly involved in the production of fever." In the same article, however, he says, "The recognition of water as the central factor in the regulation of body heat may lend coherence to the following review of some of the many-sided investigations of the past decade." It was generally agreed, that, in so far as the experimental sugar and salt fevers were concerned, this physicochemical theory was acceptable but that further

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

experimental work should be undertaken to ascertain whether all clinical fevers should be explained on this basis.

A search was therefore made for substances that would produce a fever simulating as closely as possible the clinical types. After unsuccessful attempts with egg white and diphtheria toxin it was found that three hourly 1 cc. intravenous injections of commercial typhoid-paratyphoid vaccine would universally produce from three to four degrees of fever. Poikilothermic dogs were prepared as previously described, i. e., the dog was narcotized with ether and the spinal cord severed between the sixth and seventh cervical vertebrae. Immediately following the operation, the animal was swathed in cotton. This covering was then adjusted to establish a balance between the heat produced and the heat lost. Under such conditions the temperature can be made to remain constant for hours. In the most conclusive experiments the temperature was maintained as nearly normal as possible, so that a rise of three degrees would amount to true fever rather than a simple rise of temperature. When an even plateau of temperature had been established three hourly 1 cc. doses of typhoid-paratyphoid vaccine were given intravenously. In all of the experiments of this series, the temperature rose as it did in the sugar and salt fevers produced in poikilothermic dogs.

EXPERIMENT NO. I. CHART NO. I.

Large female collie, weight 16.6 Kg. The vaginal temperature at 10 a. m. was 102.6° F. The dog was narcotized with ether and the spinal cord severed between the sixth and seventh cervical vertebrae. The wound was closed with drain and linen sutures. The animal was swathed to the extent of approximately three-fourths of the body surface in a two-inch layer of cotton. The temperature gradually fell in the course of the next three hours to 99° F. Additional covering was added and the temperature rose in the next two hours to 100.2°, where it remained practically constant for the next four hours with no further changes in the extent of the covering. The variation was 0.4°. Three hourly 1 cc. doses of typhoid-paratyphoid vaccine were given intravenously. In the course of five hours the temperature rose to 102.8° F., a rise of 2.6° F. During the whole experiment the dog was very quiet. At 10:50 p. m. the dog developed irregular breathing and died at 11:05, five minutes after the taking of the last recorded temperature, with a very slight tonic convulsion. In this experiment the rise in temperature following the administration of the vaccine was 2.6° F., but the final temperature was but 0.2° F. above the initial temperature. In subsequent experiments the temperature was not permitted to drop so low. This was accomplished by shortening the time of operation and having ready a previously prepared cotton jacket.

EXPERIMENT NO. II. CHART NO. II.

Young female collie, weight about 10 Kg. The same general procedure was followed as described above. The vaginal temperature before operation was 102° F. It fell after operation to 100.2° but rose to approximately 101°, where it remained

constant for the next hour. Variation 0.3° F. Three 1 cc. intravenous doses of typhoid-paratyphoid vaccine were given as before. In the course of four hours the temperature rose to 104.3° F., a rise of 3° F. During the next three hours this temperature declined to 102.2°. In this experiment the plateau of constant temperature was not maintained for as long a period as in the previous experiment.

EXPERIMENT NO. III. CHART NO. III.

Small female terrier, weight 8 kg. The same general procedure was followed as described above. The original temperature was 102.5° F. Following section of the cord it fell to 101.3° F. and rose to 102.1° F. when the animal was swathed in cotton. The temperature remained at approximately this level for the next four hours. Variation .2° F. Three hourly doses of .1 cc. per kg. typhoid-paratyphoid vaccine were given and the temperature rose to 106° F. and then gradually declined.

EXPERIMENT NO. IV. CHART NO. IV.

Small female mongrel, weight 9.5 kg. This experiment differed from the previous ones only in that the dog was covered with the cotton jacket before the cord was severed. This successfully prevented any initial fall in temperature. There was a slight rise which necessitated the removal of a small portion of the covering. No other adjustments were made in the covering throughout the experiment. The initial temperature and that of the plateau was 101.8° F. Following the administration of the vaccine it rose to 105.4° F. and then gradually declined.

DISCUSSION

There are two theories of solution, the physical and the chemical. The physical theory of solution holds that substances like sugar or salt, when dissolved in water, form homogenous mixtures. The chemical theory of solution holds that such substances form hydrates with the water and thus bind it more or less firmly, depending upon the concentration of the substances in solution. Such water may be said to be "bound" as opposed to the term "free" water, the best example of which would be distilled water. It is in this sense that we have used the terms bound and free in these discussions of fever.

In the sugar and salt fevers these substances hydrate themselves at the expense of the free water of the body and either actually remove it from the body by diuresis or bind it within the body. In the ordinary febrile disease we have held that the poison of the diseases leads to changes in the cell colloids that increase their hydration capacities so that they tend to take up and bind more water. This may be due to changes in the oxidative processes preventing the oxidation going completely to the respirable carbon dioxide stage. We have assumed that an acidosis exists during the course of the fever, and this increase of hydrogen ion concentration of the tissues is the cause of their increased hydration capacities.

Whether or not this is the true explanation, we do know that there is an abnormal binding of water in febrile diseases. In a typical case of pneumonia for example the patient complains of thirst. The urine is scanty in amount and of high specific gravity. The patient rapidly gains weight. There is little or no visible perspiration. When the crisis comes the thirst disappears. Many litres of straw-colored urine are passed. The patient sweats profusely and the weight falls rapidly.

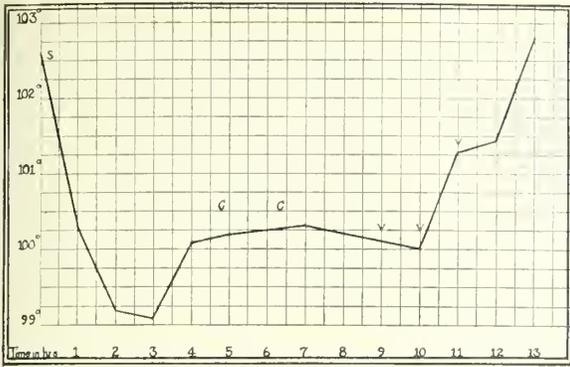


CHART No. I.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. C—Covering adjusted. V—Vaccine given intravenously.



CHART No. IV.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. C—Covering adjusted. V—Vaccine given intravenously.

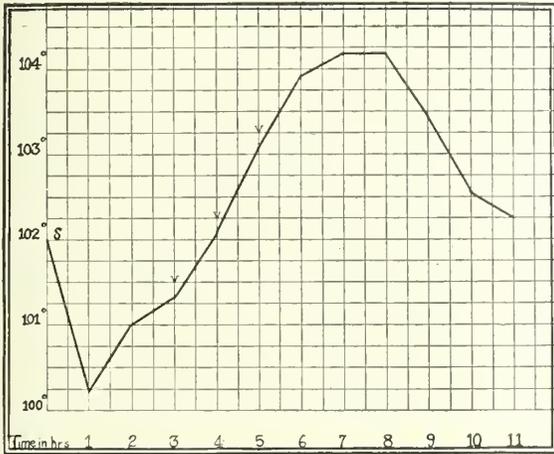


CHART No. II.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. V—Vaccine given intravenously.

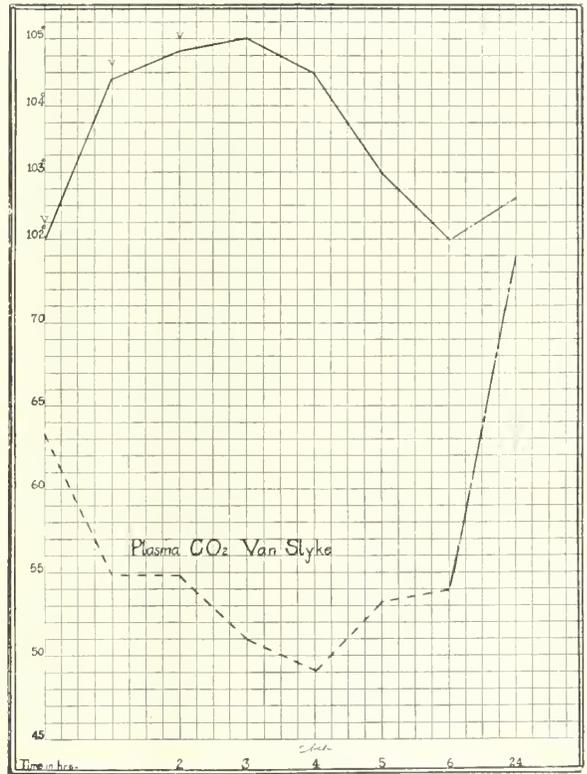


CHART No. V.

The acidosis of vaccine fever. V—Vaccine given intravenously.



CHART No. III.

Vaccine fever in a poikilothermic dog by the intravenous administration of commercial typhoid-paratyphoid vaccine. S—Severance of the cord. C—Covering adjusted. V—Vaccine given intravenously.

Barr and du Bois have studied a number of cases of Malaria in the Calorimeter. This study included the elimination of water. They state that ordinarily in afebrile conditions, the heat lost in evaporation of water constitutes about one-quarter of the heat eliminated; that it would appear, that there is in fever a disturbance in the power of the body to eliminate heat. They quote Ott's work in

which he found, that during the falling temperature in Malaria, there is a great increase in heat elimination and in the elimination of water without marked change in the heat production. They state, that in their observations on Malaria, a comparison of the heat of vaporization with the heat production gives variations of 10 to 45 per cent and, that a comparison of the heat of vaporization with the heat eliminated shows variations within the narrower limits of 23 to 36 per cent. These clinical and experimental observations on the binding and elimination of water during fever are easily explained with this physicochemical theory of fever.

The presence or absence of an acidosis during fever may be easily determined experimentally by

the Van Slyke method for determining the carbon dioxide capacity of the blood serum. It was found that three hourly doses of .1 cc. per kilogram of body weight of the typhoid-paratyphoid vaccine used in the former experiments produced a fever of three or more degrees in rabbits. Three such hourly doses of this vaccine were given to rabbits and hourly determinations of the carbon dioxide capacity of the blood plasma made.

In the first experiment the temperature rose from 102.2° F. to 106.2° F. in the course of three hours, and returned to 101° F. in the next four hours. The blood plasma binding power fell from 51.3 to 22.6 volumes per cent during the first four hours and rose to 35.4 volumes per cent at the close of the experiment.

CHART NO. V

In the second experiment, performed in a similar manner, the temperature rose from 102° F. to 105° F. in the first three hours and fell to 102° F. during the next three hours. The carbon dioxide binding power of the blood plasma fell from 63.3 to 49.2 volumes per cent during the first four hours and rose to 59.9 during the next two hours. On the following morning the temperature was 102.6° F. and the carbon dioxide binding power of the blood plasma was 73.9 volumes per cent.

Similar clinical observations on the alkali reserve have been made by Hachen and Isaacs in an epidemic of influenza and bronchopneumonia. They found that the alkali reserve as determined by the Van Slyke method falls as the temperature rises and returns toward normal when the temperature returns to normal.

Similar observations on the alkali reserve were made by Hirsch in a series of experimental infections in rabbits. The most virulent organisms produced the lowest alkali reserves.

Grulee and Boner recently described two cases of peculiar fever in infants. These infants were typical cases of malnutrition. The fever occurred during the periods of vomiting and while a thickened paste was given and disappeared either when fluids were given or when a liquid diet was resumed. In conclusion they say: "There occurs in infants who have been depleted by vomiting or rumination following the use of thickened paste feeding, a temperature curve which can most easily be explained on the basis of dehydration, though it is not possible absolutely to rule out absorption of bacteria as the cause, either total or partial, of this temperature. This temperature is unaccompanied by toxic or gastro-intestinal symptoms and there is evidence of a reduction in the water content of the blood during the febrile period."

It should be borne in mind that this study is on the nature of fever and not on the regulation of body temperature. We believe, however, that in the regulation of body temperature water must play a very important role.

Whether or not it would be advisable to attempt to reduce all temperatures to as low levels as possible, if it proves that this can be done, is another phase of the question which needs experimental verification. It has been argued that high fevers are protective and perhaps bactericidal in their action but no experimental

evidence has been offered. The instructions followed in the inoculation of the various types of agar agar media with suspected pathogenic material call for a cooling of this media to 45° to 40° C. which corresponds to 113° to 104° F. and these temperatures are not bactericidal. It is also argued that a temperature sufficiently high to kill pathogenic bacteria would also kill the cells of the body. In our clinical experience thus far with the elimination of or reduction of fevers in febrile diseases to safer levels, the complications have been less, the mortality lower, and the periods of convalescence shorter.

We realize that vaccine fevers are not identical with infectious fevers and that infectious fevers have not as yet been produced in poikilothermic animals, but see no reason why such fevers could not be produced provided the proper precautions were made to prevent too great a fall of body temperature in such animals. A study of this phase of the problem is now being undertaken.

CONCLUSIONS

These experiments show that experimental fevers closely simulating clinical fevers may be produced in poikilothermic dogs by the intravenous administration of typhoid-paratyphoid vaccine, thus eliminating in such fevers the influence of the central nervous system.

These experiments show that acidosis as determined by the Van Slyke method begins and increases with the increase of fever and decreases with the fall of fever.

These experiments furnish additional proof in support of the physicochemical theory that in the ordinary febrile diseases the symptom fever is due to a deficit of free water in the body resulting from an abnormal tendency on the part of the colloids of the body to bind water.

Bibliography

- Balcar, J. O., Sansum, W. D., Woodyatt, R. T., Fever and the Water Reserve of the Body. *The Archives Int. Med.*, 1919, 24, 116.
 Barbour, Henry G., *Physiological Reviews*, 1921, 1, 295.
 Barr, D. P., and du Bois, E. F.; *Archives of Int. Med.*, 1918, 21, 627.
 Ott, I., *Fever Thermotaxis and Metabolism*. New York, 1914.
 Hachen, D. S., and Isaacs, R., *Journal A. M. A.*, The Alkali Reserve in Epidemic Influenza and Bronchopneumonia, 1920, 57, 1624.
 Hirsch, Edwin F., *Jour. Infect. Dis.*, 1921, 28, 275.
 Grulee, C. G., and Boner, B. E., *Am. Jour. of Dis. Children*, 1921, 21, 220.

BIOLOGICAL FACTS ABOUT BENZYL BENZOATE THERAPY*

By LUDWIG A. EMGE, S. B., M. D., San Francisco.

From the Division of Obstetrics and Gynecology, Stanford University School of Medicine, San Francisco, California.

Notwithstanding the fact that benzyl benzoate has reached an unheard of popularity in our profession, and notwithstanding that it was accepted so unconditionally in this age of medical skepticism, one cannot help feeling that too little is known about this drug, aside from what we have been told by a few investigators, whose experiments concern themselves mainly with one physiological aspect, but whose end-results are contradictory. We do not know for sure to what factor benzyl benzoate owes its action, though

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Macht advanced a feasible hypothesis. Neither do we know how this substance is broken down in the human body, and we are still in the dark about its split and endproducts except for hippuric acid, which has been recovered in the urine. There must be other split products which might exert a harmful effect on the human machine under certain conditions before they are excreted. It seems that the enthusiasm of the man who introduced this substance completely diverted the medical mind from any dangers that might result from its thoughtless employment, and still there is no drug that does not bear watching. Benzyl benzoate therapy of today is rapidly drifting into empiricism, and if not saved by careful experimental and clinical observation it will soon fall into disrepute, although this substance may well have a place in modern therapeutics.

Let me briefly review the life history of benzyl benzoate as far as we are interested in it from the medical point of view. This substance has been used in the arts for many years, and its chemistry is well known. Time does not allow me to go into this phase except for the mere mention that it is an ester of a highly volatile structure which is easily oxidized, and for this reason unstable. It is soluble in alcohol among other substances, but not in water. Its relation to the benzoates and benzene is apparent from its name. The physiological action of both of these families is well known, though benzyl benzoate as such does not act like either one. Macht pointed out that the physiological action of benzyl benzoate is similar to that of papaverin, in other words that it belongs to the "anti-spasmodics," having an inhibitory effect on smooth muscle fibers. In the papaverin group, this faculty apparently depends upon the presence of a benzyl group, which is attached to an isoquinolin nucleus, since the separation of this group from its nucleus results in a loss of its anti-spasmodic faculty. Therefore, Macht thought that the inhibitory effect of benzyl benzoate was due to the presence of a similar benzyl group.

Macht's experiments led him to believe that the action of this drug was so generalized in its behavior that it would cope with almost any of the spastic disturbances of the involuntary muscle fibers of the animal body. In this he included all of the colics of the various organs, the lowering of the bloodpressure, and such conditions as bronchial spasms. He found that the bloodpressure was lowered by peripheral vaso-dilatation with only a negligible effect on the vaso-motor center. He concluded that the heart was not disturbed, and that respiration was only affected if very large doses were given, when the respiratory center would become paralyzed. Death of his laboratory animals was universally due to this fact. Still he did not lay special stress on this point, because the dose required to produce such a state was so much greater than that used in man. Macht realized, though, that certain animals can resist greater amounts of this drug than others. For instance, herbivorous animals will fare better than carnivorous animals, because the former have the faculty to metabolize benzyl compounds much

more rapidly, converting them into hippuric acid. Most of our experimental work of today is done on rabbits, and since they have this faculty, we must be careful in our conclusions as to dosage for man, and not consider ourselves safe when we use proportionately smaller doses. Up to now we have not learned yet what must be considered a large dose for man. It was the wide margin between the experimental and therapeutic dose that led Macht to state that benzyl benzoate was non-toxic for man. That such a reasoning does not always stand on firm ground was shown by the benzol investigations of various observers, who demonstrated that rabbits could be given large non-fatal doses in proportion to their weight, though man was found to be very much more susceptible to doses proportionately much smaller.

Macht's study remained unchallenged until November of last year, when Mason and Pieck described their findings in benzyl benzoate experimentations with dogs. These investigators found that in dogs it would take very much larger doses than previously reported to obtain anti-spasmodic effects. In fact, if they succeeded at all in relieving such conditions as an artificially produced pyloro-spasm, the animal would die from respiratory paralysis. Mason and Pieck were doubtful as to the anti-spasmodic action in the intestine, spleen, kidney and uterus, because such very large doses were needed to obtain only a slight relaxation of the smooth musculature. Their failure to demonstrate bronchial dilatation, even after very large doses, is quite significant. Mason and Pieck were impressed with the marked depressing effect on the respiratory center as well as the marked fall in blood pressure. It is interesting that they noted a weakening action on the myocardium, which Macht had denied. This is well in line with some of our clinical observations. The contradictory findings sound the first warning to us, and until more evidence will be forthcoming, it will be well worth while to take into consideration Mason's and Pieck's findings, and not venture into giving large doses.

Until very recently, nothing had appeared in the literature on the effect of benzyl benzoate on the blood-forming mechanism and on the antibody formation. My attention was called to this phase soon after the introduction of benzyl benzoate, when I began to use it in carefully selected cases of spasmodic dysmenorrhœa. The results were variable, and really spasmodic dysmenorrhœas were rare. Therefore, I could not come to any definite opinion. Various preparations were used, and found to vary distinctly in their potency. Twenty per cent alcoholic solutions were found to deteriorate rapidly, and for this reason the pure substance was given in hermetically closed capsules. Ten minim doses were used three times a day, for a period of approximately eight to ten days overlapping the menstrual period. Late in 1919, while treating this type of dysmenorrhœa, I observed in two young women the recurrence of an appendicitis, which had been dormant for many years, and which I had considered a mere historical fact. Although, these experiences with two patients fell within a short time of each

other, the matter of appendicitis and benzyl benzoate therapy was then considered a coincidence in spite of the blood-count, which in both of these patients bordered on a leucopenia, contrary to what we usually see in a "flare up" of an old appendicitis. When within a few weeks a colleague reported a similar observation with the same blood findings, my curiosity was aroused, and it was decided to study the possible relation of benzyl benzoate in this matter.

On account of the unusual blood-picture, we naturally thought that benzyl benzoate might act somewhat like benzol, which is a known leucotoxin, and which lowers the defenses of the body by depressing the antibody formation. With the help of Mr. Jensen, one of our seniors, I undertook to study the relation of benzyl benzoate to the blood picture. We used rabbits, taking into consideration the unstable blood-picture of this animal. Each rabbit was carefully studied for several days until we had established sufficiently stationary base lines for the white blood cells. The detailed results of this study will appear shortly in the *Journal of Pharmacology*. I have prepared the following lantern-slides from the original charts, which are self-explanatory.

1. A daily dose similar in size to that used in man will cause first a steady leucocytosis, which tends to change into a mild leucopenia. This is accompanied by a relative increase in polymorphonuclear cells. If the dose is doubled, the whole phenomenon is shortened.

2. If one large dose is given, there occurs a diphasic curve, in which the rises are marked by a sharp increase in small lymphocytic cells. This animal developed snuffles after a few days, and as soon as this had subsided symptomatically, a double dose was given. The result was a sharp rise in leucocytes with a very high increase in lymphocytes, with a violent recurrence of snuffles. The recurrence of the snuffles immediately after the benzyl benzoate administration is very significant.

3. If a very large dose was given, the leucocytes failed to rise, but there occurred a leucopenia somewhat similar to that described for benzol.

4. If one would allow snuffles to subside until the blood-count had become stationary, and one would give then a large dose, snuffles would recur and be accompanied by terrific rises in leucocytes, in which the polymorphonuclear cells would be predominant. After each repeated dose the rise in leucocytes would be accompanied by a greater outbreak in snuffles with lymphocytes rising steadily until they outnumbered the polymorphs.

5. If one would take an animal, which had symptomatically recovered from snuffles, and give daily increasing doses of benzyl benzoate, beginning with a very small dose, snuffles would return and become more severe each day until the animal was overcome by the disease. The gradual rise in lymphocytes until near death, when the polymorphs predominated, is present here also.

6. That the manner in which the drug was given did not influence the blood-picture, was proven by giving to one animal the substance in

oil by stomach tube; to another, an equal dose in alcohol in the same way; and to a third, the same dose by subcutaneous injection.

From these results we concluded that benzyl benzoate has a definite influence on the composition of the blood-picture in the rabbit, which finding should be of sufficient value to investigate man from a similar point of view. We also provisionally accepted that the administration of benzyl benzoate to rabbits would favor the recrudescence of latent or quiescent infections. In other words, that it had a tendency to interfere with antibody formation.

With this latter fact in mind, Miss Leonard and I set to work to collect data regarding the actual influence of this drug on antibody formation. We chose the rabbit for the sake of comparison, and decided to use the hemolytic antibody for our working basis. Rabbits again were carefully selected and observed. We then immunized them with goat's blood, by intravenous injections at short intervals. The following lantern-slides will give some of our results clearly.

1. A very small dose of benzyl benzoate given several days before the period of immunization has very little effect on the production of antibodies, especially if the animal is allowed to rest every seventh day. This dose, though being in actual proportion to that used in man, is really insignificant to the rabbit, which can metabolize these compounds so very readily.

2. If the animal is immunized first, and the antibody formation is allowed to become very active, and then a small dose is administered daily, the antibody curve is at once depressed and ends abruptly, sooner than normal.

3. If immunization and benzyl benzoate administration are begun simultaneously, the antibody curve fails to rise to any height, and falls slowly to a low, insignificant level, which also disappears in a shorter time than normal.

4. If one begins to give large doses simultaneously with the beginning of immunization, the antibody curve is not only depressed but latent, and perhaps shortened. One might object to the large dose used in the latter experiment, but considering the faculty of the rabbit to break down benzyl compounds so easily, the dosage is not so very excessive. From further experiments we have received the impression that benzyl benzoate in itself acts more likely qualitative than quantitative in effecting antibody formation.

From this phase of our investigation we permit ourselves to assume that benzyl benzoate has a depressing influence on the formation of hemolysins in rabbits. Coupling this finding to our previous observation, we think it justified to say that this substance has a depressing influence on other antibody formations in the rabbit. As far as the rabbit is concerned this would satisfactorily explain the recurrence of latent infections during prolonged benzyl benzoate administration.

For several months we have made observations on the influence of benzyl benzoate on the blood-picture in women, and we have collected some fifty or more cases. The results are so variable, and there are so many extraneous factors to be

considered, that a definite opinion cannot be given until more material has been collected. We are under the impression that very small doses, such as five minim three times a day for a few days, have no other effect than to raise the lymphocytes slightly. In ten minim doses, three times a day over a similar period, we have seen repeatedly mild leucocytoses followed by a drop below the normal, with the same shifting in the differential count as observed in smaller doses. We have not seen any justification for using larger doses and, therefore, refrain from an opinion at this time. So far, we have not been able to find any changes in blood pressures when these small doses are used, but our observations have been confined to primarily normal pressures, and those raised by some toxic influence caused by pregnancies.

In regard to the breaking down of benzyl benzoate, we have not been able to demonstrate, to our satisfaction, that phenol is a factor, although we surmised it. It was this substance which was found as the end-product of benzol, and which we thought might also be a factor in the breaking down of benzyl benzoate. Also this question we have to leave unanswered, but we are at work, and shall have something to say within a few months.

It has been a rather hurried review of known and new experimental facts I have outlined, and I do not wish to leave the impression, that because animal experimentation has brought out facts that seem to point toward some dangers in benzyl benzoate therapy that this substance is a hazardous drug for man in the amount that is used at the present time. Nevertheless, we have been confronted with a controversy as to its actual value as an anti-spasmodic when it is used in small doses. If larger doses will be needed in order to produce an anti-spasmodic action, we must consider the experimental proof that this substance paralyzes the respiratory center, lowers the blood pressure, weakens the myocardium, influences the blood-forming mechanism, and depresses antibody formation to a degree which allows latent infections to become active. Until further proof is forthcoming that these animal results are wrong, or that we do not have to fear such results in man, we must select our patients for benzyl benzoate therapy, with all these possibilities in mind, and keep our dosage within very narrow limits in order to avoid unforeseen disasters.

THE 1922 MEETING OF THE STATE SOCIETY

The fifty-first session of the State Society will be held in Yosemite National Park, Monday, Tuesday, Wednesday and Thursday, May 15 to 18, inclusive. The A. M. A. will be held during the corresponding days of the following week at St. Louis.

It will be feasible to attend the State meeting, leave Yosemite on Friday, and be in St. Louis for the A. M. A. without any loss of time.

Watch for the October Journal for news about the next convention.

THE PSYCHOPATHOLOGY OF SOMATIC DISEASE.*

By CHARLES LEWIS ALLEN, M. D., Los Angeles, California.

The duty of the physician when he takes charge of a case of illness is not so much to name and classify the disease from which the patient is suffering, as to estimate the probable reaction of the latter to the underlying pathological process and to modify this, if possible, if it is excessive or inadequate, guiding the sufferer to recovery.

Not the least important of the reactions of the organism is that on the part of the nervous system, particularly in its most complicated functions, which are manifested in what we call mind.

No one doubts today that the seat of these functions is chiefly in the cells of the brain cortex, the neurons.

The intimate connection of the brain with all other organs and the sensitiveness of its neurons to elevation of temperature, interference with blood supply and the presence in their nutrient media of substances deleterious, or directly poisonous, as well as to reflex influences, such as pain, makes it impossible for it to remain uninfluenced in disease of other organs, even the most remote. Conversely the relation is reciprocal, the mental state exerting a profound influence upon the body functions, accelerating, retarding or inhibiting. The mental attitude with which disease is faced has an important bearing upon its course.

The mental reaction to various situations is largely determined by the original constitution and the subsequent training of the nervous system; the more uncontrolled the mind, the less its ability to withstand stresses of any sort, among them that of somatic disease. We see this illustrated every day in the large class of ill-adjusted people, for the most conspicuous of whom the characterization "psychopathic personalities" is entirely justified.

Mercier long ago declared that insanity was due to two factors, heredity and stress. The same idea has been recently developed by Adler in his study of the inferiority of organs as a factor in disease and the possibility of its psychic compensation.

The Freudian school traces the psychic manifestations of the neuroses and minor psychoses to hidden or repressed complexes, usually of a sexual nature, while for Sidis the natural and necessary "fear instinct," when uncontrolled or perverted, is at the bottom of a vast train of morbid manifestations which we bring under the psychoneuroses. Now what fear is more powerful than the fear of death? Strong enough is the fear of suffering, of permanent illness, of financial loss, etc. Fortunate indeed is the physician, if he can preserve in the patient a calm and hopeful outlook throughout his disease.

Most striking is the difference in the disease picture in the mentally normal and in the chronic demented class of the insane. The latter, having no minds to react, suffer the most painful injuries and pass through the severest illnesses without

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

apparent distress, and survive, where the sound-minded would inevitably succumb. Of such importance is the mental reaction in somatic disease.

Any illness is liable to disturb to some extent the cerebral reactions, and we expect more or less irritability, querulousness and demand for unnecessary attentions, or on the other hand indifference and apathy, in all sick people.

While we have no exact standard of mental normality, we are forced to adopt a relative standard, and any considerable variation from this we consider abnormal.

For the proper course of the intellectual processes, mental clearness is necessary above everything else.

Clouding of consciousness is the result, not only of toxic substances introduced from without, but as confusion, stupor and coma is a feature in a large number of diseases. In only the mildest cases of typhoid fever does the patient maintain his mental clearness throughout, confusion, stupor and delirium from mild to furious being of frequent occurrence in this and other infectious diseases.

Hallucinations and illusions may occur exceptionally in healthy people. In unstable, psychopathic individuals, they may be brought out by nervous excitement, pain, fever and metabolic disturbances, very readily by poisons from without, notably alcohol, either alone or combined with the foregoing. They are very rare in people previously temperate and mentally sound.

A certain degree of depression, or more rarely excitement, would seem not unnatural in somatic disease. In our County Hospital material, affective disturbances reaching a pathological degree are very infrequent, being confined mainly to those previously psychopathic.

It is evident that education, social condition and racial influences have an important influence in this connection. In the home, influences which tend to disturb the emotional balance are difficult to eliminate, and this furnishes one of the strongest arguments for hospital care. In cases essentially mental, home treatment is rarely feasible. In private hospitals the patients are mainly of a more educated class, having a clearer realization of illness and its possible results; also the question of expense rises up as a specter to affright them. The less educated and especially the races other than the Caucasian, are inclined to fatalism, accepting things as they come. To them there is no alternative to the hospital, and since a great majority of them find there cleanliness, comfort and attention to which they are strangers, a rest under such surroundings is not always disagreeable, especially when, under the workmen's compensation laws, their financial needs are not neglected. Surgical asepsis and control of pain have removed an important source of unrest, but in the nervous and erethistic this must still be dealt with. Clouding of consciousness, disturbance of attention and inability to comprehend at the time, will be followed by gaps in the memory. Sometimes these are filled in by confabulation. Notably is this so in Korsakow's syndrome, which is seen

in the hospital as well as in the asylum, and is not solely a product of alcoholism.

Looking over our records, it is at once evident that actual mental derangement is rare except in patients either previously insane, or so strongly predisposed that the disturbing effect of the disease pushes them over the line. In the lesser variations, sex and especially age, play an important part. In general the women are more restless and dissatisfied, more exacting, and more prone to depression and anxious states. Home is the natural habitat of woman, and she bears separation from it badly. In elderly patients the vital organs, especially the heart and kidneys are, as a rule, more or less impaired in their function and cannot meet an extra strain. The most sensitive organ, the brain, suffers in consequence.

In the surgical wards there is considerable difference between aseptic and pus cases. In the latter the factors of toxemia and high temperature make for mental disturbance. In our County Hospital patients dread of a proposed operation rarely seems to cause mental upset. Recovery from the anesthetic is usually prompt and mental confusion lasting over twenty-four hours is rare, except in elderly people, whose elimination is presumably defective. In some of these a prolonged period of confusion or delirium has been observed.

Diseases of the sexual organs in both sexes are apt to be the starting point for hypochondriacal ideas, upon which successful operation has often a good effect. In genito-urinary patients the work of the kidneys is often deficient and on account of resulting uremia, psychic disturbance is more frequent in this department than elsewhere.

Fractures in old people are often the exciting cause of a general breakdown in which the mental element may be more prominent than the physical.

The cachexia of malignant growths leads sometimes to confusion and delirium or to excited or depressed states.

With the exceptions noted the organ affected does not seem to make much difference.

We have long ceased to talk of a specific puerperal insanity. In the majority of cases, the business of reproduction only brings to the front an underlying predisposition or speeds up an already existing psychosis. Minor pathological variations are infrequent in the previously healthy on our obstetric service.

In the medical wards, typhoid fever and pneumonia are the infectious diseases in which, above all others, confusional and delirious states are encountered. The eruptive fevers are seen mainly in children and of late years have been mild, with no mental symptoms.

In the tuberculous, the realization of disease is often imperfect and optimism prevalent. The "spes phthisica" has long been proverbial, but depression is seen, too. In the terminal stage, hallucinatory confusional conditions are observed from time to time.

That in the genesis of certain mental states the heart plays an important part is evidenced in our everyday language. Heartache and heartbreak are not mere figures of speech. Abnormal sen-

sations arising from the region of this organ upset self-control and mental balance as nothing else does. Our heart cases are universally reported as anxious, restless and hard to control. This is not always proportional to the lesion, since functional cases often show great distress, while the carrier of the most serious valvular lesion may go along unconcerned until he one day drops dead. Nevertheless a role cannot be denied to the suggestive effect of the universal knowledge of the dependence of life upon the work of the heart. We have seen a few cases of actual psychosis, either of the hallucinatory confusional or of the manic type, in which the heart lesion seemed a direct cause.

The frequent combination of cardiac disease with renal inadequacy furnishes an additional noxa. One of the most frequent causes of psychic disturbance is arteriosclerosis and cardio-renal disease. Among our elderly chronic patients it is the cause par excellence.

Sensations arising from the abdominal cavity are also disturbing, especially to the predisposed. Our predecessors recognized this when they applied the name "hypochondriac" to the morbid fancies, so much our bane.

Our cases of organic lesion seem less troubled than the functional cases. These latter are largely psychoneurotics, or at least their near relatives.

Mental disturbances, both major and minor, occur in the anemias. Those observed have been of the type of confusion, sometimes with delirious episodes, and have usually been terminal conditions.

Diabetes terminates naturally in coma, a period of mental confusion and unrest sometimes preceding this. I have also observed cases of the manic or depressive type which have cleared up under treatment of the constitutional disease.

No patients are more fretful, exacting and given to intraspection, and hypochondriacal ideas than those having diseases of the nervous system.

The so-called functional nervous diseases, the psychoneuroses, are intertwined with every branch of medical practice. The discussion of their psychopathology has reached a vehemence unsurpassed and its literature is too enormous to be more than mentioned.

Many of the views advanced appear fanciful and their acceptance involves great credulity, but out of it all there seem gradually to be emerging some ideas of value in the practice of medicine.

The relation of the psychoneuroses to the psychoses is of the closest, their separation often difficult, sometimes impossible.

No chapter of medicine is more fascinating and none needs more careful working out than that of the glands of internal secretion. We have long known that deficiency of the thyroid secretion is followed by mental dullness as well as by the body defects of myxoedema and cretinism, while the mental instability, the excitability and feverish activity of the hyperthyroid patient may easily pass into a true psychosis, usually of delirious or manic type. The action of the other endocrine glands upon the psyche, formerly hardly

suspected, is just beginning to be seriously studied.

Appreciation of the relation between these organs and the long neglected vegetative nervous system and the influence of this combination upon all the processes of the body is a very recent matter, though many of the facts upon which present views are based have been known empirically for generations. With the affective side of mental life their relation is peculiarly intimate, though as to whether the influence emanating from the neuro-glandular system initiates the emotion, or whether the emotion is the primary, and through the nervous system, sets the appropriate glands in action is still under discussion. While the James-Lange theory has been rejected by the majority of psychologists, the newer studies in vegetative neurology have brought forward some facts in support of it. Be this as it may, it is safe to say that there is interaction.

The work of Pavlov on the digestive glands and his demonstration of his "unconditioned" and "conditioned" reflexes, has served as a stimulus to a large number of researches upon the internal secretions. In his "Bodily Changes in Pain, Hunger, Fear and Rage," Cannon has shown to what extent the adrenal secretion is influenced by strong emotions. It appears to play the role of activator in situations requiring sudden and violent effort, and was found greatly increased in rage and fear, emotions which would naturally be followed by fight or flight. For Cannon the bodily changes are not the cause, but the result of the emotion.

The conditioning of the reflexes by circumstances associated with a strong affective tone has been utilized by Rows to explain such psychopathological manifestations as morbid fears and obsessions. Example: A soldier returned from the front could ride in any other vehicle, but showed the greatest terror when a trolley car came along. On questioning him, it was brought out that the noise made by the trolley wheel on the wire threw him into a panic because it reminded him of the sound made by an approaching shell, whose explosion had buried him and killed several of his companions.

The familiar influence of association and suggestion may well be explained on similar grounds and careful investigation of the genesis of the hypochondriacal ideas expressed by our patients, may open the way for a rational and fruitful psychotherapy.

The present tendency is to regard the intellectual functions as made up of reflexes of a higher and more complicated character, the brain being the co-ordinating center for all those reflexes which have to do with the great primal end of maintaining life and perpetuating it by reproduction, with its many divisions, beginning with procurement of food, escape from danger and the satisfaction of the sexual instinct, passing through multitudinous subdivisions, the more numerous the more complicated conditions of life become.

When it is realized by all physicians that the brain is but one organ of the body, although the most differentiated, that intellect is not a thing

apart and mind only a collective name for the series of conditioned reflexes which enable us to fulfill the primal instinct, even in the evermore complicated relations between man and man, the foundation will be laid for a better understanding of deviations from health, be their symptoms somatic or psychic.

CARDIAC IRREGULARITIES

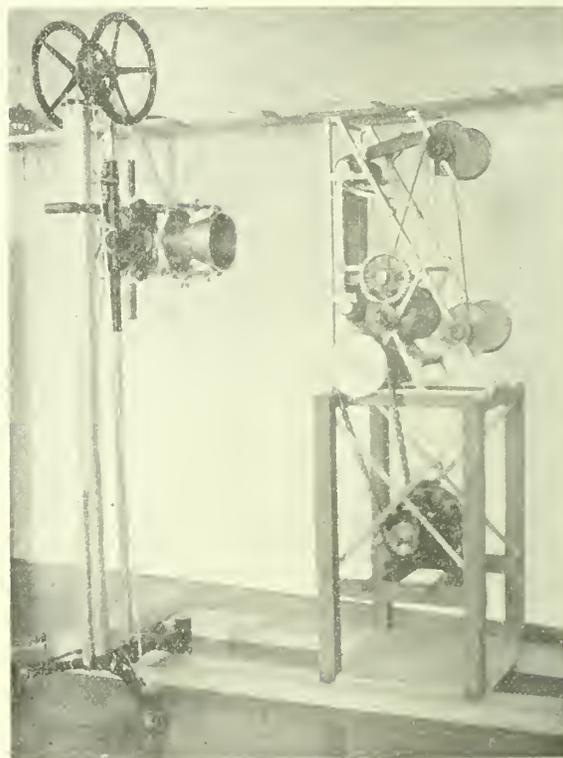
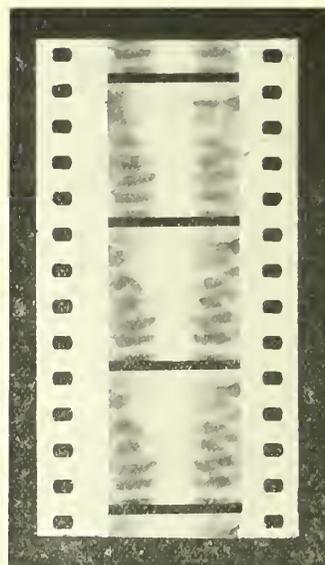
Illustration of Normal and Abnormal Mechanism of the Heart-Beat by Moving Pictures.

By WILLIAM J. KERR and H. E. RUGGLES, San Francisco, Cal.

The subject of irregularities of the heart remained more or less a mystery until graphic methods were introduced into experimental and clinical medicine. Since that time most of the irregularities have become well understood. It was formerly thought that variation in rhythm of the heart was due to damage by toxemia, or disease; but it is now definitely understood that one of the most common of the irregularities, the so-called "sinus arhythmia," which is usually of the respiratory type, occurs mainly in young children and less frequently in adults, is of no serious consequence and does not indicate disease of the heart. The lack of understanding of this irregularity by some clinicians has been the cause of more misgivings on the part of the physician and the family than any other cardiovascular condition, unless it be the misinterpretation of the importance of certain of the so-called "functional murmurs" of the heart.

Since the introduction of the polygraph and the electrocardiograph the ordinary, or common varieties of irregularities, have become so well understood and so definitely manifested clinically that they have become easy to recognize without the aid of these precise methods. It is, however, imperative that anyone who attempts to interpret the cardiac irregularities without such aid should be familiar with the mechanism of the irregularities, as has been shown, both experimentally and clinically, by instrumental means.

However, there is a small group of irregularities which are rather rare and infrequent where we must rely upon the polygraph and the electrocardiograph for exact interpretation. By these I mean such unusual conditions as nodal rhythm, ventricular escape, block in the conduction system of the ventricles, or defective conduction in the terminal branches of the conduction system; many of the unusual tachycardias, such as true paroxysmal tachycardia and some of the unusual auricular flutters and auricular fibrillations. It was with the purpose of clarifying, in a clinical way, some of the more unusual conditions, and at the same time of confirming what we already know about the more common ones, that we thought of the possibility of utilizing the principles of the X-ray and the cinematograph. One of us has devised a motor-driven machine by which very rapid exposures of a moving X-ray film could be obtained of the human heart. The cinematograph-röntgen negatives, which may be obtained at the rate of fifteen to the second, show distinct differences from those obtained by the usual X-ray plates of the heart. By transposing to the cinematograph



film the cardiac cycle, or as many cardiac cycles as are desired, and by interpolation of duplicate negatives, the whole process of cardiac contraction can be so delayed on the screen that the detailed movement of the chambers may be possible of demonstration.

We have selected for demonstration three patients from the service of Dr. W. P. Lucas, Professor of Pediatrics, University of California Medical School, because the size of the film which we used was particularly adapted to the smaller hearts. One of the patients is that of a normal heart of a child recovering from a mild respira-

tory infection. The second patient is a boy of fourteen, who has chronic endocarditis involving the mitral valve, with considerable enlargement, and showing evidence of a moderate degree of delay in the conduction time from the auricle to the ventricle; the conduction time being between 5/25 and 6/25 of a second. The third patient is a boy of thirteen, who has chronic endocarditis involving both the mitral and aortic valves, with adhesive pericarditis, as well.

It was our purpose to study a few cases of alternation of the pulse to see if this condition could be better understood in a clinical way. The theories as to the cause of alternation of the pulse are divergent. Some contend that the alternation is due to sustained systole of the ventricle and to improper diastole resulting therefrom. Others maintain that it is due to a difference of excitability of muscle tissue, due to disease localized or scattered diffusely through the muscle. We were, however, unable to obtain any well-marked instances of alternation of the pulse at the time when our pictures were taken, but it is our intention to further develop this study along such lines.

The films should be of considerable educational value in the teaching of cardiovascular disease, particularly with reference to the irregularities, when the method has been finally perfected.

California Association of Medical Social Workers

The organization of the medical social workers of California has been completed by the council, in conformity to the requirements of the resolution passed by the House of Delegates at the Coronado meeting. The officers of the association and the executive committee are as follows: President, Dr. Louise Morrow; Vice-President, Miss Eleanor Stockton; Secretary-Treasurer, Miss Edna J. Shipser. Executive Committee—Dr. Mary Harris, Dr. Louise Morrow, Miss Edna J. Shipser, Miss Clara Saunders, Miss Marguerite A. Wales, Miss Josephine Abraham, Miss Eleanor Stockton.

CALIFORNIA ASSOCIATION OF MEDICAL SOCIAL WORKERS' PREAMBLE AND CONSTITUTION

PREAMBLE

For all the purposes of the California Association of Medical Social Workers, including its Preamble and Constitution, Medical Social Work is defined as social and similar technical work done by adequately trained workers in hospitals, dispensaries, offices, mercantile and industrial establishments, organizations, homes or elsewhere, under medical direction and control, as one of the agencies for the prevention and cure of disease.

Medical social workers, therefore, in the meaning of this organization, comprise the trained technical assistants to the members of the medical profession in the discharge of their duties in the prevention and treatment of disease, who subscribe to and are imbued with the same ethics, ideals and spirit of service that actuate the physician in the practice of the healing art.

As practical medical social work, as understood and practiced by members of this association, is an integral part of modern medicine, medical social workers should form an effective unit of the organized medical profession. It is, therefore, the

permanent purpose of this organization to become intimately identified with local, State and national organizations of the medical profession, devoted to improving the practice and progress of scientific medicine for the promotion and protection of the public health.

CONSTITUTION

ARTICLE I

Name

Section 1. The name of this Association shall be the California Association of Medical Social Workers.

ARTICLE II

Purposes

Section 1. The purposes of this Association are as described in the Preamble, which is hereby made a part of the Constitution.

Additional purposes are, to encourage and assist in the proper education of students in medical social work; to establish and maintain adequate standards in medical social work; to hold meetings, conferences and otherwise promote increased efficiency and mutual benefits for members of this organization.

ARTICLE III

Membership

Section 1. Members shall be active, associate and honorary.

Sec. 2. Any person who is actively engaged in medical social work, and who by education, personality, character and experience meets the minimum requirements effective at the time of application is eligible for active membership. The minimum educational requirement for members is, that they shall have graduated from a university, college or school accredited by the Advisory Council, giving training in social work, or furnish an equivalent satisfactory to the Executive Committee. In addition, they shall be engaged in the actual practice of medical social work under approved medical supervision. Personal qualifications and experience submitted are to be passed upon by the Executive Committee. Any active member ceasing to fulfill the requirements for eligibility shall retain active membership to the end of the year.

Sec. 3. Any member of the State Medical Society or any educator or scientist who is actively interested in and has contributed to the knowledge and practice of medical social work is eligible for associate membership.

Sec. 4. Physicians or medical social workers who have rendered distinguished service to the cause of medical social work may be elected honorary members by the Executive Committee. Honorary members shall have all the rights and privileges of the association, except the rights of voting and holding office.

Sec. 5. The name of an applicant for active membership, with such other data as is required hereunder and prescribed by the Executive Committee, shall be presented in writing to the Executive Committee by an active member. Election shall be by majority of the Executive Committee.

Sec. 6. Associate members shall be nominated and elected as are active members, except that honorary or associate members may submit nominations to the Executive Committee.

Sec. 7. All nominations for honorary membership shall be made in writing at least three months before the annual meeting. Honorary members may be elected only at the annual meeting by the active members of the association, and not more than two may be elected in any one year.

ARTICLE IV

Officers and Committees

Section 1. The officers of this Association shall be a President, Vice President and a Secretary-Treasurer, who shall be elected at the annual meeting. The terms of officers shall be one year.

Sec. 2. There shall be an Executive Committee of seven members, consisting of the President,

Vice President and Secretary-Treasurer of the association and four active members, elected by the association at its annual meeting, to serve for one year.

Sec. 3. One-fifth of the members shall constitute a quorum at any meeting of the members of the association.

Sec. 4. The Advisory Council shall consist of the Council of the Medical Society of the State of California and the Executive Committee of the League for the Conservation of Public Health acting with the officers and Executive Committee of this association.

Sec. 5. Vacancies among officers or in the membership of committees may be filled by the Executive Committee.

ARTICLE V

Duties of Officers and Committees

Section 1. The duties of officers are those provided for herein, together with those ordinarily pertaining to the respective offices.

Sec. 2. The Executive Committee shall do all acts and things necessary to carry out the purposes of this Constitution, and shall be the permanent administrative body of this association. It shall fix the time and place of its meetings and of the annual and other meetings of the association. The Executive Committee shall meet at the call of the chairman or upon request of two of its members.

Sec. 3. All matters of policy affecting the educational and ethical activities of this association and its contact with the practice of medicine or with public health shall be referred to the Advisory Council, and its opinion and advice shall govern the position and action of this association; and upon all such matters the opinion and advice of the Advisory Council communicated to this association, without reference by it, shall in like manner govern the position and action of this association.

Sec. 4. The Advisory Council, representing in part the medical and public health bodies, under whose authority and direction this Constitution is formulated and this association is formed, shall furthermore finally determine whether any act or proceeding of this association, or any member thereof, is consistent with the foregoing preamble and the purposes of this Constitution, and what disciplinary steps or proceedings, whether of censure, suspension or expulsion, shall be imposed upon any member or members hereof for any reason.

ARTICLE VI

Dues

Section 1. The dues for active and associate members shall be six dollars per annum, payable semi-annually or annually in advance. Honorary members shall not be subject to dues.

Sec. 2. Only members whose dues are paid shall be in good standing, and delinquency in the payment of dues for one year automatically forfeits membership.

ARTICLE VII

Official Publications

The official and only publications of this association are the "Journal" of the Medical Society of the State of California and "Better Health" of the League for the Conservation of Public Health.

ARTICLE VIII

Ethics

In matters not herein expressly defined, the code of ethics of the American Medical Association, insofar as the same is applicable, shall be the code of ethics of the members hereof.

ARTICLE IX

Amendments

Section 1. This Constitution may be amended by a two-thirds vote of the active membership, which may be taken by mail ballot after the proposed amendment has been approved by the Advisory Council.

Association of Radiographers

The organization of the Radiographers of California has been completed by the Council, in conformity to the requirements of the resolution passed by the House of Delegates at the Coronado meeting. The officers of the Association and the executive council are as follows: President, Franklin W. McCormack; Vice-President, William M. Farrell; Secretary-Treasurer, Leonard Frank; Executive Council: Franklin W. McCormack, William M. Farrell, Leonard Frank, San Francisco; Sidney Rosenthal, Berkeley; Newton Wise, Sacramento; Joseph Pavliger, Oakland; Clarence H. Jones, Los Angeles.

PREAMBLE AND CONSTITUTION of the CALIFORNIA ASSOCIATION OF RADIOGRAPHERS

PREAMBLE

For all of the purposes of the California Association of Radiographers, including its preamble and constitution, Radiography is defined as a group of diagnostic and physical therapeutic procedures to be prescribed by doctors of medicine or dentistry and carried out under the physician's or dentist's direction by specially educated and trained technical assistants.

The diagnostic and therapeutic agencies and activities included for purposes of this organization under the general term of Radiography are:

Radiography of the human anatomy by means of the Roentgen ray or other photographic processes for diagnosis of the diseases or deformities of the human body;

Interpretation of the findings on the photographic plates, films or other impressions, said interpretation to be made only to, and at the request of, a legally registered physician, surgeon or dentist;

Radioscopy, or the examination of the deep structures of the body by means of the fluoroscope, this work to be done only upon the prescription of a legally registered physician or surgeon;

Localizing foreign substances in the body by means of the Roentgen ray and fluoroscope, this work to be done only upon the prescription of a legally registered physician, surgeon or dentist;

Treatment of human diseases by means of the Roentgen ray, this work to be done only upon the prescription and under the immediate supervision of a legally registered physician or surgeon;

Carrying out such other instructions in the use of the Roentgen ray or radium as are prescribed by physicians, surgeons or dentists.

Radiographers, therefore, in the meaning of this organization comprise the educated, trained technical assistants to the members of the medical and dental professions who subscribe to and are imbued with the same ethics, ideals and spirit of service that inspire and govern the physician and dentist, in the practice of the healing art.

As practical radiography is an integral part of modern medicine and modern dentistry, radiographers should form an effective unit of the organized medical and dental professions. It is, therefore, the permanent purpose of this organization to become intimately identified with national, state and local organizations of the medical and dental professions devoted to improving the practice and progress of scientific medicine for the promotion and protection of public health.

CONSTITUTION

ARTICLE I

Name

Section 1. The name of this Association shall be the California Association of Radiographers.

ARTICLE II

Purposes

Section 1. The purposes of the Association are as described in the preamble, which is hereby made a part of the constitution.

Additional purposes are, to encourage and assist in the proper education of students of radiography; to establish and maintain adequate standards in radiography; to hold meetings, conferences and otherwise promote increased efficiency and mutual benefits for members of this organization.

ARTICLE III.

Membership

Section 1. Members shall be active, associate and honorary.

Sec. 2. Men and women shall be accepted in membership upon the same basis.

Sec. 3. Any person who is actively engaged in radiography and who by education, personality, character and experience meets the minimum requirements effective at the time of the application, is eligible for active membership. The minimum educational requirement for charter members is that they shall have completed a four years' high school course or its equivalent. In addition, they shall have had six months of instruction in radiographic subjects in a school or laboratory acceptable to the Advisory Council, with one year's experience in the actual practice of radiography in an institution, hospital or laboratory accredited by the Advisory Council. Personal qualifications shall be determined by the Executive Committee.

Sec. 4. Any active member of the Medical Society of the State of California or the State Dental Association or the Southern California Dental Association who is actively interested in and has contributed to the knowledge and practices of radiography is eligible for associate membership.

Sec. 5. Physicians, dentists or radiographers who have rendered distinguished service to the cause of radiography may be elected honorary members by the Executive Committee.

ARTICLE IV

Officers and Committees

Section 1. The officers of this Association shall be a President, a Vice-President and a Secretary-Treasurer, who shall be elected at the annual meeting. The term of all officers shall be one year.

Sec. 2. There shall be an Executive Committee of seven members, consisting of the President, Vice-President and Secretary of the Association and four members elected by the Association at its annual meeting to serve for one year.

Sec. 3. One-third of the members shall constitute a quorum at any meeting of the members of this Association.

Sec. 4. The Advisory Council shall consist of the Council of the Medical Society of the State of California, the Executive Committee of the League for the Conservation of Public Health, acting with the officers and Executive Committee of this Association. The President, Secretary and one other member of the California State Dental Association and of the Southern California Dental Association shall be members of the Council when duly appointed by their organizations.

Sec. 5. Vacancies in office or in the membership of committees may be filled by the Executive Committee.

ARTICLE V

Duties of Officers and Committees

Section 1. The duties of officers are those provided for herein, together with those ordinarily pertaining to the respective offices.

Sec. 2. The Executive Committee shall do all acts and things necessary to carry out the purposes of this Constitution, and shall be the perma-

nent administrative body of this Association. It shall fix the time and place of its meetings and of the annual and other meetings of the Association. The Executive Committee shall meet at the call of the chairman or upon request of two of its members.

Sec. 3. All matters of policy affecting the educational and ethical activities of this Association and its contact with the practice of medicine or with public health or dentistry, shall be referred to the Advisory Council and its opinion and advice shall govern the position and action of this Association; and upon all such matters, the opinion and advice of the Advisory Council communicated to this Association, without reference by it, shall in like manner govern the position and action of this Association.

Sec. 4. The Advisory Council, representing in part the medical, dental and public health bodies, under whose authority and direction this Constitution is formulated and this Association formed, shall furthermore finally determine whether any act or proceeding of this Association, or any member thereof, is consistent with the foregoing preamble and the purposes of this Constitution, and what disciplinary steps or proceedings, either of censure, suspension or expulsion, shall be imposed upon any member or members hereof for any reason.

ARTICLE VI

Membership

Section 1. The name of an applicant for active membership, with such other data as is required hereunder and prescribed by the Executive Committee, shall be presented in writing to the Executive Committee by an active member. Election shall be by majority of the Executive Committee.

Sec. 2. Associate members shall be nominated and elected as are active members, except that honorary or associate members may submit nominations to the Executive Committee.

Sec. 3. All nominations for honorary membership shall be made in writing at least three months before the annual meeting. Honorary members may be elected only at the annual meeting by the active members of the Association and not more than two may be elected in any one year.

ARTICLE VII

Dues

Section 1. The dues for active and associate members shall be twelve dollars per annum, payable semi-annually or annually in advance. Honorary members shall not be subject to dues.

Sec. 2. Only members whose dues are paid shall be in good standing, and delinquency in the payment of dues for one year automatically forfeits membership.

ARTICLE VIII

Official Publications

The official and only publications of this Association are the "Journal" of the Medical Society of the State of California and "Better Health" of the League for the Conservation of Public Health, and the official publications of the California State Dental Association.

ARTICLE IX

Ethics

In matters not herein expressly defined, the code of ethics of the American Medical Association, insofar as the same is applicable, shall be the code of ethics of the members hereof.

ARTICLE X

Amendments

Section 1. This Constitution may be amended by a two-thirds vote of the active membership, which may be taken by mail ballot, after the proposed amendment has been approved by the Advisory Council.

Book Reviews

The Allen (Starvation) Treatment of Diabetes. By Lewis W. Hill and Rena S. Eckman, 4th ed. 140 pp. Boston: W. M. Leonard. 1921.

This compact manual tells practically all that is necessary to know about the carrying out of the author's treatment. It contains no theory, but gives numerous menus, with caloric calculations and receipts, for preparing diabetic food. It is a useful and thoroughly practical book. L. E.

Roentgen Interpretation. By George W. Holmes and Howard E. Ruggles. 211 pp. Illustrated. Philadelphia and New York: Lea and Febiger. 1919. Price, \$2.75.

Considering the size of this little book on roentgen interpretation, the subject is well covered, or, perhaps, we had better say that this hand-book has touched upon nearly every subject in the field of roentgen interpretation. Perhaps the best criticism we can make is to say that we believe it can accomplish that which the authors wished for it in their preface, for it will surely "prove of practical aid to those in search of a working knowledge of roentgen interpretation." The book is divided into nine chapters, each dealing with a separate subject as chest examination, gastroenterology, et cetera.

M. D.

Principles of Human Physiology. By Ernest H. Starling. 1315 pp. 3rd ed. Philadelphia: Lea and Febiger. 1920.

The third edition of this splendid work needs no great introduction. In spite of all the handicaps thrown in their way by the anti-vivisectionists, English physiologists continue to lead the world, not only in originality of thought but in technical ability and especially in clearness of exposition. Professor Starling stands in the front rank of his profession, and his book is an exceedingly well written and valuable one. The chapter on "Sense Organs" has been revised and largely rewritten by Mr. Hartridge.

W. C. A.

Keen's Surgery, Volumes VII and VIII. By Surgical Experts. Edited by W. W. Keen, M. D., LL. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and Clinical Surgery, Jefferson Medical College, Philadelphia. Octavo of 960 pages, with 657 illustrations, 12 of them in colors. Philadelphia and London: W. B. Saunders Company, 1921. Price: Volumes VII and VIII, and Desk Index Volume, cloth, \$25 net per set. Sold by subscription.

These two new volumes supplement and rejuvenate the five original volumes and the other supplementary volume of "good old Keen," who has come to be the American surgeon's standby and friend in need.

The seventh volume contains mainly chapters that are the result of work done during the war. Lovett's, Sir Robert Jones', and Hey-Groves' chapters on orthopedic surgery, Matas' on vascular surgery, Blake's on fractures, are mines of information that will be of great value to industrial surgeons. They are gathered from an experience with the inexhaustible material of six years which we hope may never be duplicated.

The eighth volume contains forty chapters, many of them quite short, on endocrine glands, on the specialties, on abdominal and thoracic surgery. The chapters on endocrine glands are from the Mayo Clinic. They are disappointing; they deal too much in generalities and theory to be practically useful; their theories are not well enough founded nor explicit enough to throw light on our ignorance of endocrine physiology. Hugh Young's

chapter on the prostate brings much that is new and valuable. Heuer's long chapter on thoracic surgery stands out as an unusually complete and careful piece of work, containing much that is original.

Keen's surgery has made itself indispensable. The two new volumes hold their own with the rest of this admirable work. L. E.

Books Received

Radiant Energy and the Ophthalmic Lens. By Frederick Booth. Introduction by Whitefield Bowers, A. B., M. D. 226 pp. 230 illustrations. Philadelphia: P. Blakiston's Son & Co. Price, \$2.25.

Practice of Medicine. A manual for students and practitioners. By Hughes Dayton, M. D. Fourth revised edition. 328 pp. Philadelphia and New York: Lea & Febiger. 1921. Price, \$2.25.

Diseases of Children. Designed for the use of students and practitioners of medicine. By Herman B. Sheffield, M. D. Formerly Instructor in Diseases of Children, New York Post-Graduate Medical School and Hospital, and Medical Director, Beth David Hospital; Consulting Physician to the Jewish Home for Convalescents and the East Side Clinic for Children. 798 pp. 238 illustrations, 9 color plates. St. Louis: C. V. Mosby Company. 1921. Price, \$9.00.

General Pathology. An introduction to the study of medicine, being a discussion of the development and nature of processes of diseases. By Horst Oertel, Strathcona Professor of Pathology and Director of the Pathological Museum and Laboratories of McGill University and of the Royal Victoria Hospital, Montreal, Canada. 357 pp. New York: Paul Hoeber. 1921. Price, \$5.00.

Organic Dependence and Disease: Their Origin and Significance. By John M. Clarke, D. Sc., Colgate, Chicago, Princeton LL. D., Amherst, Johns Hopkins, Member of the National Academy of Sciences, New York State Paleontologist. 113 pp. Illustrated. New Haven: Yale University Press. 1921.

Maternitas. A book concerning the care of the prospective mother and her child. By Charles E. Paddock, M. D., Professor of Obstetrics, Chicago Post Graduate Medical School; Assistant Clinical Professor of Obstetrics, Rush Medical College; Attending Obstetrician, St. Luke's Hospital. 210 pp. Illustrated. Chicago: Cloyd J. Head & Co. 1920. Price, \$1.75.

Practical Dietetics. With reference to diet in health and disease. By Alida Frances Pattee, Graduate Department of Household Arts, State Normal School, Framingham, Mass.; Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City, etc. Thirteenth edition. Revised. 543 pp. Mount Vernon: A. F. Pattee, Publisher. 1920.

Story of the American Red Cross in Italy. By Charles M. Bakewell. 253 pp. New York: The Macmillan Company. 1920.

Principles of Hygiene. A practical manual for students, physicians and health officers. By D. H. Bergey, A. M., M. D., Ph. D., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh edition, thoroughly revised. 556 pp. Philadelphia and London: W. B. Saunders Company. 1921.

State Society

JOINT MEETING OF STATE AND COUNTY SOCIETIES' OFFICERS

The next joint meeting of the Council of the State Society and the officers of the various constituent societies will be held in San Francisco, Saturday, September 24, 1921. All officers of county societies, who can possibly arrange to do so, should attend the meeting. Where attendance by the officers is impossible, a delegate should be appointed with power to act for the Society.

Hereafter these meetings will be held semi-annually. Arrangements for two such meetings during the annual session in Yosemite next May will be provided as part of the program. The next mid-year meeting will be in Los Angeles, Saturday, September 9, 1922. This date is selected so that members may also attend the Hospital Conference which will be held the same week in Los Angeles. These advance dates are published in order that all persons may have full opportunity to secure any desired information or make any suggestions regarding these meetings.

It is very important that delegates of county societies attend the meeting in San Francisco on the 24th of this month.

SECTION OF OBSTETRICS AND GYNECOLOGY FOR THE COMING STATE MEETING

In the past we have had great difficulty in securing a proper variety of contributions for our Section Meetings, because the synopses as well as the actual articles were sent in at the last moment and could not be submitted to a program committee for selection.

We, therefore, request of those who wish to present original papers at the next State meeting to signify their intention at once and to let us have a clear synopsis of the contents not later than December 1. This will allow us ample time to make proper selections.

We call your attention again to the necessity of contributing a small sum of \$5, as previously requested, in order to secure the services of a stenographer for the coming meeting.

L. A. EMGE, Secretary.

Stanford University Hospital.

THE 1922 HOSPITAL CONFERENCE

The Executive Committee of the League for the Conservation of Public Health announce that the next annual Hospital Conference will be held in Los Angeles on Wednesday, Thursday and Friday, the 6th, 7th and 8th of September, 1922. Hospitals, organizations and persons interested in the arrangements, program or any other matter connected with this important conference should write to Mr. Celestine J. Sullivan, Executive Secretary of the League, Butler Building, San Francisco.

County Societies

Placer County—(Reported by Robert A. Peers, Secretary)—At the regular meeting of the Placer County Medical Society, held at Auburn, Saturday evening, August 13, 1921, the following program was presented: "Modern Conceptions of Treatment of Circulatory Disorders," by Dr. Eugene Sterling Kilgore, of San Francisco; "Diagnosis of Breast Tumors by Exploration," by Dr. Alson Raphael Kilgore, of San Francisco, and "Industrial Fatigue," by Dr. E. H. Coleman, of Hobart Mills.

Dr. Alson Kilgore also gave a short talk upon the educational program of the American Society for the Control of Cancer, and urged the co-operation of the members of the society in promoting the society's educational work during Cancer Week. The following resolution was then adopted:

Whereas, The American Society for the Control of Cancer has named the week of October 30 to November 5 as Cancer Week for the education of the public in the early signs of cancer to the end that the mortality from this disease may be reduced; and,

Whereas, Dr. Carl P. Jones, of Grass Valley, has been appointed as County Chairman for Placer County Medical Society; therefore be it

Santa Barbara County—(Reported by H. L. Schurmeier, Secretary)—The Society met at the Cottage Hospital, Santa Barbara, July 11. There were fourteen members and three guests present and thirty-seven members absent. A report was made of three patients suffering from hyperemesis gravidarum successfully treated with farina gruel, ovarian extract, bromides diet, etc.

Dr. H. F. Profant was elected a member of the Society.

The St. Francis Hospital is to commence construction of a new 100-bed hospital at once. There are to be four floors, two solaria on each floor, twenty-four private baths. The first floor will be for medicine, second floor for surgery, third for obstetrical cases and fourth devoted exclusively to operating rooms, delivery rooms, orthopedic work-rooms and X-ray laboratories. There will be a roof garden on top of the hospital.

MAKING NATIONAL PARKS SAFE

A concerted effort is being made by the U. S. Public Health Service and the National Park Service, to make the National Parks of the United States safe and sanitary for the vast numbers of Americans who have recently taken to touring them. Before the war, when tourists were fewer and most of them traveled on stage lines and stayed at park hotels, the sanitary problem was simple. Since the war, however, the great majority travel in automobiles and camp out, enormously complicating all health matters.

Since early in January, the U. S. Public Health Service, at the request of and in co-operation with the National Park Service, has been preparing for the work; and on May 15, it sent its first sanitary engineers into Yellowstone, Mount Rainier, Yosemite, and Grand Canyon parks. Other engineers, or engineers who have finished work on their earlier assignments, will go to other parks. Only in the largest and most popular parks, such as the Yellowstone, will it be necessary for a sanitarian to remain all summer.

The work consists in examination and protection of water supplies, disposal of garbage and sewage, inspection of milk and food and the way they are handled; providing for camp policing and sanitation; and prevention of malaria. Malaria-carrying mosquitoes have been found in Yosemite park; and especial efforts will be made to eradicate them there and to prevent them from "acquiring a residence" in other parks.

WHY MARYLAND QUIT PHYSICIANS' LINES

In announcing its retirement from physicians' liability insurance as of February 1, the Maryland Casualty states that its premium income from this line in 1919 was only \$18,505 and amounted to only \$322,039 for the ten-year period ending with 1919. Losses and claim expense for the ten years made for a ratio of 71.8 per cent. In 1919 losses and claim expense took 90 per cent of premiums. In only two years of the ten was the company unable to show an underwriting profit on this class of business. Underwriting loss in 1919 was 20.5 per cent and for the ten years 10.6 per cent.

MEDICAL PRACTICE ACT OF ILLINOIS UNCONSTITUTIONAL

The Supreme Court of Illinois, under date of June 22 of this year, declared the Medical Practice Act of 1917 unconstitutional.

This means, in fact, that drugless practitioners will not be compelled to comply with any requirements relative to preliminary education. All the requirement that is left is to pass the examination that is required by the Department of Registration and Education.

A NEW EXAMINING AND TREATMENT TABLE

Recently a very interesting article by Emily Dunning Barringer, M. D., F. A. C. S., of New York City, on "Ward Treatment of Gonorrhoea in the Female," was printed in the New York State Journal of Medicine. The special treatment table referred to was designed by Dr. E. E. Cable, of Portland, Oregon, and is described by Dr. Barringer:

The outstanding feature of the table is a small square drainage box in the lower portion of the table, this drainage box connecting with the waste pipe. Above the table, with hot and cold water connections, is a twenty-gallon tank, with an outlet tube running down to the upper edge of the drainage box. The tank is fitted up with a thermometer and gauge, so that the amount and temperature of the water can easily be read. The patient lies on the table in the lithotomy position with her buttocks protruding over the drainage box. A sterile glass douche tip is attached to the tube at the edge of the drainage box, and the patient inserts the douche tip herself, and holds it in place for about three minutes, during which time she gets about one gallon of irrigation. After this irrigation the speculum is introduced by the physician, and the cervix and vault of the vagina swabbed out with 25 per cent argyrol, and any other special treatment given.

"We have in use three such tables and two supply tanks, each table being connected with both tanks. These three tables can be using one tank at a time, while the other tank is being filled. The practical advantages are cleanliness, control of temperature and pressure, and an enormous saving of time for doctors and nurses. In two hours' time fifty to sixty such douches and treatments can be given. Wherever pus has been found in the urethra or Skene's glands, instillation of argyrol is made into the urethra."

GENERAL HOSPITALS AND TUBERCULOSIS PATIENTS

The opening of wards in general hospitals for tuberculous patients, as recommended by the American Medical Association at its recent annual meeting in Boston, will, it is believed by the United States Public Health Service, be of enormous benefit not only to most of the two million known victims of the disease in the United States, but also to thousands of others in whom the disease is incipient and easily suppressible, if promptly treated. Tuberculosis in this stage is difficult and often impossible of positive diagnosis, even by an expert; and many persons, even when told by their family doctor that their case is "suspicious" and that they should take precautionary treatment, fear the stigma of an avowed tuberculosis hospital and put off action until recovery has become long and difficult. In a general hospital the diagnosis will not be made public and the family will not be embarrassed, but at the same time all necessary precautions can be taken to avoid danger of infection to others.

In support of the new policy it is argued that in many small cities two hospitals, one general and one tuberculous, can be run only at a loss, but if combined would pay operating expenses, especially as the combined hospital would draw many secret tuberculous cases. Many general hospitals could easily enlarge their facilities by fitting upwards, roofs, porches, and unused open-air spaces and

thus provide greatly needed space for tuberculous patients, both former army men and civilians.

The routine treatment of tuberculous patients in all general hospitals, instead of as at present in only about one-eighth of those in the country, should enable people in moderate circumstances to obtain preliminary treatment in their home towns instead of being forced to go without or to go to resorts. Such preliminary treatment would habituate the patient to the regimen essential to his cure and to the protection of others, and would enable him to go back to his home and get well under home treatment, as he probably would not have done without such training.

New Members

Lovas, A., Hanford; Goodrich, W. W., San Joaquin; Robinson, Joseph, Anaheim; Blackmun, Ernest L., Stockton; George, W. S., Antioch; von Werthern, H. L., San Francisco; Southard, C. O., San Francisco; Craig, S. A., Ontario; Shaw, H. N., Los Angeles; Hancock, J. M., Los Angeles; Adams, Charles B., Los Angeles; Steen, C. E., Gardena; Ruediger, Gustav, Los Angeles; Fisher, Carl, Los Angeles; Chaffee, Burns, Long Beach; Shirey, Chas. W., Lankershim; Burke, C. A., Los Angeles; Walters, William A., Los Angeles; Trainor, M. E., Los Angeles; Shine, Francis E., Los Angeles; Baxter, Donald E., Los Angeles; Montgomery, R. R., Long Beach; Holleran, James J., Los Angeles; Craig, C. A., Lakeport; Craig, M. A., Lakeport; Wilson, Frank M., Los Angeles; McLaughlin, Tilman H., Los Angeles; Baetz, Walter G., Huntington Park; Robinson, John W., Los Angeles; Prendergast, John W., Los Angeles; Viole, Pierre, Los Angeles; Shipman, Sidney J., Colfax; Nicholls, Robert J., Auburn; Wheeler, J. S., Lincoln; Reynolds, Lloyd R., San Francisco; Bland, George H., Fresno; Yoakam, F. A., Moorpark; Gibson, Arthur C., San Francisco; Profant, H. J., Santa Barbara; O'Donnell, F. J., Stockton.

Deaths

Austin, S. A. Died in Los Angeles, June 17, 1921. Was a graduate of Rush Medical College, 1877. Licensed in California, 1889.

Bering, Robert Eugene. Died in Los Angeles, August 7, 1921. Was a graduate of Tulane University, La., 1895. Licensed in California, 1901, and a member of the State Society.

Clark, E. M. Died in Oakland, July 16, 1921. Was a graduate from University Vermont, 1908. Licensed in California, 1908. Age 37.

Gordon, Samuel B. Died in Monterey, California, June 13, 1921. Was a graduate of University City of New York, 1889. Licensed in California, 1890.

Kintzi, Erwin J. Died in Los Angeles, July 17, 1921. Was a graduate of University of Southern California, 1919. Licensed in California, 1920.

MacDonald, J. Munroe. Died July 23, 1921. Was a graduate of Medical Department, University of California, 1891. Licensed in California 1892. Was a member of the Medical Society, State of California.

Morrison, W. H. Died in Los Angeles, California. Was a graduate of Kansas City Medical College, Mo., 1880. Licensed in California, 1887. Also a member of the Medical Society, State of California.

Risdon, Herbert Thomas. Died in Berkeley, California, June 21, 1921. Was a graduate of University of Vermont, 1879. Licensed in California, 1882.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Editor and Secretary - - - - - W. E. MUSGRAVE, M. D.
Managing Editor - - - - - CELESTINE J. SULLIVAN

COUNTY ASSOCIATE EDITORS:

| | | | |
|--------------------|-----------------------------------|----------------------|---------------------------------------|
| Alameda..... | Dr. Ruby L. Cunningham, Berkeley | San Bernardino..... | Dr. C. L. Curtiss, Redlands |
| Butte..... | Dr. J. O. Chipella, Chico | San Diego..... | Dr. Robt. Pollock, San Diego |
| Contra Costa..... | Dr. P. C. Campbell, Richmond | San Francisco..... | Dr. Le Roy Briggs, San Francisco |
| Fresno..... | Dr. G. L. Long, Fresno | San Joaquin..... | Dr. Dewey R. Powell, Stockton |
| Glenn..... | Dr. W. H. Walker, Willows | San Luis Obispo..... | Dr. Paul K. Jackson, San Luis Obispo |
| Humboldt..... | Dr. L. P. Dorais, Eureka | San Mateo..... | Dr. A. L. Ofield, Burlingame |
| Imperial..... | | Santa Barbara..... | Dr. Robert W. Hartwell, Santa Barbara |
| Kern..... | Dr. Edward R. Guinan, Bakersfield | Santa Clara..... | Dr. Chas. Richards, San Jose |
| Lassen-Plumas..... | | Santa Cruz..... | Dr. J. B. Cutter, Watsonville |
| Los Angeles..... | M. Creamer, Los Angeles | Shasta..... | Dr. F. Stabel, Redding |
| Marin..... | Dr. W. F. Jones, San Rafael | Siskiyou..... | |
| Mendocino..... | Dr. O. H. Beckman, Fort Bragg | Solano..... | Dr. A. V. Doran, Vallejo |
| Merced..... | Dr. Brett Davis, Merced | Sonoma..... | Dr. N. Juell, Santa Rosa |
| Monterey..... | Dr. T. C. Edwards, Salinas | Stanislaus..... | Dr. E. F. Reamer, Modesto |
| Napa..... | Dr. Robt. Creech, Napa | Tehama..... | |
| Orange..... | C. R. Lane, Santa Ana | Tulare..... | Dr. J. T. Melvin, Porterville |
| Placer..... | Dr. R. A. Peers, Colfax | Tuolumne..... | |
| Riverside..... | Dr. Paul E. Simonds, Riverside | Ventura..... | Dr. C. A. Jenson, Ventura |
| Sacramento..... | Dr. S. E. Simmons, Sacramento | Yolo..... | Dr. Frances L. Newton, Woodland |
| San Benito..... | | Yuba-Sutter..... | |

Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XIX

OCTOBER, 1921

No. 10

THE 1922 MEETING OF THE STATE SOCIETY

The fifty-first annual session of the Medical Society of the State of California will be held in Yosemite National Park, Monday, Tuesday, Wednesday and Thursday, May 15, 16, 17 and 18, 1922.

The American Medical Association session for 1922 will be held in St. Louis, Monday to Thursday, May 22 to 25.

It will be feasible to leave Yosemite after the close of the State meeting and be in St. Louis in time to attend the National meeting.

Arrangements are being made so that delegates, members and visitors from the western states may purchase reservations to the American Medical Association meeting with four days' stop-over privileges at Yosemite.

A proposition is being developed whereby members and visitors from eastern states may secure reservations that will allow them to come to our meeting and then go on to St. Louis.

A number of new sections have been created by action of the House of Delegates and the Council. A complete list of the sections with the name and address of the chairman and secretary of each section is published on page 379 of this number of the JOURNAL.

Each chairman and secretary already has the time and space arrangements allotted by the program committee to their section.

Members desiring to present papers should write to the chairman or secretary of the appropriate section promptly, giving the subject of the paper.

In case of doubt as to the appropriate section or where the contributor prefers to do so for any other reason, they may write directly to the Secretary of the Society as Chairman of the Pro-

gram Committee, who will refer the request to the appropriate section for action.

There will be three general sessions, similar to the one that was held this year at Coronado. The program for these meetings will be handled by the general program committee.

The section on Medical Economics, Education and Hospitals has been assigned to the League for the Conservation of Public Health. This will constitute, in effect, a fourth general session, and will replace the former "League Luncheon."

The program is arranged for three meetings a day, 10 a. m. to 12:30 p. m., 2 to 4:30 p. m. and 8 to 10 p. m. These hours have been selected by the program committee so as to allow the greatest possible opportunity for recreation and social pleasures.

The morning hours of 10 a. m. to 12:30 p. m. are all taken up with the general sessions and the one morning devoted to the section on Medical Economics. A hall to seat one thousand people is being provided for these meetings.

The section meetings will all be held during the afternoons and evenings. Six meeting halls, each seating from two hundred to four hundred persons, are being arranged for section work. Hours for the various sections have been arranged so as to cause the least possible amount of inconvenience to those interested in the work of more than one section.

An "official" social program is not contemplated by the program committee. It is believed that members and visitors will secure more pleasure in Yosemite by not attempting any "organized" social and recreational program.

Space is being arranged for both scientific and commercial exhibits, and the committee will be glad to hear from anyone interested in this phase of the program.

The usual two meetings of the House of Delegates and three meetings of the Council are arranged for, and there will be one meeting of the Council with the officers of constituent societies.

The presidents and secretaries of the various western state societies, as well as those of Mexico, Alaska and the Hawaiian Islands, have been invited to attend as unofficial delegates, and if a sufficient number accept there will be one meeting of this group with the officers of our own society for the discussion of problems of mutual interest.

The Council has approved the program committee's plan that all invitations to persons or organizations to the Yosemite meeting be issued in the name of the society and not by any individual or section. Members or sections desiring any invitations sent are requested to furnish the chairman of the program committee with the names and addresses as promptly as possible. The attendance of a number of physicians of national prominence already is assured.

The last meeting of the program committee and of the Council before the annual meeting will be the latter part of January. The program **MUST** be complete by that date. It will positively go to press the first week in February.

Members are urged to make their requests for assignment, giving the title and a brief synopsis of their paper as soon as possible to the appropriate section officers or to the Secretary of the Society.

The program committee invites constructive comments and suggestions regarding the program or upon any point that will help to make this year's meeting the most profitable of any in the Society's history.

Further comment regarding the program and the 1922 session will be found in each succeeding issue of the *JOURNAL*.

The November number will contain information regarding reservations, transportation and similar subjects. Rules regarding papers, discussions and programs will be issued in an early number.

Make your plans to go to Yosemite Monday to Thursday, May 15 to 18, and to attend the American Medical Association meeting in St. Louis, Monday to Thursday, May 22 to 25.

STOCK SELLING HOSPITALS

It seems advisable to publish a word of caution to members of the medical profession regarding purchasing stock and otherwise co-operating with visionary or unsound hospital propositions.

Information in this office and in the office of the League for the Conservation of Public Health shows clearly that, in addition to a considerable increase in the worthy activities for the expansion of hospital facilities in various communities, there is a much larger number of propositions that are poorly conceived, visionary and in some instances unsound and even dangerous.

The records of practically all of these proposi-

tions are in the League office. Physicians will do well before supporting any proposition financially or by service, to secure the facts of the situation. Before investing time or money in any new hospital project, you may save both by writing to the League for particulars. Some are devoting time or giving their moral influence to projects that can never materialize.

THE CANCER SITUATION

Sufficiently striking to merit attention is the statement in an article elsewhere in this number that California has the highest cancer death rate in the United States outside of New England. This high rate ought to be reduced and the only way in which it can be reduced is to get our cancer patients to come earlier for treatment—for after it has widely metastasized, cancer is hopeless in the face of the highest surgical skill.

We can get our cancer patients earlier only by educating them about cancer—by convincing them that early cancer is curable and by telling them how they may recognize its beginnings. This education must come from the medical profession. To this end the American Society for the Control of Cancer deserves the united support of the medical profession in its intensive campaign of publicity during Cancer Week, October 30 to November 5.

FIXING THE SURGEON'S FEE

The action of the trustees of one of our large eastern hospitals in fixing a maximum fee for surgical operations has aroused much discussion in both the medical and lay press and wherever men gather. In California the comment is practically all in the nature of criticism of various degrees and types.

That such a ruling could be necessary or advisable in any hospital is susceptible of interpretation of past practices that the staff members of most good hospitals resent. It is difficult to believe that the surgeons of our profession, or any considerable group of them, have so far forgotten their teachings and commercialized their activities as to warrant action of the character under discussion. If such is the case, the choice of the hospital in which to make an experiment in discipline is unfortunate. This institution is heavily endowed by a great foundation and its staff members, who formerly rendered their services for personal fees, are now, in part at least, employed upon full time salary, render services for fees that are collected by the institution and used for institutional purposes.

Fair-minded persons will not want to question the motives of the distinguished board of trustees of this splendid institution, but the vast majority of physicians, as well as the thinking element of the community, are regretting a step that unquestionably is not in the best interests of the medical profession or of the public.

In a sense the persons directly affected by this ruling are practicing corporation or socialized medicine. The voice of the profession is against this principle. Surely it will not decrease the aggregate cost of medicine to the public. It will decrease a comparatively small number of large fees to people well able to pay them. It will result in a general upward tendency of fees by surgeons of all grades of ability, this under the perfectly natural philosophy that, now that a fee has been fixed for the best, no one can charge less, for fear he may be classed as second rate. So on through

a long list of normal consequences which indicate, individually and collectively, that any attempt to establish a maximum fee is not to the advantage of the public or of the profession.

ACUTE MECHANICAL OBSTRUCTION OF THE SMALL INTESTINE

By SAMUEL ROBINSON, M. D., Santa Barbara
From the Clinic of the Santa Barbara Cottage Hospital,
Santa Barbara, California.

One-half of the persons operated upon for intestinal obstruction die within a week. This 50 per cent mortality is probably no exaggeration, although we welcome the recent statistics from certain clinics showing a slight reduction.

All papers upon this subject both begin and end with a plea for early operation. The death rate following operations between the forty-eighth and seventy-second hours is greater than within the first twenty-four; after the third day it is generally conceded that the chances of recovery are small. This has always been true, and yet we blunder on. We blame our medical friends for delayed diagnosis, yet we cannot deny that we have operated upon at least half of our patients later than we should have. We formerly blamed our operative mortality in appendicitis to the stupidity of the physician; nevertheless, our mortality in bad, late cases of appendicitis is almost negligible today. Improved surgical technique is generally 50 per cent responsible for the lower mortality in surgical diseases. So also must it be in intestinal obstruction. We should cure all of the early cases and many of the late ones; and late some of them will always be, because of the inevitable obscurity in diagnosis.

Fecal vomiting should not be taught as the cardinal symptom of intestinal obstruction. Fecal vomiting and calling the undertaker are closely related terminating features. Medical students are taught much about pulse, temperature, leukocytosis, and facies, distension and visible peristalsis as symptoms of obstruction. Less attention should be given such symptoms and the diagnosis based upon pain, vomiting and constipation; *the greatest of these is constipation*. Too often we scrutinously observe a patient day after day without clearly realizing that his bowels do not move and cannot be made to move. Even under such conditions we are not infrequently unable to form a mental picture of a mechanical obstruction of the bowel. We try to picture the condition before us as a temporary paralytic ileus, when the obstruction may be all the while mechanical. The dread of a developing peritonitis following operation detracts our attention from the possibility of a mechanical block caused by postoperative adhesions or from local obstructive ileus associated with local peritonitis. Then we are prone to watch the stomach contents and the abdomen itself without working repeatedly with enemas to determine definitely whether or not an intestinal obstruction exists. Constipation, stubborn, persisting and repeatedly unyielding is the symptom which should be recognized as almost our sole guide in the diagnosis of intestinal obstruction. Having accepted the diagnosis, with the help of other symptoms, we should try to

determine whether the obstruction is due to adynamic, paralytic ileus, or to an actual mechanical obstruction. There are but two types of intestinal obstruction which are not likely to be corrected by opening the abdomen; these are all types of paralytic ileus without peritonitis, and postoperative paralytic ileus with general peritonitis. All types of ileus are to a greater or less extent mechanical. All types of mechanical ileus should be promptly operated upon after repeated failure to obtain an actual bowel movement or when upper bowel flatus occurs, unless there is conclusive evidence of one of the types of paralytic ileus to which I have referred.

Probably one of the chief causes of our delayed operation for intestinal obstruction is our dread of unnecessarily opening the abdomen. Would it not be better to make an occasional mistake of this character than to lose so many patients because of delayed operation?

However, even with all delays in diagnosis as contributing factors to the high mortality, yet our surgical technique is undoubtedly faulty and to a great extent responsible for the deaths from this disease.

I propose to limit myself to the subject of acute mechanical obstruction of the small intestine.

Four patients of my own in the past eight months are fresh in my memory. A careful review of the papers of the past three years has further impressed me. I venture the statement that the causes of our failures are (1) too many resections and anastomoses and (2) too little external bowel drainage.

The admirable experimental work from Chicago, Baltimore and New York laboratories is reviewed in all publications on this subject. We must accept from these certain facts. A toxic substance is formed in the distended bowel which is absorbed in proportion to the degree of destruction of the mucosa. The mucosa is made necrotic by lack of blood supply, produced probably by distention of the gut or by strangulation. This toxic substance, when injected into normal animals, produces the symptoms of intestinal obstruction and death.¹ (The toxic element has never been isolated from the blood.)

When we operate on a late case of obstruction, the lethal dose of this toxin may already have been absorbed through a damaged mucosa. If in a given case the distended gut has not yet produced sufficient change in the mucosa to produce a sublethal dose of such toxin, what should be the surgical procedure? The surgeon opens the abdomen. A coil of discolored bowel is seen among normal coils. He finds an adhesive band or a diverticulum constricting the gut; divides this and inspects the damaged coil. The color gradually changes from plum color to cherry red. What then? The patient's condition is none too good. He shows the effects of the trauma of exploration. Toxic absorption had begun before the operation. The surgeon concludes that the gut will live and not perforate if he restores it to the abdomen. Will the absorption from this discolored segment of gut cease at that moment when the constriction was released? Will the already partially damaged

mucosa no longer absorb the toxic material lying within and upon it? Will the toxic content of the damaged coil in the absence of peristaltic waves following the anaesthesia, pass promptly down into normal bowel, where we are nowadays willing to concede that normal mucosa will not absorb it? Or will the absorption in the damaged gut probably continue at least sufficiently to increase its toxic effect upon an individual whose resistance has now been lowered by operation and anaesthesia?

We have all replaced discolored bowel in such fashion and recovery has ensued. Nevertheless, this is one type of case where we gamble with a life merely for the sake of avoiding the nuisances and inconveniences of fistulae, and secondary operation. Although replacing the gut in such instances may be successful, the safest risk would be to deliver the discolored gut outside the abdomen, to insert a catheter immediately and to freely open the gut in twelve to twenty-four hours. There would be no question, then, as to further absorption of toxic material through a damaged mucosa. A vent would be established for the accumulated gas and fecal material proximal to the original point of obstruction. The relief of distention by the gradual emptying of the distended coils favors the return of peristalsis.

Take another hypothetical example: Suppose the strangulated gut described, does not regain its luster and change of color. It cannot be replaced. Again we assume that the patient's resistance to the beginning toxicity has been reduced by the operative exploration. Resection of the discolored bowel is performed with end-to-end suture. The abdomen is hastily closed—an excellent operation has been executed. An even greater chance with the patient's life has been taken. It may succeed. If so—no fistulae—no nuisances—all is well. But even the best surgeon, rapid, nontraumatic and deft in intestinal anastomosis, cannot deny that the safer procedure would be to deliver the coil, to empty it with a catheter, to drain it and the distended coil above to incite the restoration of peristalsis and thus decrease the risk.

I have referred to the delivery of a strangulated coil to the abdominal wall simply to contrast a safer method with doubtful replacements and resections and anastomoses. I do not mean to recommend the technique as such in all cases. It is the extreme precautionary measure—a poor kind of operation for all other reasons than its element of safety. The interval between the primary operation and the subsequent secondary operation for restoring the continuity of the bowel—an interval perhaps of several months—is a wretched one for the patient, nurses and surgeon.

Nevertheless, the principle of immediate and thorough drainage of the damaged, distended, absorbing bowel, within the extra peritoneal safety zone is the one for which I am contending, and any modification of the operative technique which will accomplish this object without the necessity of actually delivering a coil to the abdominal wall, we will all, of course, immediately accept. Such modifications are these for example: The gut is resected, the ends anastomosed; a catheter

is introduced proximal to the anastomosis for the drainage of the distended proximal coils. This is the ideal operation for the right man upon the right patient. The surgeon must consider two factors—his own experience and the patient's resistance. Unless he do a resection quickly, neatly and tightly, the safer method should be used. Can a given patient in a given state of toxicity resist the trauma of a given surgeon's technique? In determining the resistance of a patient with mechanical ileus and endeavoring to measure his toxicity, we may well resort to certain guides applicable in obstruction which we cannot always employ in other abdominal conditions.

Whipple² proves experimentally that the excretory function of the kidney is greatly impaired by the toxin of intestinal obstruction; that a condition similar to chronic nephritis exists, which rapidly disappears after relief of the obstruction. Whipple aptly suggests "that the nonprotein nitrogen or ureanitrogen content of the blood, as well as the kidney function, may indicate a serious intoxication and the necessity of urgent measures."

If this be true, may we not also employ the urea, phenosulphophthalein and NaC^1 tests, not only to complete the diagnosis, but to aid us in determining the degree of intoxication from which the patient is suffering, and choose the type of operation accordingly?

Van Buren³ has recently urged the emptying and irrigation of the bowel above the point of obstruction, regardless of the method employed to relieve the obstruction itself. He believes this can be done before closure of the wound without contamination.

Codman⁴ goes so far as to state that a Monks or Monyher tube should be inserted in the small bowel above the point of obstruction, and that it should be threaded along the whole length of the gut in order to relieve its distention. He believes that the reward is greater than the shock produced by this much handling of the bowel.

There are types of mechanical obstruction *without bowel strangulation* in which toxins must result from the distention above the point of obstruction. In such cases the cause of the obstruction is a local paralytic ileus from a local peritonitis, as in Handley's so-called ileus duplex.⁵ In such cases the obstructive point, being not removable, must be sidetracked. Here again the choice of method is to my mind the secret of the result. Again it is a balance between the degree of resistance of the patient and the experience of the operator. An ileocolostomy for low ileal obstruction plus a caecostomy, when the colon is also obstructed, is the classical technique. But there are occasions when a preliminary ileostomy is the emergency method of choice instead of an ileocolostomy. In other words, bowel drainage rather than intestinal anastomosis.

Another group of cases with which we are familiar recover according to the judgment employed in their handling. I refer to the mechanical ileus occurring from five to ten days after the removal of a septic appendix. A paralytic ileus may have immediately followed the operation with apparent recovery. Then neither

gas nor fecal matter can be obtained by enemata. The peristalsis is bucking against resistance and may be visible, as it rarely is, in the routine case of acute obstruction. There is vomiting. It is too early for the formation of an adhesive band. The abdomen is opened and coils of distended small bowel present. Certain coils are plastered together with exudate. The site of obstruction is not visible. One surgeon will explore the right, lower quadrant, handling and separating adherent coils, to find collapsed bowel near the cecum, and perform an ileocolostomy. He adds shock and he may produce new fields for plastic adhesions—obstruction may occur at a new point higher than his anastomosis. Another surgeon will incise in the median line under local anæsthesia—insert a tube in the first low coil presenting, and then stop. Ileostomy in such cases of local adhesive ileus, where peristalsis is yet active, will generally relieve the distention. The kinked and adherent coils are likely to become patent when the distention is relieved, and results by rectum are forthcoming within twelve hours. The chances of a strangulated section of gut being present and overlooked in these early postoperative cases is very slight.

Here again the mortality is less if we sacrifice our curiosity to localize the obstruction and perform anastomosis, and substitute a simple ileostomy of elective type. Such fistulæ generally close spontaneously.

I will cite the four instances of acute mechanical ileus of the small bowel which I have handled in the past eight months:

The first was an obstruction from volvulus of the ileum. The operation was early—twenty-four hours after onset of symptoms. Twelve inches of gut were resected, followed by end-to-end anastomosis. The convalescence to the thirteenth day was satisfactory. Recurrence of symptoms of obstruction then occurred. A second operation was done fourteen hours later. There was a local, plastic exudate at the site of the original anastomosis. Three coils were adherent and angulated at this point. Forty minutes were wasted in the separating of these coils and in suturing a bowel tear incident to it. The bowel at the site of the old anastomosis was then delivered into the wound. A catheter was inserted. Immediate paralytic ileus ensued with no response to peristaltic stimulation. Death occurred on the third day. This fatality was probably inexcusable. The local infection was not from a leaking anastomosis, and therefore probably from contamination at the time of the anastomosis; hence the later development, local infection and local ileus. Had I, at the first operation, resected the bowel and brought the ends out, or delivered the bowel and resected it with a cautery, a secondary operation would have been necessary, but the patient might have lived.

And again, at the second operation, had I not attempted to relieve the adherent coils of bowel, but had incidentally done an ileostomy to the distended coil, then I might have saved the patient.

The second case: Another surgeon had removed the right ovary and appendix. A paralytic ileus immediately followed three days after operation, in the presence of marked distention. The wound

broke open and the bowel presented. I repaired the wound under gas and oxygen anæsthesia. The distention continued with vomiting, constipation and pain, but without visible peristalsis. I fell into the trap of regarding the condition as a continuing paralytic ileus and delayed four days. At operation, an adhesion band in the region of the primary operation was divided and the bowel restored to the abdomen.

I credit the recovery of this patient to the lack of strangulation and intoxication. The absorption was sufficient from the distended coils above the point of obstruction to cause definite symptoms of toxemia, and it was not sufficient to be fatal. The delay in operating for relief of obstruction was the old, common, but inexcusable one of interpreting the condition as one of paralytic ileus.

The third instance was one of strangulation of seven inches of the upper ileum from a band—perhaps the remains of a Meckel's diverticulum. Perforation of the necrotic bowel had occurred 1 cm. from the constricting band, followed by general peritonitis, fibrin and purulent fluid apparently free in the abdominal cavity. The physician called me on the second day, and then it took me seven days to decide that operation was necessary, in which time I visited and examined the patient twice daily.

Is not this inconceivable? The abdomen was not distended. Peristalsis was not visible. Enemata brought some flatus and some fecal material, but obviously only from the bowel below the obstruction. There were spasmodic pains from the beginning, which did not increase in severity and occurred sometimes at intervals of two to three hours. The temperature, pulse and leukocytosis were negligible. It was only because of a slight change in the quality of the pulse that I decided to operate. When the physician saw the contents of this woman's abdomen, I think he concluded that any subsequent censures which might ever be showered upon him by a surgeon would be met with rebuke.

After dividing the constricting band, the discolored gut was brought out of the wound and sutured, leaving room for a single pelvic drain. A catheter was immediately inserted and twelve hours later the necrotic bowel was removed with a cautery. Of course there was infection of the wound, but recovery occurred without a hectic convalescence.

The usual dermatitis occurred and it was three months before the skin permitted a secondary operation, at which time the original wound with the two presenting bowel ends was excised *in toto*. The freshened intraabdominal stumps were then closed and a side-to-side anastomosis performed at the ends. The patient is now entirely well.

This was one of the instances where I employed the safer technique. It was the seventh day and yet our mortality statistics show that after the third day there is little hope; little hope, I repeat, for resection or anastomosis, but some hope yet if the simpler technique is employed.

The fourth patient was a woman of forty-three who had been operated by another surgeon for cancer of the cervix by the Percy cautery method. A vesicovaginal fistula had resulted.

Three months after the operation, obstruction of both ureters occurred either from recurring carcinoma in the bladder wall, or from cicatrization following the cauterly burn. I performed a left nephrotomy as an emergency to relieve the urinary obstruction. Five months later I removed the opposite pyonephrotic dead kidney. Prior to this operation there had been occasional lower, right abdominal pains with visible peristalsis.

Two weeks after the nephrectomy, the symptoms of obstruction returned in an acute form. Seventy-two hours were allowed after the diagnosis was made to see if the bowel might again become patent, since a patient with a vesicovaginal fistula, a nephrostomy fistula, recurring carcinoma, and convalescent from a recent nephrectomy, was one possibly entitled to delay. A fourth intrusion upon the efforts of Nature to end this woman's life was reluctantly decided upon.

A phenosulphophthalein test was made from the left nephrostomy tube, which showed a normal function. Through a median incision, the right iliac region was hastily palpated, revealing collapse of the last portion of the ileum. The obstruction was apparently not from recurring growth. A low, distended coil of ileum was brought into the wound and sutured there. A rubber tube was inserted and twelve hours later the bowel was opened freely.

This patient recovered from the operation, and is alive today, four months after the last operation. I propose soon to close the ileostomy and probably do an ileocolostomy.

Of the four instances, three have survived. The only case which was operated upon within the first three days, died. Late cases then may yet be saved. As to the symptomatology—pain, vomiting, and constipation were present in all four cases. Visible peristalsis was present in but one.

I believe that ileostomy in two cases explains their recovery, and that any further operative procedure would have killed both.

Had I performed simple ileostomy at the time of the late, secondary obstruction in the only fatal case, I believe that my total mortality would have been zero.

In conclusion, may I reiterate my contention that the persistently high mortality in the surgery of acute mechanical obstruction of the small intestine is due in part to delayed diagnosis, but more particularly to errors in judgment as to the proper surgical technique to employ in a given case. This error consists primarily in an over-enthusiasm for radical measures, such as resections and anastomoses, and an unjustifiable reluctance to employ ileostomy alone.

1. Experimental Intestinal Obstruction, by Frank L. South, M. D., and Leo J. Hardt, M. D., Chicago. Archives of Internal Medicine, 1918, vol. xxi, p. 292.
2. Renal Function Influenced by Intestinal Obstruction, by Irvine McQuarrie and A. G. Whipple, M. D. Journal of Experimental Medicine, vol. xxix, p. 397, 1919.
3. The Relation Between Intestinal Damage and Delayed Operation in Acute Mechanical Ileus, by Frederick T. Van Buren Jr., M. D., of New York. Annals of Surgery, vol. lxxxii, p. 610, November, 1920.
4. Intestinal Obstruction, by E. A. Codman, M. D. The Boston Medical and Surgical Journal, vol. 182, p. 420, April, 1920.
5. Ileus Duplex, by W. S. Handley. London Lancet, 1915, vol. 1, p. 900.

UNCOMPLICATED FRACTURES OF THE PELVIC RING*

By HAROLD BRUNN, M. D., and LIONEL D. PRINCE, M. D., San Francisco.

This paper is based on material seen in private practice, in the San Francisco Hospital, in the University of California Surgical Service, and on cases referred by the Industrial Accident Commission and the State Compensation Insurance Fund. We have attempted to make ourselves conversant with the pelvic fractures that have been reported to the Industrial Accident Commission and to larger insurance companies. Unfortunately, their case records are incomplete and difficult to obtain. Therefore, no statistical record of the incidence of pelvic fracture, or even of the relation of fracture to disability can be drawn from their files.

This paper does not attempt to consider the different varieties of pelvic fracture, but confines itself solely to fractures of the pelvic girdle. We have attempted to discover causes of disability following injuries of the bony framework of the pelvis. We are not considering complications due to injury to the bladder, urethra and pelvic viscera.

Burnham points out that in statistics taken from the Presbyterian Hospital, New York City, fractures of the pelvis occurred about one-fifth as often as fractures of the femur, and about twice as often as fractures of the vertebrae.

Plagemann's statistics from Rostock, based on X-ray diagnoses of 1393 fractures, show 1.22 per cent of fractures of the pelvis. This varies in different clinics down to 0.54 per cent, depending on the location of the hospital.

The diagnosis of fractures of the pelvis is not always easy to determine clinically. The usual absence of crepitus and the inaccessibility of the parts adds to this difficulty. It has been our experience on a number of occasions to find patients complaining mainly of pain around the hip, so that a lesion of this bone was suspected, rather than an injury to the pelvis, with the result that many days elapsed before a true diagnosis of the injury was made.

It is unfortunate from the point of view of diagnosis that some patients with fractures of the pelvis are able to walk for considerable distances unaided, a fact which has led the examining surgeon to overlook the seriousness of the injury.

Not infrequently a patient with a pelvic fracture, after a few days in bed, is quite free from pain, and the attending surgeon misinterprets the symptoms as a simple contusion. Our Industrial Accident cases seem to verify this statement. For some reason X-ray pictures of the pelvis are not always made, or if made, are incomplete or poorly taken. This is especially so in the country, where the services of a good X-ray plant are usually not available. The misinterpretation of a poor plate has led to many errors that might otherwise have been avoided.

We would, therefore, insist that in any severe injury around these parts, and especially in cases of fractured neck of the femur, that a plate of

*Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

the pelvis be taken to exclude any possibility of an associated pelvic fracture.

Jensen calls particular attention to the fact that the pelvis can be fractured by slight trauma, in some of his cases so slight that no one has thought of the possibility of fracture. In five cases the fracture was the result of a fall in getting out of a street-car, in three the result of a fall from a bicycle, in four the result of a fall on the stairs, and in one, the result of tripping on the floor, in the case of an elderly woman. In one case, after recovery from fracture of the skull, persisting pains in the pelvis and limbs were ascribed to a traumatic neurosis or hysteria until X-ray revealed a fracture of the pelvis with viscid callus. In other cases a coincident fracture of the femur masked the fracture in the pelvis. In three cases the patients were treated at various hospitals for contusions. In four cases the fracture escaped detection, and the patients crippled for a year or more. In our own experience similar cases of overlooked diagnoses have occurred.

Careful palpation of the pelvis in all possible positions, and examinations through the rectum and vagina, is an essential preliminary to diagnosis. It is surprising how little pain there may be even upon deep pressure, how disarming the patient's assertions of comfort after five or six days in bed, even in the face of severe fractures of the pelvic bones.

We have found that an important and persistent symptom of fracture of the pelvis is an inability of the patient to turn over in bed unassisted, without great pain. This symptom may be present, of course, with injuries other than those of fracture, but when it is present and persistent we should recognize that fracture of the pelvis is possible, and a careful X-ray examination should be made. Our attention was first drawn to this sign by the frequency of its occurrence in late cases of disability. These patients would frequently state that following the injury they soon became comfortable in bed, lying on their back; that after two or three weeks they were permitted to go about on crutches; that turning in bed, however, caused them great pain, and that this difficulty persisted even one or two years after the injury was sustained. It is a sign, therefore, the presence of which should not be disregarded, and demands a further search on the surgeon's part for its cause.

Temperature following fracture of the pelvis is very common, frequently rising to 102, and lasting five or six days. Its presence does not always mean that it is due to complications, but if it does not recede in a few days, an overlooked complication must be seriously sought for.

The question of treatment in fractures of the pelvis is usually dismissed with a very few words. The present accepted method is the use of the plaster of paris cast. We have come more and more to look upon this method with disfavor. 1. It is heavy and cumbersome. The patient is not comfortable, and nursing is difficult. 2. Anesthesia is often used for its application. 3. It

is not mechanically efficient. The body contracts away from the cast, leaving considerable latitude of movement. There is not a constant correcting pressure tending to bring the fragments in apposition, but rather the tendency of the plaster cast is to hold the fragments in the doubtful position they were in at the time of application. 4. Plaster of paris, during the number of months necessary for treatment, produces anemia from circulatory pressure, atrophy in muscle and fascia, and changes in the joints, which delay the period of convalescence after the patients are able to get out of bed. We have found that these patients, especially those with arthritic tendencies, following the



Fig. 1.—Suspension apparatus for treating fractures of the pelvis.

use of plaster, may take from two to three months longer before they can get around without the aid of cane or crutch. We believe this to be due to the reasons cited above. 5. It seems to us, from our personal experience, that not only the temporary disability, but also the permanent disability is greater after the use of plaster of paris, in comparison with the simpler method which we have adopted.

The use of fixation with sandbags and adhesive plaster are open to similar objections of inefficiency.

After trying practically all of the accepted methods, we would like to emphasize the method which we have adopted to the exclusion of all others.

This method consists essentially of a canvas sling, about fifteen inches wide, which passes around the pelvis and suspends the patient a few inches above the bed. The sling itself is suspended from an overhead crossbar or Balkan frame. (See Fig. 1.) The essential correcting and immobilizing factor is due to the compression forces of the sling acting on the pelvic girdle, a force which is approximately equal to the major portion of the body weight. This force is continually acting, and with the relaxation of the muscle there is a constant disposition for the displaced fragments to fall into their natural positions. In those cases where the entire side of the pelvis is displaced, as in associated fracture-dislocations of the

sacroiliac joint, a Buck's extension of the leg is a valuable adjunct.

The advantages of this method of treatment consist in ease and comfort to the patient, simplicity of nursing, avoidance of muscular atrophy, better circulation throughout the pelvis, and accessibility when incision or dressings are necessary, in cases of complications.

More important than these advantages, but perhaps dependent upon them, is the fact, as shown by all the cases which we have treated, that the patients on getting out of bed experience no pain or disability whatsoever, and in a remarkably short time are able to walk about unassisted, and to resume their occupations.

No originality is claimed for this method of treatment. It was used by one of us in certain cases many years ago, but its value was never impressed upon us until our interest in Industrial Accident cases brought out the frequency and length of disability following the other forms of treatment.

This method may not be essential to all forms of fractures. Perhaps some slight fractures of the pelvic girdle may be treated just as well, lying flat on the back in bed. Other fractures demand manipulation under anesthetic to bring the parts in proper apposition, especially when the symphysis has sprung apart. It is so simple, however, that it can be used equally well in the simpler and the more severe types of fracture, without added discomfort to the patient.

The length of time that a patient should remain in bed is an equally important factor in preventing disability. The surgeon too frequently shortens the period of rest in bed because he lacks knowledge, desires to minimize expense, or yields to the urgings of patients whose symptoms have disappeared. Because of the weight-bearing necessity to which the pelvis is subjected, union must be firm and complete before the patient arise from his bed. Two or three months in bed are usually required for fractures of the pelvic girdle. It is believed that it is seldom safe to allow the patient to walk before this time.

The three cases which we wish now to report are chosen from a considerable series, treated by the sling method. They represent the worst types of fractures with which we have had to deal, and the fracturing force in all of them was as severe as any of those which we have had to refer to for late disability.

Case I.—W. C. On July 20, 1920, patient, while working as a moving crane tender, was crushed between a crane and an iron column. The pressure came just over his pelvis, and when he attempted to stand up he found that he was unable to do so, owing to the extreme pain. We saw the patient a few hours later in consultation with Dr. Alfred Roncovieri, at which time the patient complained of great pain, especially in the right groin, and while he could move his legs, the effort caused him much distress. His abdomen was distended and tense, but there was no definite tenderness elicited. He voided urine without difficulty, which was free from blood. The left buttocks was definitely ecchymosed. The spine presented nothing abnormal in appearance, and sensory examination of the legs was negative. Pressure on the crest of the ileum caused some pain, while pres-

sure over the great trochanter of the right femur caused great pain in the right groin and over the bladder. Movements of the hip joints were normal, but internal rotation, flexion, and abduction beyond 45 degrees caused pain over the lower abdomen and in the region of the symphysis. Rectal examination normal except for some fullness and tenderness at the right sacroiliac joint. X-ray examination showed a double vertical fracture of both rami, with a fractural dislocation of the right sacroiliac joint, with an upward and backward displacement of the right ileum and ischium. Temperature 100. P. 100. R. 20.

Traction, by means of Buck's extension, was applied to the right lower limb, and the patient was suspended by means of a canvas sling. All his pain was immediately relieved, and the patient was kept in this sling for a period of ten weeks. At the end of this time the sling was removed, and the patient was permitted to lie freely in bed for one week. He was permitted to get up, and found that with the aid of canes he was able to walk around absolutely free of any symptoms except a general weakness. He was discharged from the hospital on September 16. Examination at this time showed the man to be absolutely free from symptoms. He had no tenderness at any place. Movements of the hips were free and painless. He could assume any desired position, and he demonstrated his well-being by skipping and jumping. X-ray examination showed that the traction combined with the compression due to the sling had resulted in a marked improvement of the position of the fragments.

The patient returned home, and at the end of five weeks returned to his former occupation. When last heard from he stated that he had no pain or discomfort whatsoever, and that he felt himself as physically fit for his work as he had been before his injury.

Case II.—Miss F., age 44. Entered Lane Hospital April 3, 1916. During a spell of temporary mental aberration the patient jumped from a third-story window, landing on a concrete pavement. As a result she sustained serious injuries, as follows: Compound fractures of the tibia and fibula of both legs. On the left side the bones were comminuted, and the soft parts pulpified. There was a comminuted fracture of the os calcis of the left foot, fractures of the second, third, and fourth lumbar vertebrae, and a severe fracture of the pelvis. X-ray plate of the latter showed a fracture through the ascending and descending ramus of the pubic bone on the left side, with wide separation at the symphysis, and a separation at the left sacroiliac joint.

The patient passed through a stormy convalescence. Amputation of the left leg below the knee was necessary. The only comfortable apparatus that we could use for the fractured pelvis was the suspension apparatus herein described.

X-ray pictures taken of the pelvis a month after the injury showed that the pubic bone at the symphysis had gone back into place, and there was evidence of union at the site of the fracture.

She left the hospital on the 29th of May, something less than two months after the injury. She was still unable, because of her injuries, to be out of bed. In June she was able to be about on crutches, that is, about three months after the injury. Later an artificial limb was obtained, which threw added strain upon the pelvic fracture, but at no time during her convalescence, or later, were there any symptoms or complaints referable to the fracture of the pelvis.

Case III.—Mrs. F. Patient seen with Dr. Naffziger at the Franklin Hospital on the evening of January 25, 1920. Her injuries occurred in an automobile accident on the day previous, which resulted in a fracture of the skull and a fracture of the pelvic girdle. The latter had caused a rupture of the bladder, and there was evidence of extravasa-

tion of blood and urine in the retroperitoneal space.

An immediate operation was performed. The tear in the bladder was closed, and the patient was placed in the suspension apparatus for her fractured pelvis. The X-ray showed a fracture through the ascending and descending ramus of the pubis, with separation of the sacroiliac joint.

The suspension apparatus made dressings of the wound very easy of accomplishment. There was no leakage of urine. Patient made a very excellent recovery. She was allowed to sit in a chair at the end of the tenth week. Three days later she was walking around the room with crutches. She was discharged April 25, just three months after the injury. Her stay in the hospital was prolonged because of her mental symptoms. She was always an excitable and nervous woman, given to a great many complaints, but in spite of this, at no time was there any disability or complaint referable to the fracture of the pelvis.

From the Industrial Accident Commission cases which we have refereed, and from the cases gathered from the files of the Industrial Accident Commission and the State Compensation Insurance Fund, through the kindness of Dr. Morton Gibbons and Dr. Lester Newman, certain conclusions may be permitted.

It is a striking fact, noted early in our reports to the commission, that the cases coming up for disability were permitted early weight-bearing, before sufficient time had been allowed for union of the fragments to occur. Some of the cases with very simple fracture, where the diagnosis was overlooked and no recumbent treatment was instituted, showed disabilities equally as great as the more severe injuries. These points are exemplified in the following cases: C. J., M., A., S.

S., foreman. Refereed February 16, 1921. Injured August 7, 1920. Fell fifteen feet, striking left side. Treatment in bed with sandbags for five and one-half weeks. Walked with crutches for one week, free from pain, then used a cane. At later date noted certain symptoms. Fracture of ascending ramus of pubis, left side. No excess callus; well united. Symptoms: Dull ache in left groin, aggravated by any exertion. After walking any distance, the left hip becomes weak. Patient an intelligent man, foreman, suffering disability probably from insufficient treatment at time of fracture.

A. Referred June 22, 1911. Injury, October 9, 1916. Hit by a handcar loaded with lumber, and thrown from a bridge three feet high, landing on right hip. Walked on crutches in fourteen days. No immobilization used. Fracture of descending ramus of ischium and pubis, close to tuberosity. No excess callus. Symptoms: Patient neurotic type. Physical examination negative. Claimed pain behind the left trochanter in the region of the ischial tuberosity, referred down the posterior aspect of the thigh. Pain increased on exertion. Disability the result of improper early treatment.

St. ———, laborer. Refereed May 16, 1919. Injured September 12, 1918. Pelvis crushed between two logs. Treated in hospital for five weeks with a pelvic bandage. X-ray showed fracture of the ascending and descending rami of the pubis, somewhat comminuted, and with considerable callus formation. Separation of both sacroiliac joints. Symptoms: Usually walks with a cane, with which he lists to the right side and forward, and supports his body with his hand. Unable to turn over in bed without pain. Any sudden movement causes pain. Pain over the left pubic ramus increased on exertion or pressure. Pain referred down left leg to knee (obturatos nemo).

R., laborer. Refereed January 13, 1919. Injured March 6, 1918. Pinned between a steam shovel and a bank. Many other concomitant injuries. Length of time of treatment of pelvis not known. Fracture of left descending ramus of the pubis, with great displacement. Bone felt on palpation in left perineum. Symptoms: Walks with a limp. Difficulty in turning in bed or getting out of bed. Pain around the pelvis on left side, radiating into left hip. All symptoms increased on exertion. Patient lists to left side when he walks.

C. J. Refereed August 4, 1917. Injured May 26, 1917, by fall. Received no treatment for a sustained fractured pelvis, owing to the fact that the true diagnosis was not made. The injury to the pelvis was a mere crack, involving the ascending and descending rami on the right side. Symptoms: Walks without limp or cane. Complains of pain in right groin or gluteal fold. When he attempts to lift, the pain is accentuated so that he cannot work. He was thought to be a malingerer.

M. Refereed February, 1918. Injured May 29, 1917. Run over by a lumber wagon, wheel passing over left thigh and pelvis. In hospital fourteen weeks. Plaster cast for eleven weeks. Symptoms: Walks with a limp. Weakness in left leg. Difficult to turn in bed. Assumes sitting position with difficulty, and is unable to get up without the use of his hands.

CONCLUSIONS

1. Fractures of the pelvis should not be overlooked because of the slight trauma sustained.
2. X-ray examination of the pelvic bones is still not made frequently enough.
3. The inability of the patient to turn in bed without pain is the most characteristic single symptom of fracture of the pelvis which should demand X-ray examination.
4. Inefficient early treatment and, particularly, insufficient time in bed for solid union, is the most common cause for later permanent disability.
5. Late disabilities following fracture of the pelvis are difficult to remedy.
6. The suspension method in the treatment of fractures of the pelvis offers advantages in simplicity, comfort, and results.

"THE INCIDENCE AND CLINICAL SIGNIFICANCE OF FLAGELLATE INFECTION IN CERTAIN CHRONIC DISEASES."*

By JOHN V. BARROW, S. B., M. D., Los Angeles.

The purpose of this paper is chiefly to place before the profession the clinical findings in a considerable group of patients similarly infected with the flagellated protozoa. The cases mixed with amoebic infection are purposely omitted from this series.

A long experience and careful study of these organisms enable me to be comparatively certain of their identification. No case in which the diagnosis of flagellates is in doubt has been admitted to this series. This work has been done on patients from routine private practice. It not only embraces diagnosis with attendant analysis, but also includes treatment with all necessary and subsequent tests. Stool analyses have been done after the technic of Prof. Chas. A.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Kofoid,¹⁴ whose skillful and cheerful help is most gratefully acknowledged.

The clinical work on these cases has been largely a pioneer's ordeal. The flagellate *Lamblia* or *Giardia* was first discovered by Lambl in 1859. This antedates the same author's finding of amoeba by one year. Davaine discovered *Trichomonas intestinalis* in 1864. These discoveries do not seem to have stimulated much investigation of general importance. This medical legarthy is well illustrated by a quotation from Geo. Dock¹ in his article "Trichomonas as a Parasite of Man." It was written twenty-five years ago and is probably still ten years ahead of the medical times. Then he said, "On the whole, the parasites have been deemed of so little importance that scant notice is given them. The descriptions in most text-books on Gynecology, Microscopy, and Pathology, are inadequate or erroneous and the same is true even of some recent works on animal parasites." The latest edition of Osler and McCrae² quotes the above article. The lavish extravagance of three creditable lines admits the pathogenicity of *Lamblia*. The *Trichomonas vaginalis* is mentioned. *Chilomastix* is not mentioned. Positively, no treatment is even hinted at. Dysentery is the only criterion of the infection. Another text-book on human parasitology³ does not have the term "*Giardia*." It, however, removes the *Lamblia* from its duodenal home to the more spacious large intestine. In its compilation on *Trichomonas intestinalis*, its latest quoted article is one in German, bearing the date of 1904. This author frankly informs us that the *Lamblia intestinalis* is occasionally seen in the *normal* intestine of man. However, he waxes illuminating in the succeeding sentence by stating that it is more apt to be found in cases of diarrhoea and amœbiasis. Thus he slowly approaches an admission of their pathogenicity, but he does not allow himself to discuss treatment. Other authors in our medical journals have reported incidences of infection and have contributed both clinically and experimentally to their belief in the pathogenic power of these organisms. Fantham and Porter⁴ report the finding of *Lamblia* alone infecting 187 out of 1305 men from Gallipoli. Dysentery was a common symptom. These patients were described as weak to the slightest exertion, and showed subnormal temperatures. There was marked erosion and distortion of cells in the cases examined. The stools were noticeably abnormal and at times bloody.

In support of their clinical work, the above authors were able, experimentally, to infect eight out of ten kittens. Those infected died from the sixth to the fifty-third day after feeding on the cysts. Two of their conclusions interest us here. The first is—that *Giardia intestinalis* is pathogenic to man and can produce diarrhoea. The second is—that the virulence is a variable factor.

Recently, Wenyon⁵ has given the histological observations on five cases of *Trichomonas* and three cases of *Chilomastix*. His frank statement is that the organisms occur most frequently in diarrhœic

stools. The *Trichomonas* was found in the first three feet of the small intestine and throughout the large bowel. The *Chilomastix* involved the large bowel as well as the small. In one case the organisms were actually invading the interglandular connective tissue. He leaves the conviction that this invasion was antemortem and through the broken down goblet cells. There was a remarkably small amount of tissue reaction to these organisms.

His work proves that *Trichomonas* can invade the tissues of the intestine, but whether this is evidence of its pathogenicity requires more work. Hadley⁶ has, unquestionably, proven that the *Trichomonas* does invade the intestinal wall of turkeys.

The above references will serve to show the trend of thought in the literature of recent years toward the pathogenicity of these organisms.

We shall now consider, briefly, their incidence and something of their geographical distribution. In the examination of 2300 overseas troops, Kofoid⁷ found *Chilomastix* in 4.2 per cent and *Giardia* in 5.7 per cent. The percentage did not vary substantially in the examination of 576 home service men of U. S. Army Hospital No. 3, N. Y. City. Boulenger⁸ found the percentage of *Giardia* remarkably constant in both British and Indian troops. *Trichomonas* was more common among the Indians and *Chilomastix* predominated among the British. In North Queensland, Maplestone⁹ examined 500 healthy people of all ages at random and found *Lamblia* cysts in 11.8 per cent and *Chilomastix* in 22 per cent. His highest incidence of infection as to age was in children from one to fifteen years, which averaged better than 20 per cent for *Lamblia* cysts. It must be remembered that the above cases were not studied and consequently are of little value clinically.

Before taking up the direct consideration of my clinical report, I desire to emphasize the fact that dysentery is not the all important symptom in any chronic and heavy protozoan infection. It is often an attendant symptom, but by no means the most direct expression of the malady. Toxæmia or systemic poisoning manifested by a definite disturbance of metabolism, joints, blood forming organs, endocrine function, nervous system, psychic imbalance as well as dysentery—all make up the sum-total of chronic protozoan infection. I do not use the term, toxæmia, as is so often loosely applied to "Auto-intoxication." I mean a poisoning even more definite in its clinical aspects than any of our well recognized mineral poisons such as lead or arsenic. There is substantial clinical evidence that a toxin is entering the system from the digestive tube in these infections. The manner of its elaboration is the next and greatest problem of chemistry and biology in their relation to medicine of the near future. The whole story of bacterial action, ferments, food chemistry, metabolism, liver, pancreas, and endocrine function, is intimately involved in the complete solution of this problem. This toxin is undoubtedly a complement of other poisons from various foci of infection. It is a common observation to see very septic tonsils, or apical abscesses in

a patient with correct entero-hepatic function and no arthritis result. The reverse is often seen where the disfunction is in the digestive tube and no other attendant focal infection with no resulting arthritis. However, when the intestinal toxin is combined with the complement of focal infection, an arthritis or other metabolic imbalance of similar moment results. As the principal factors concerned are necessarily variables, so also must the end products of disease be variables. The above conception certainly gives us a clearer vision of the relation existing between seemingly very different diseases, as the arthritides, the severe anemias, the dermatoses, the neuropathies and the endocrine disfunctions.

The following report embraces 150 cases which is an incidence of 20 per cent of all patients coming under my clinical observations, during the time of their selection and study. The individual symptomatology is varied in its external expression, but the whole series is certainly one of kindred groups. In the main, the presenting symptoms of all were similar and were expressed about as follows: Extreme weakness, lassitude, loss of appetite and weight, dizziness, bad taste, gastro-intestinal dyspepsia, anæmia, rheumatism, abdominal pain and tenderness, melancholia, cerebro-cervical pain and the various forms of neuritis. So characteristic was the above symptom-complex that we were enabled during the latter part of this series to predict in which cases these protozoa would be found. I do not think I can regard any of these cases as "carriers." Each case had a routine of from three to thirty or more analyses. One or two analyses were made from the patients' normal movement. Then, wherever possible, repetition was done following a saline. The cysts were usually readily found in the first or second analysis. Active organisms usually came with the saline passage. The giardia seldom appeared motile. The chilomastix and trichomonas were most actively motile. In the most toxic cases, billions of organisms came away dead and disintegrating.

The statistics and tabulations below are compiled on the basis of these infected cases and embrace more than three thousand analyses. All stools were examined for chemical blood. Forty-four per cent showed a trace to one-plus. Twenty-five per cent showed two to three-plus. Sixty-nine per cent had blood in some form chemically. Bile was scant to absent in most cases. Those having periodic dysenteric attacks showed a clearing up of organisms when the bile flow was well established. The stool reaction was usually faintly alkaline to neutral. Fatty acid crystals were the rule in the heavily infected cases, and invariably accompanied the metabolic cases.

The blood peculiarities were especially marked in two or three respects. Anæmia below 70 per cent was present in 42 per cent of the cases. There was an eosinophilia over 2 per cent in 15 per cent. Nearly an universal mononuclear excess of from 30 per cent to 54 per cent existed. The large monos predominated.

The urinalysis was not of moment except for the frequent finding of indican. The CO₂ tension

of alveolar air was usually low. Low blood pressure is the rule, although in a few cases, particularly of Giardia infection, it ran abnormally high. Low stomach acidity was common. However, a small percentage complained of hyper-acidity. The Wassermann reaction was positive in only two cases. Prominent clinical symptoms expressed in percentage are as follows:

- (1) Severe anæmia—pernicious in type, 26%.
- (2) Disturbance of metabolism, 54%.
- (3) Arthritis—simple and multiple, 28.6%.
- (4) Arthritis—deformans in type, 9.4%.
- (5) Arthritis—of all types, 38%.
(All arthritis—deformans cases were 95% infected.)
- (6) Epilepsy—convulsions, etc., 3.3%.
- (7) Attacks of dizziness, 24.3%.
- (8) Asthma and hay fever, 4%.
- (9) Urticaria, psoriasis and pellagra, 17%.
- (10) Neuritis and neuropathies, 55.3%.
- (11) Constipation, 29.3%.
- (12) Diarrhoea, 18%.
- (13) Alternating diarrhoea and constipation, 21.3%.
- (14) No bowel disturbance, 31.3%.
- (15) Bowel tenderness—chiefly over the sigmoid, caecum and duodenum, 75.3%. (In many cases this tenderness amounted to almost a peritonitis.)

From the above it can readily be seen that if we measure toxæmia here by dysentery, only 39.3 per cent of these patients are sick. Measured by bowel tenderness, 75.3 per cent are sick; by neurology, 55.3 per cent; by arthritis, 38 per cent; by dermatoses, 17 per cent; by metabolic disturbance, 54 per cent; by constipation, 29.3 per cent; but by the combination of symptoms, 100 per cent.

The geographical disturbance of these cases covers twenty States and seven foreign countries. Because of interstate jealousies, I shall not mention the one in the lead. The age incidence is interesting and does not agree with that given in most text-books. However, this fact should not be particularly surprising. By decades it follows:

| | Cases | Percent. |
|-------------------------------------|-------|----------|
| 1 year to 9 years inclusive..... | 2 | 7.3 |
| 10 years to 19 years inclusive..... | 7 | 7.3 |
| 20 years to 29 years inclusive..... | 27 | 18 |
| 30 years to 39 years inclusive..... | 39 | 26 |
| 40 years to 49 years inclusive..... | 38 | 25.3 |
| 50 years to 59 years inclusive..... | 27 | 18 |
| 60 years and over..... | 8 | 5.3 |

It will be seen that from the twentieth to the sixtieth years are found 87 per cent of all cases. Fifty-one per cent exist between the ages of thirty and fifty years.

The low incidence in children is influenced by their being referred generally to the pediatrician. Other conclusions must be drawn concerning the aged.

This research would not be complete without the report of surgery done on the cases during their quest for health. Most of them have been bona fide attempts to cure or ameliorate this chronic symptom—complex. In all, 41.3% had been operated on previous to seeking medical aid. Rather loosely grouped, they include gynecological, 11.3%; gastro-intestinal, 28%; throat, nose and ear, 2%. The particular operations performed were as follows: Chronic mastoiditis, 1; nasal septum, 1; tonsilectomy, 1; ventral sus-

pension, 3; pelvic abscess, 1; salpingectomy, 3; ovariectomy, 4; hysterectomy, 1; herniotomy, 2; perforation and peritonitis, 7; liver abscess, 1; hemorrhoids, 2; gastro-enterostomy, 1; cholecystectomy, 6; appendectomy, 21. By far the greater per cent of this surgery has been well directed and proceeded from sound medical judgment. I am glad to add here that where mechanical stasis exists, a cure probably can never be expected until the surgical correction is made. But once an infection is well established, surgery alone will bring only partial relief, and if not done in the light of good mechanics, it would have been better not attempted. Normal emptying both in time and quantity is exceedingly necessary to a normal bowel. Partial stasis produces the only successful incubator for protozoan parasites of any type. Upon the above principle rests the ability of otherwise harmless parasites to develop substances of great pathogenic power, of long duration, and certain chronic telling effect upon the host.

The following organisms were found:

| | |
|--|-----------|
| Chilomastix mesnili was present in..... | 59 cases |
| Giardia intestinalis was present in..... | 41 cases |
| Trichomonas intestinalis was present in.. | 16 cases |
| Craigia was present in..... | 3 cases |
| Flagellates unclassified were present in.... | 13 cases |
| Mixed Chilomastix and Trichomonas..... | 7 cases |
| Mixed Chilomastix and Giardia..... | 9 cases |
| Mixed Trichomonas and Giardia..... | 2 cases |
| Total | 150 cases |

The *Blastocystis hominis* was present in thirty-four cases. It was found in every case of severe dysentery. This organism is one of the diagnostic pitfalls of the beginner in medical protozoology. The higher the magnifying power of the microscope, the deeper the pitfall.

There is very suggestive evidence that one infected person may contaminate the whole household. My series has two families undoubtedly all infected by means of a common douche tip. It is my personal impression that ordinary bathroom and toilet technic is responsible for a goodly number of infections.

I now pass to the clinical report of one case from each group whose main presenting symptoms are respectively as follows:

- (1) Dermatologic,
- (2) Neurologic,
- (3) Metabolic,
- (4) Arthritic,
- (5) Dysenteric.

DERMATOLOGIC GROUP

Mrs. A., aged 40, presented herself with the main complaint of promiscuous swellings over various parts of the body. These were of the character of an angio-neurotic oedema, with a tendency to fine papular rash. Although these areas would appear on any part of the body, their most usual location was on the hands and feet. This trouble dates back almost twenty-two years, while the patient was living in Philadelphia. Additional complaint is a highly acid stomach, with considerable bowel flatulence. There is some slight pain after eating at times, but not referable to any particular food, or to any regularity of appearance. All food seems about the same to her. There is some constipation, and on account of this the patient has been in the habit of using various large enemas. However, at times there are attacks in

which the bowels move five or six times daily. During these attacks, the patient usually feels improved. She is highly nervous and for her various complaints has had many different types and cults of treatment. She has considerable muscular soreness and attacks which she calls rheumatism. There is considerable neck soreness and she tires very easily on the slightest exertion. The bowels are tender, so that she notices ordinary jars in walking. She has always had considerable menstrual disturbance in the form of dysmenorrhoea. She had diphtheria and measles as a child. She has one child living and well, and comes from a healthy stock. Otherwise her history is not pertinent to her complaint. Her physical examination shows a blood pressure of 95-60; temperature, 98; pulse, 70; respiration, 18; her eye and knee reflexes are normal; the nares show the usual effects of a mild atrophic rhinitis; all but two of the teeth are gone; the tonsils and adenoids are in fair condition; the sense of smell is greatly diminished, but taste is normal; ears are negative. There is no cervical adenopathy. The posterior neck muscles are rigid. The chest shows some old consolidation in left apex. The heart is normal in tones. The abdominal muscles are spastic and considerable tenderness is present over the caecum and in the duodenal region. The sacrum also is very tender. There is no pelvic abnormality. The toes are reddened, swollen, and show the results of blisters as in a chronic dyshydrosis. The arches show evidence of some breakdown. The blood count is Hb 70%; Rbc, 3,600,000; poly, 59; small monos, 21; large monos, 16; Eos, 2; Bas, 2; the Wassermann reaction is negative; the CO₂ of the alveolar air is 30; urinalysis is normal except for 2 plus indican. The first stool analysis was yellow, semi-solid, considerable mucus, neutral in reaction; occasional muscle fiber; some fatty acid crystals; actively swarming bacterial flora, with the bacilli predominating. The specimen was literally loaded with giardia cysts. Later analyses show the presence of active chilomastix accompanying the giardia. The gastro intestinal X-ray shows an irritable small bowel, a freely movable and tender cecum and a spastic and very redundant sigmoid. This patient has had twenty-nine stool analyses, ranging over a period of seven months. She has had ipecac, emetin, colonic flushings and three doses of neoarsphenamin. She has gained in weight, appearance and general feeling of well being. At times the stool has been free from organisms, but her latest analysis still showed some inactive chilomastix present.

NEUROPATHIC GROUP

Mrs. B., aged 43, a housewife, comes with the main presenting symptom of being so tired that the mere "watching of her step" on the street is exhausting. She has had attacks of sore mouth and tongue for years. The general lack of energy extends to her eyes and whole body. She simply has no energy and she cannot tell whether this is mental or physical. She complains of flatulence and some abdominal tenderness, especially around the umbilicus. There is precordial anginal pain. She is also subject to joint pains. She came from West Virginia to Los Angeles, where she has resided for several years. She has never been pregnant and passed the climateric uneventfully two years ago. She has never had any other serious illness. Her physical examination reveals the following salient points: Bp. 100-80; temperature, 98.8; pulse and respiration, normal; reflexes, normal; teeth, fair; small, white mouth ulcers; chest and heart, negative; general colon tenderness; old hemorrhoidal redundancy.

The blood examination shows: Hb. 77%; Wbc. 5500; Rbc. 4,440,000; Dif.-Poly, 42%; myel, 1; Eos. 7; monos, 48%; Trans. 2; CO₂ tension, 30; Wassermann, negative; urine, negative except for indican plus.

The stool shows: Acid reaction; blood 2 plus; cocci predominating; many yeast cells and a heavy infection of inactive chilomastix.

This patient has been treated and observed for nearly two years. She has shown almost a phenomenal progress, and yet there are periodic cycles of ill-feeling, invariably accompanied by the appearance of a few organisms.

METABOLIC GROUP

Mr. C., aged 43, gives his main presenting symptoms as general muscular weakness and mental inactivity of five years' duration. Attendant symptoms are: loss of appetite, constipation, low vision, some weight loss and general ill-feeling for seven or eight years. He has had no sore mouth or tongue. He thought he had malaria in 1898, though it may have been typhoid.

While living in Kansas in 1909 he had an attack of gastroenteritis not etiologically diagnosed. In 1912 he got an infection in his right hand. In 1914 he had an osteomyelitis of the jaw. He had a mild attack of influenza in season. On January 31, 1920, he became suddenly ill and unconscious. During the next two months he weathered a double lobar pneumonia, a peritonitis and bowel paresis that necessitated a puncture to relieve gas. This was followed by an abscess which opened itself in the posterior scapular region. Good nursing, blood transfusion and earnest grit pulled this patient through so that two months later he could be diagnosed pernicious anaemia and be allowed to die at peace with the world. Up to this time all other analyses had been made, but no stool investigation whatever had been carried out.

The only salient points to his examination are: Bp, 100-65; caecal and duodenal tenderness; a pelagous appearing skin over the hands and forearms, with a CO₂ tension of 30. He has an anaemia, pernicious in type, more expressed by appearance than by blood picture, which was Hb 79%; Rbc., 3,920,000; poly, 67; monos, 30; Eos, 2; trans, 15. The stool was brown, neutral, mucus, blood 2 plus, with very heavy infection of yeast cells, inactive chilomastix and their cysts. Under treatment his weight has re-established itself and the patient has returned to his work feeling remarkably better. The latest analyses show no cysts or organisms.

ARTHRITIC GROUP

Miss D., age 40, presents the complaint of rheumatism of the joint deforming type. It began seven years ago while she resided in Denver. It has been slow but steady in progress. She thinks the beginning followed a severe cold, but is not sure that it did not go back to a severe attack of typhoid of the previous summer. The latter was accompanied by right-sided sciatica. She has had some pains in the liver region, but never any bowel cramps. There has always been severe constipation, much bowel gas and acid stomach. Course vegetables and potatoes always produce indigestion. Previous to her typhoid, she had always been well except for "nervous indigestion and billious attacks." Physical examination shows bad teeth, an old, healed right-sided apical chest dullness, a tender caecum, and severe deforming arthritis in practically all joints. She is completely confined to her bed in a doubled-up position and complains of joint pains on motion or at rest. The weight loss has been extreme. There is nothing in blood or urine of a differentiating value.

The stool is grayish, neutral, blood three plus, many fatty acid crystals, many motile spirillar organisms, and abundant active chilomastix and giardia cysts. The treatment has not been as complete as desired, but under it the pains are gone and there has been considerable return of motion. No cure of arthritis of this type could ever be expected, but its amelioration is grateful and its pre-

vention would be an epoch-making Godsend to man.

DYSENTERIC GROUP

Mrs. E., aged 35, from Minneapolis, Minnesota, comes with the main and practically only presenting symptom of a severe, watery diarrhoea, which has existed for about eight months. There is no pain or tenesmus with the movements, but considerable bowel gas. There are always several to many movements daily. This dysentery is influenced by food taking, the worst type of which is fruit. At times there is nausea, with much mouth mucus and a general feeling of anorexia and loss of strength. She tires easily on exertion and does not understand why she should be so weak. Her previous history is that of typhoid at fourteen years of age, with an appendectomy at the age of twenty. She had one miscarriage, or tubal pregnancy, which was accompanied by a pelvic operation. There has never been a subsequent conception. Her physical examination reveals only a few important points. Her blood pressure is 100-65; her abdomen is tender over the cecum, duodenum and sigmoid. There is marked flatulence over the above regions and considerable spasticity over the sigmoid at the brim of the pelvis. Her blood examination is not of importance. Her weight loss is characteristic to dysentery. The stool examination shows a grayish-yellow liquid with 2 to 4 plus blood. It is faintly alkaline, with considerable mucus, a few leukocytes, and loaded with giardia cysts, active chilomastix in abundance and probably a few *Trichomonas intestinalis*. This patient has had treatment for five months, has gained back her normal weight, has lost her dysentery, and is improved in every way. The parasites have practically disappeared from the stools. However, a 2 plus blood reaction is still present.

TREATMENT

The treatment cannot be satisfactorily carried out until a thorough knowledge of the habitat and chemistry of the organisms is understood. The *Giardia* lives principally in the duodenum, where it attaches itself by its sucking disc to the cells of the duodenal walls and glands. I have found its cysts in the amputated gall-bladder in one heavily infected case. The jejunum and ileum are undoubtedly invaded at times by the billions of organisms. Based upon this habitat, one can readily understand why a colon flushing is so futile. The chilomastix resides more or less in the lower small intestine, and very often fairly swarms in the colon. I have found it deep in the crypts of two appendices and in a loop of ileum respectively in three cases on which surgery was necessary. Wenyon⁵ found this organism deep within the crypts of Lieberkuhn and possibly invading connecting tissue. The trichomonas seems to thrive in both the large and the small bowel. Boyd¹⁰ has shown that this organism will not grow in a bile-stained suspension or one slightly acid to litmus. With the above factors in mind, the general points of treatment are better understood. There is no specific drug to be used, but a skillful combination of several is of great value, but not entirely satisfactory. The first remedy to be discussed is "Ipecac," with its active principle, emetin. Powdered ipecac is drastic and too disagreeable to be given outside of routine hospital treatment. Emetin hydrochloride in one-third to one grain doses intra-muscularly or into the vein, once or twice daily, for ten days is very helpful in any protozoan infection. Recently Bonaba¹¹ gave a trichomonas infected child of four years of age a 4 cg. dose of emetin daily on two consecutive days. There was considerable toxic shock, but he claims the organisms definitely disappeared from the stools. The double iodide of emetin in two or three grain doses at bedtime

after a light supper is very effective. Often these tablets must be broken and taken in capsules to insure solution in the bowel.

Along with ipecac, the bile salts in full doses given two or three hours after meals are of great value and are routine in my practice.

On the sixth or seventh day of the emetin treatment, in the severe cases, a course of three doses of neo-arsphenamine is begun. These doses are medium in size and usually given at about five-day intervals. In the mild cases, one dose may suffice.

Thymol in thirty to sixty grain doses, at weekly or bi-weekly intervals is of much value. This treatment should be preceded by three days of a fat-free diet. Thymol absorption and subsequent poisoning readily occur with alcohols and fats. After a brisk saline cathartic, the other lines of treatment may be continued.

Calomel in large doses followed by catharsis removes organisms for the time, but they soon reappear in the stools.

Methylen blue by the stomach has very little value. As a colon lavage in solutions of 1:1000, it is of more value. By the duodenal tube, it is helpful still more.

Turpentine by mouth in $\frac{1}{2}$ to 1 dram doses is effective as shown by Escobel,¹² but I have always been too much afraid of kidney damage to allow its use in huge doses.

In the case of the giardia and chilomastix, I have found the duodenal lavage of great value. Almost all the suggested solutions have been used. Methylen blue, oil of chenopodium, plain physiological salt solution, 33 per cent magnesium sulphate solution, and 25 per cent honey solution, are all exceedingly helpful. For the suggestion of the honey solution, I am indebted to my friend and college mate, Dr. Thomas H. Glenn, who had proven its efficiency in vitro. After the appropriate dose of above solutions has passed into the duodenum, then 500 to 1000 cc. of salt solution is allowed to follow through the duodenal tube. In a very short time the free and continued bowel movements eliminate billions of stunned or killed organisms. If this process is repeated in two to four weeks, the patient's progress will be more marked.

The treatment of the colon varies. Where the organisms swarm in the stools, there should be daily flushing of the bowels by using one or two quarts of soap-suds solution to which a dram of turpentine has been added. Of the same value is the use of a retention enema of one quart of the kerosine. This may be retained over night without any ill effects to the patient. Another good enema is one quart of a 1:3000 solution of ichthyol. I also use a small, soothing, but protozoa-destroying retention enema containing fifteen or twenty grains each of thymol iodide and camphor in two ounces of olive oil as a nightly retention. This may be repeated at intervals for a month or six weeks. When there is rectal tenesmus or hemorrhoidal trouble, I use with much success this rectal suppository containing one-half to one grain of powdered opium, three grains of pulverized calamin, and two grains of tannic acid, made up with a sufficient amount of cocoa butter. A suppository at bedtime or twice daily in the most severe cases will give great relief and promote the healing of any low ulceration.

The diet must be chosen to suit the type of case. On account of the chronic nature of these infections, no fixed diet will be tolerated by the patient. The dysentery group demands the diet of any inflammatory colitis. The arthritic and metabolic groups are all undernourished and their chief need is food. The neurologic and dermatologic groups generally require a careful search into the food

types most poorly digested. Here the stool analysis will usually tell a better and more reliable story than the patient. The vernacular "ptomaine poisoning" belongs chiefly to protozoan or other parasitic bowel disturbance and shows the periodicity common to these infections. It is at these periods that a chronic appendix, inflamed gall bladder, latent duodenal or other bowel ulcer, breaks down under the strain and an acute inflammatory process results with its attendant sequelae.

I am convinced that diet alone cannot drive these organisms from their host. They have modified the intestinal chemistry to suit their needs and consequently the host and not the organisms suffers most in our attempt to change the reaction of the bowel tract. In many cases, a diet of buttermilk and Bulgarian bacilli will kill the patient before the organisms are dead. Until our knowledge of the chemistry of foods undergoing pathologic digestion is a little understood, we must still summon to our aid a few intestinal parasitocides in ridding the system of these pathogenic organisms.

In summing up the results of this work it is found that 17 per cent of the cases were not really under treatment and are not included below. One hundred and twenty-four cases were treated from a few weeks to two years. Of this number, 66 per cent. were made definitely better under treatment. Fifteen per cent are clinically and up to the present time analytically cured. Nineteen per cent were practically unimproved, both clinically and microscopically. One great obstacle to treatment is its chronicity. Physicians as well as patients have not the required stamina and determination to work on in the face of defeat after defeat. Cheerful determination coupled with a recognition that a chronic disease is being treated must be constantly in the minds of all concerned if a cure is to be expected. Our great clinics and clinicians should not shirk their responsibility. They should accept these cases as problems even though quick and spectacular results are not demonstrable. Medical schools should train students to recognize the common protozoan parasites. Medical men should do routine analytical work to recognize mild and incipient cases and thereby fulfill our full measure of responsibility to the public in the prevention of disease.

Bibliography

1. Trichomonas as a Parasite of Man. *Geo. Dock. The American Jour. of the Med. Sci.*, Jan., 1896.
2. *The Prin. and Practice of Med.*, Osler and Mecrae. Ninth Edition, D. Appleton & Co., 1920.
3. Rivas—Human Parasitology. W. B. Saunders Co., 1920.
4. The Pathogenicity of Giardia (Lamblia) Intestinalis to Men and to Experimental Animals. H. B. Fantham and Annie Porter. *The British Med. Jour.* No. 2900, p. 139, July 29, 1916.
5. Histological Observation on the Possible Pathogenicity of Trichomonas Intestinalis and Chilomastix Mesnili, with a note on Endolimax Nana. By C. M. Wenyon. *The Jour. of Tropical Med. & Hygien.* May 15, 1920, No. 10, vol. xxiii, p. 125.
6. Invasion of Intestinal Wall of Turkeys by Trichomonas. *Jour. Med. Research*, March, 1919, by Hadley.
7. Hookworm and Amoebiasis in California. *Prof. C. A. Kupid, Calif. State Jour. of Med.*, vol. xviii, No. 9., Sept. 1920, p. 329.
8. Records of occurrence of Intest. Protozoa in British and Indian Troops in Mesopotamia. *The Indian Jour. of Med. Research*, vol. vii, No. 1, July, 1919.
9. Human Intest. Protozoa in North Queensland. by P. A. Maplestone. *Annals of Trop. Med. and Parasitology*, February 8, 1921, vol. xiv, No. 3.
10. Observations upon Trichomonas Intestinalis in Vitro, Mark F. Boyd. *Jour. of Parasitology*, March, 1919.
11. Case of Intestinal Trichomoniasis. J. Bonaba. *Archives Latino-Amer. de Pediatría*, Buenos Aires, September, October, 1920, 14, No. 5, p. 467.
12. Dr. Edmundo Escobel (de Arequipa Peru) Trichomonias Intestinal—Extracto de los Anales de la Facultad de Medicina de Montevideo, Montevideo, 1918.
13. The Flagellate Infections of the Human Digestive Tract. Chas. A. Kofoid and Olive A. Sweezy. *Nelson Loose Leaf, Living Med.*, vol. v, p. 365.

THE ETIOLOGY OF PARENCHYMATOUS NEPHRITIS

By GEORGE E. EBRIGHT, M. D., Assistant Professor of Clinical Medicine, University of California Medical School.

(Concluded from Page 369, September, 1921)

The diagnosis was advanced parenchymatous lesion of the kidneys, with marked uræmic manifestations, without edema. Certainly it can not be urged that the edema of acute nephritis is due to diminution of renal function. Neither is diminution of urinary output due to renal dysfunction, but rather is due to retention of fluid in the tissues. In view of the cases reported by Franke and the young woman reported above, it would seem that acute nephritis should be considered a general disease, the exact nature of which is unknown. It involves the general tissues of the body, but it may not involve the kidneys, although, of course, in the majority of instances it is attended with a decided involvement of the kidneys, which seem to be especially susceptible to the action of the poisons causing the general condition.

No useful object would be gained by discarding the term nephritis, which, through usage, has come to indicate the definite picture that it does; but a study of the causes of nephritis necessitates the assumption of the question as to whether or not the kidneys are of primary importance in the disease. A search for the actual causes of nephritis will undoubtedly be successfully consummated through investigations directed elsewhere in the body, instead of entirely along the line of renal function or pathology.

Concerning the etiology of nephritis, it is now generally accepted that bacterial infections play a much larger ethiological role in relation to parenchymatous kidney disturbances than was formerly believed. While exposure to cold and alcoholic excesses have been urged as a factor, they undoubtedly have no direct action upon the kidney, but rather indirectly as they may influence the occurrence of infections. This has been pointed out by Christian,⁶ who states that infections of various sorts cause most cases of acute nephritis. Infections of the upper respiratory tract, tonsillitis and severe nasal infections are probably the most common causes. The streptococci also are an important factor in acute kidney disturbances.

Ophuls⁷ states that the cause of true nephritis is continued bacterial septicæmia and the lesions in the kidneys are probably due to rapid bacteriolysis and incidental liberation of large doses of toxic material in or about the affected glomeruli. The type of nephritis described by Baehr in infectious endocarditis is not a true parenchymatous nephritis.

In eighty-one cases Hill⁸ gave tonsillitis as the cause of twenty-two cases, and in twenty-six others found that all had chronic tonsillitis. There is an interesting parallelism between the ages in which upper respiratory tract infections generally occur and the ages in which acute, subacute and chronic parenchymatous nephritis occur; especially if it be borne in mind that the exanthematous diseases, such as scarlet fever and diphtheria, present tonsillitis as an important complication. Such dis-

eases occur in early life, partly on account of their widespread dissemination and pronounced contagiousness, partly because the tonsils and lymphoid tissues of the throat undergo more or less atrophy by the age of 40, so that the tonsillitis factor in acute nephritis should wane with advancing age.

I have attempted to analyze two hundred cases of nephritis, among which twenty-six were acute parenchymatous nephritis and forty-two were subacute and chronic parenchymatous and diffused nephritis. In acute nephritis the incidence, according to age in twenty-six cases, is as follows:

TABLE I.

| Age. | No. cases. | Percentage. |
|----------|------------|-------------|
| 1 to 10 | 0 | 0 |
| 10 to 20 | 6 | 23 |
| 20 to 30 | 10 | 38 |
| 30 to 40 | 5 | 19 |
| 40 to 50 | 4 | 15 |
| 50 to 60 | 0 | 0 |
| 60 to 70 | 0 | 0 |
| 70 to 80 | 1 | 3.7 |

Over 50 per cent between the ages of 10 and 20.

Note Table I.—The one patient in the eighth decade with acute nephritis suffered a preceding tooth infection.

TABLE II.

Subacute, chronic, parenchymatous and chronic diffuse nephritis—forty-two cases:

| Age. | No. cases. | Percentage. |
|----------|------------|-------------|
| 1 to 10 | 1 | 2.3 |
| 10 to 20 | 3 | 6.9 |
| 20 to 30 | 5 | 11.5 |
| 30 to 40 | 8 | 18.4 |
| 40 to 50 | 11 | 25.3 |
| 50 to 60 | 8 | 18.4 |
| 60 to 70 | 2 | 4.6 |
| 70 to 80 | 4 | 9.2 |

In analyzing the various cases of nephritis from an etiological standpoint, difficulty was found in locating a definite etiological factor, partly due, I believe, to the fact that at the time the histories were taken, attention had not been especially directed to the possibility of upper respiratory tract infection as a factor.

TABLE III.

A tabulation showing history of previous infections in patients with parenchymatous nephritis:

| Previous Diseases. | In 26 cases of Acute Parenchymatous Nephritis. | Per cent. | In 42 cases of Subacute, Chronic Diffuse Parenchymatous Nephritis. | Per cent. |
|---------------------------|--|-----------|--|-----------|
| Malaria..... | 1 | 4.4% | 2 | 4.8 |
| Measles..... | 2 | 39.6% | 19 | 45.6 |
| Mumps..... | 3 | 22% | 10 | 24 |
| Diphtheria..... | 3 | 13.2% | 1 | 9.6 |
| Smallpox..... | 0 | 0 | 1 | 2.4 |
| Whooping Cough..... | 1 | 30.8% | 9 | 21.1 |
| Tonsillitis..... | 7 | 30.8% | 7 | 16.6 |
| Bronchitis..... | 0 | 0 | 0 | 0 |
| Pneumonia..... | 1 | 8.8% | 5 | 12 |
| Influenza..... | 1 | 30.8% | 8 | 19.2 |
| Meningitis..... | 0 | 0 | 0 | 0 |
| Tuberculosis..... | 1 | 4.4% | 3 | 7.2 |
| Head Infections..... | 0 | 0 | 0 | 0 |
| Syphilis..... | 0 | 8.8% | 6 | 14.4 |
| Gonorrhœa..... | 3 | 13.2% | 4 | 9.6 |
| Typhoid..... | 1 | 4.4% | 5 | 12 |
| Alcoholism..... | 2 | 8.8% | 9 | 21.1 |
| Chickenpox..... | 1 | 4.4% | 0 | 0 |
| Bichloride Poisoning..... | 6 | 26.4% | 4 | 9.6 |
| Rheumatism..... | 0 | 0 | 20 | 48 |
| Endocarditis..... | 0 | 0 | 22 | 48 |

However, it may be noted that the patients had previously suffered from various infectious diseases as shown in Table IV.

TABLE IV.

Incidence of previous infections in twenty-four cases of acute nephritis:

and expenditure of energy measured by the same units—of the effect of waste products of muscular activity—but these considerations have no bearing on parenchymatous nephritis, which seems to be related nearly entirely to infections, or, in a small percentage, to the inorganic corrosive poisons.

| Case No. | Malaria. | Measles. | Mumps. | Diphtheria. | Scarlet Fever. | Chickenpox. | Smallpox. | Pertussis. | Tonsilitis. | Pneumonia. | Influenza. | Tuberculosis. | Tooth Infections. | Typhoid. | Alcoholism. | Bichloride Poison. | Gas Poisoning. | Antrum Infections. | Ear Infections. | Sepsis. | Syphilis. | Total. |
|----------|----------|----------|--------|-------------|----------------|-------------|-----------|------------|-------------|------------|------------|---------------|-------------------|----------|-------------|--------------------|----------------|--------------------|-----------------|---------|-----------|--------|
| 1..... | | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | 5 |
| 2..... | | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | 4 |
| 3..... | | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | 3 |
| 4..... | | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | 9 |
| 5..... | | | | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | 2 |
| 6..... | | | | | | | | | | × | × | × | × | × | × | × | × | × | × | × | × | 1 |
| 7..... | | | | | | | | | | | × | × | × | × | × | × | × | × | × | × | × | 2 |
| 8..... | × | | | | | | × | | | × | × | × | × | × | × | × | × | × | × | × | × | 3 |
| 9..... | | | | | | | | | | | | | | | | | × | | | | | 1 |
| 10..... | | × | × | | | | | × | | | | | | | | × | | | | | | 4 |
| 11..... | | | | | | | | | | | | | | | | | | | | × | | 1 |
| 12..... | × | × | × | | | | | × | | | | | | | | | | | | | | 4 |
| 13..... | | | × | | | | | | | | | | | | | | | | | | × | 2 |
| 14..... | | × | | | | × | | × | | | | | | | | | | | | | | 3 |
| 15..... | | | | | | | | | | | | | | | | × | | | | | | 1 |
| 16..... | | | | | | | | | | | | × | | | | | | | | | | 1 |
| 17..... | | | | | | | | | | | | | | | | | | | | × | | 1 |
| 18..... | | | | | | | | | | | | | × | | | | | | | | | 1 |
| 19..... | | | | | | | | | | | × | | | | | | | | | | | 1 |
| 20..... | | × | × | | | | | | × | | | | | | | | × | | | | | 4 |
| 21..... | | | | | | | | × | | | | | | | | | | | | | | 1 |
| 22..... | | × | × | | × | | | | × | × | × | × | | | | | | | | | | 6 |
| 23..... | | | | | | | | | | | | × | | | | | | | | | | 1 |
| 24..... | | | | | | | | | | | | | | | | | | | × | | | 1 |

Of course, it does not follow that because a person with nephritis had previously suffered from syphilis, or measles, or malaria, for example, that there existed a causal relation. The occurrence of such diseases as measles and influenza in a patient can have little bearing because, in the statistics bearing on those diseases, nephritis is rare. It is interesting to note that over 30 per cent of the acute cases in Table III. had suffered from tonsilitis which, theoretically, should be fraught with greater possibilities of chronic absorption and acute exacerbations. In Hill's series of eighty-one children 20 per cent definitely followed tonsilitis and 21 per cent more showed pathological tonsils.

I freely admit that from the analysis of sixty-five cases of parenchymatous nephritis no generalization may be drawn. However, one may be justified in making a suggestion that stricter account should be taken of the occurrence of infections such as tonsilitis, inflammations of the upper respiratory tract and accessory sinuses and teeth in relation to this type of renal disturbance.

Chronic interstitial nephritis is more properly attributable to the wear and tear of life and abnormal metabolic conditions. Much may be written of the effect upon the blood vessels and kidneys of the various factors which constitute wear and tear in this sense—of the relation between the daily food intake measured in calories

In conclusion, I take the liberty of urging the consideration that the action of the poisons which cause parenchymatous nephritis act upon the tissues of the body generally, rather than upon the kidneys alone—that the kidneys are only incidentally involved, but that nevertheless, while they are very susceptible, they may escape in whole or in part, and that the symptoms of acute nephritis do not arise from the kidneys, but are the manifestations of a general intoxication.

Bibliography

1. Anders—"Practice of Medicine." Fifth edition, p. 978.
 2. Herrick—Osler's "Modern Medicine," 1909, Vol. VI, p. 103.
 3. Rose-Bradford—Allbut and Rolleston's "System of Medicine."
 4. Christian, Henry A.—Oxford Medicine, Vol. III, p. 587.
 5. Franke, M.—Ztschr. f. klin. Med., 1918, LXXXVI, 281.
 6. Christian, Henry A.—Oxford Medicine, Vol. III, p. 597.
 7. Ophuls, Wm.—Jour. A. M. A., 1915, LXV, p. 1719.
 8. Hill, L. W.—Am. Jour. Dis. Child., 1917, XIV, 267.
- 209 Post Street, San Francisco.

"Sure cures" for tuberculosis are probably as old as the disease itself, says the U. S. Public Health Service. Hypophosphites, creasote, "lymph," inhalants, serum, and the Friedman cure have all come—and gone. Just now some old devices in new forms are being acclaimed in the southwest. But—"I can't say yet what medicine cured me," said the testimonial writer. "I ain't heard from but three sure-cure companies yet an' I'm waitin' for bids from the advertising agents of two more."

CALIFORNIA'S CANCER PROBLEM

(Cancer Week, October 30 to November 5)

BY ALSON R. KILGORE, M. D., San Francisco.

California is reported to have the highest cancer mortality rate of any State in the registration area outside of New England. Our rate of over 97 per 100,000 population is nearly 25 per cent higher than the average over the country. This situation is perhaps not as bad as the figures indicate. Cancer is pre-eminently a disease of those in and past middle life, and undoubtedly California has a larger proportion of older people in the population than is found in older communities. Many who have reached the age of retirement from active life select California as a place in which to take their enjoyment. San Diego, for instance, well-known playground of the retired wealthy, has a cancer rate nearly twice as high as the average for the entire State. And for those of us who live and work in California, if our climate and the outdoor life we lead in it keep us well and able to ward off the infectious diseases of youth and young adult life, more of us have opportunity to live into middle life and beyond the so-called "cancer age."

Whatever the explanation, the California rate is very high, and that fact presents at the same time an opportunity and a duty to the medical profession—we must reduce our cancer death rate. Not much reduction can be expected from further improvement in treatment. The surgical principles for the various forms of cancer are well established. Some improvement may be expected in the use of radium and the X-ray, but the chief decrease in cancer mortality must come from education of the public about the facts of the disease. The layman must be convinced that early cancer is curable. Every cancer in its beginning is confined to one point. Entirely removed before it begins to metastasize, it is permanently cured. The layman must be taught the earliest danger signals of cancer and taught to regard them with far more apprehension than he now does a pain in the appendix region.

Bloodgood has pointed out that as popular knowledge about cancer has spread among the public from which his patients are drawn, the proportion of malignant to benign affections of the breast presenting themselves has significantly changed. Twenty years ago women came only when forced to do so by advancing, unmistakable cancer, so that 70 per cent of all breast cases were malignant and only 30 per cent benign. As the importance of early treatment of any lump in the breast has become generally known, this situation has changed. Women are coming with earlier cancers, cancers often so early that their physicians have been unable as yet to make a positive diagnosis, and many more have come with benign tumors for diagnosis, so that now the proportion is reversed. About 60 per cent of breast lesions in his clinic are benign and only 40 per cent malignant. Whereas in the earlier years of the clinic, it was rare to see a breast cancer before axillary metastasis had occurred, now over 20 per cent of the cases of highly malignant scirrhous and medullary cancers are operated before the axillary glands show involvement. Over 60 per cent of these early cases are permanently cured.

For comparison, inquiry has been made into this ratio at the University of California Hospital. During the past few years at that clinic, 65 per cent of the breast lesions have been cancer and 35 per cent benign. If this comparison is worth anything, therefore, California stands in the matter of public knowledge about cancer where certain eastern communities stood fifteen or twenty years ago. And we have a definite task to perform in educating the California public so that we, too, shall treat our cancer patients earlier and have opportunity to treat more pre-cancerous lesions of the breast before they undergo malignant change.

The American society for the control of cancer exists for exactly this purpose. Its work was largely suspended, like many other such activities, during the war, but its organization for an intensive campaign of public education about cancer is now being rapidly completed.

From October 30 to November 5 of this year, the society plans a nation-wide intensive campaign of publicity. Every possible means of reaching the public with the facts of cancer will be utilized, and this campaign will be a success to just the extent that it receives the support of the medical profession, and the cancer society offers no apology for asking this support. Every physician can at least see that his patients are instructed. Brief pamphlets especially prepared for the lay reader will be sent to individuals on request from the office of the society at 25 west forty-fifth Street, New York. Quantities of these pamphlets may be secured at cost of printing by physicians for mailing to lists of their patients. No better method of cancer education exists, for the endorsement of a physician in whom a patient has confidence will secure attention not equaled by any other method of presentation.

During cancer week the aim will be to present as simply as possible the essential facts about the nature of cancer—to urge that it is a curable disease, but curable only if treated early; and to emphasize the few most important early danger signs:

1. The black elevated mole which gives rise to melanotic tumors, should be removed to protect against cancer.

2. The unhealed crack, or sore, or pimple on the lips or in the mouth, should not be allowed to go without attention longer than three weeks.

3. The horny wart on the face or hands of elderly people, better removed before change occurs, but certainly immediately on the slightest increase in size or change in character.

4. Any lump in the breast. Not all lumps are cancer, but even expert physicians cannot always tell by examination which are cancer and which benign. It should be especially urged that *early breast cancers are usually painless* and that to wait for pain is to wait for incurability.

5. Chronic and persistent indigestion may mean gastric ulcer, sometimes the forerunner of cancer.

6. Irregular bleeding or unusual discharge, especially near and after the menopause, calls urgently for careful examination.

7. Bleeding from the bowel may be due to hemorrhoids, but it may be due to cancer of the bowel. Careful, thorough examination is the only way to tell which is present.

CHRONIC LESIONS OF THE LOWER LIP*

By EDWIN I. BARTLETT, M. D., San Francisco.
From the Division of Surgical Pathology, Department of Surgery, University of California.

Lesions of the epithelium of the lower lip may be divided into three groups: (1) congenital, (2) acute, (3) chronic. With the congenital lesions we are not concerned in this paper, unless they take on changes such as ulceration or sudden growth. Acute lesions do not cause concern, because they yield to medical treatment and are all cleared up in a few days. By chronic lesions is meant any lesion with a duration of one month or more. According to Bloodgood,¹ any lesion that is chronic is a cancer possibility; therefore, our discussion has to do with lesions that are cancerous or that have strong cancerous possibilities.

The mortality of carcinoma of the lower lip should be lower than the mortality of carcinoma anywhere else in the body, because early removal of the carcinomatous growth with a narrow margin of healthy tissue yields 100 per cent cures.² Any lesion on the lip is recognizable almost from its beginning, because of its position on an exposed portion of the body. Theoretically there should be no mortality in carcinoma of the lower lip, while in fact, many individuals die of this curable disease.

These facts are well known and a great deal has been written about early recognition and early operation. In spite of these contributions, valuable time is lost and cases progress to the hopeless stage through the employment of preliminary treatment with salves, X-rays, radium, and etc. Finally, after the lip has been operated, additional time is lost waiting for the metastatic glands to show sufficient size or hardness to satisfy the physician that they are metastatic. This delay and neglect in treating the lip lesion may be traceable in many cases to failure on the part of the patient to come early to the surgeon, or to many other causes over which the surgeon has no control. In the matter of the gland operation, the whole responsibility usually rests upon the surgeon and the only factor over which he has no control is the refusal of the patient to submit to operation.

The evidence that medical men are sometimes responsible for delay has led me to attempt an investigation of the reasons. There seem to be two main reasons, namely, a feeling that the neck operation is not necessary excepting in cases with clinically definite metastases, or with rather large or exceptionally hard glands beneath the chin; and a hesitancy towards subjecting the patient to a severe, extensive and mutilating operation with but little hope of a cure. It is the opinion of some physicians that many cases of carcinoma of the lip do not develop metastases. They are strengthened in their opinion by the statistics of Bloodgood (37%)³ and Mayo (23.38%),⁴ which show a very low percentage of secondary gland involvement. Furthermore, many of the reported

operations for neck glands have been very extensive or very limited, and have yielded negative results, because the incomplete dissection only served to stir up the growth, or the condition was so advanced as to preclude any hope of cure, even with the most extensive surgery.

The great difficulty, therefore, is that there is no common understanding among us as to the proper indication for the neck dissection; and if we are not going to do routine gland dissection in every case of cancer of the lip, then it is imperative that we carefully study out and determine upon some definite criteria which will enable us to properly select cases suitable for a neck dissection.

Classification: Various classifications of chronic lesions of the lower lip have been given to us by students of this condition. The best known, those of Bloodgood and Mayo, are as follows:

Bloodgood⁵: 1. Benign. 2. Precancerous. 3. Malignant wart. 4. Cancer.

Mayo⁶: I. Benign. 2. Precancerous. 3. Cancerous. 1. High degree of differentiation, 75 per cent. II. Moderate degree of differentiation, 50 per cent. III. Slight differentiation, 25 per cent. IV. No differentiation.

Bloodgood's classification, while based upon the pathological picture, is practically a clinical classification based upon the stage in which the disease is found. The reason for this unusual way of grouping is, that the type of treatment is determined by the stage in which the disease is found; that is, the stage of the disease determines the condition of the lymphatic glands that drain the area and, therefore, indicates the need or not of gland dissection. At one time, Bloodgood did a neck dissection in every case that showed any malignant change, but more recently he has pointed out that the malignant wart or very earliest cancerous change never has shown metastases, and consequently he has abandoned the neck dissection in the malignant wart.

These rules of treatment laid down by Bloodgood have never been questioned by those in a position to judge. Broders,⁷ however, in reviewing the great mass of statistics of the Mayo Clinic, has come upon some interesting statistics in regard to cell differentiation; and with these figures he attempts to show that the prognosis depends somewhat upon the amount of differentiation. He has considered these findings in conjunction with the size of the lesion and the duration, and etc., but not from the standpoint of the stage of the disease which is, after all, the determining factor as far as liability to metastases is concerned. Moreover, his classification has been made on past statistics, and has not been used to determine the surgical procedure. It has seemed to us, therefore, that we cannot drop the study of the stage of the disease as our criterion for treatment, and if we are to use the differentiation of cells at all, it can be used to advantage, mainly, in the group of cases in which the stage of the disease is doubtful, that is, the very next stage beyond the malignant wart. To this end we have expanded our classification, which is based upon the stage

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

of the disease to include cell differentiation, and with our limited statistics have endeavored to make a sort of preliminary report of our findings. Our ** classification is as follows:

1. Clinically benign.
2. Precancerous (clinically doubtful).
3. Cancerous (clinically doubtful or clinically cancerous).
 - a. Malignant wart (very early).
 - b. Fully developed, not infiltrating muscle.
 - (1) High degree of differentiation.
 - (2) Moderate degree of differentiation.
 - (3) No differentiation.
 - c. Fully developed, infiltrating muscle.
 - d. Advanced (usually hopeless).

We have adopted the phenomenon of muscle infiltration arbitrarily, and not on the basis of any proof that muscle infiltration is significant, but because it does show us that the disease is no longer superficial, and perhaps the dissemination is more sure and more rapid, when the cancer cells are among the muscle bundles, where they are constantly massaged. We have not considered cell differentiation as a determining factor in treatment of tumors infiltrating muscle, because we believe that the fact of muscle infiltration is sufficient evidence of the degree of malignancy.

Diagnosis—Clinically benign lesions: To repeat, any lesion lacking the usual marks of malignancy, which has persisted for one month, in spite of palliative treatment should be considered as having malignant possibilities.⁸ Among these lesions of more than one month duration, a large majority are proved to be benign, when examined under the microscope; clinically, however, they are not benign, because they are chronic. Without the aid of the microscope, therefore, the only lesions of the lower lip, which can be diagnosed clinically as benign, are the acute lesions.

Precancerous (Fig. I and II)—From the clinical standpoint, this group includes all lesions which have persisted for one month in spite of palliative treatment, and which have not developed or failed to show the usual clinical signs of malignant change. That is, a wart, a scab, or an ulcer, which does not show induration about the edges or base, or which does not show an irregular rodent border, cannot be properly classified clinically among the malignant conditions even though there is considerable glandular enlargement. (Fig. III) The term, therefore, is a clinical expression, but the diagnosis of precancerous lesions, that is, the proof that the lesions are benign, is entirely a matter of microscopic study.

Malignant wart (Fig. II)—This group includes lesions, all of which are chronic, and some of which show the clinical picture of malignant change, such as induration or deep ulceration, and which, under the microscope, shows the very earliest evidence of malignancy. That is, as Bloodgood points out,⁹ there is a definite change at the tips of some of the papillary downgrowths from the normal relationship between the supporting connective tissue frame-work and the epithelial cells. The basal layer cannot be identified as such, and the large squamous or prickle type

of cell is in direct contact with the supporting connective tissue.

Fully developed, not infiltrating muscle—In this group the clinical picture of chronicity and induration is practically always present, while the pathological picture shows all gradations from beginning infiltration of the underlying connective tissue to a fully developed, but quite restricted cancer. Here are included only those cancers where there is a demonstrable margin of connective tissue between the farthest downgrowth of epithelial cells and the underlying muscle. The presence or absence of glandular swelling in the neck has no bearing on the diagnosis or the immediate treatment.

(Fully developed and infiltrating muscle) (Fig. III)—The lesions in this group are invariably diagnosed clinically as malignant. Pathologically, we include all fully developed cancers (excepting the recurrent or the very extensive cases), which show an infiltration of the tumor cells into the underlying muscle, or which show such a close relationship with the underlying muscle layer that there is no margin of connective tissue left between the tumor and the muscle. The neck glands in the submental or submaxillary regions may be palpable, but the presence of large clinically demonstrable metastatic glands would exclude the lesion from this group. The microscope may or may not show cancerous infiltration of the glands.

Very advanced—This group includes all cases that are clinically advanced, that is, lesions involving the whole of the lip, all cases of definitely clinically metastatic glands, all cases of recurrence.

Treatment: Clinically benign lesions, that is, ulcers, scabs, cracks, etc., which do not clear up readily, but which have not been present long enough to be classified as chronic, should be treated palliatively and not surgically.† Very soothing applications only should be used, because it has been repeatedly demonstrated that these lesions will heal more quickly and surely when protected and when kept covered with white vaseline, than when treated with irritants and cautery. Moreover, there is room for suspicion that irritants, such as silver nitrate, X-ray exposures, and caustics, oftentimes lead to the development of cancer.¹⁰ A very high percentage of cases of cancer of the lip give a previous history of caustics, usually silver nitrate, and many of the patients volunteer the statement that the change for the worse took place at the time of the beginning of the caustic treatment. Of all the soothing applications that we have, none seem to be so efficacious as plain white vaseline, copiously applied. If such lesions fail to heal by the end

† We are inclined to look upon untreated lesions of one month's duration without induration or lacking other changes suggestive of malignancy as most likely benign, and frequently delay two to three weeks while the lesion is being treated with mild salves. If there is not a decided change for the better, surgery is resorted to without delay. Every lip case has a Wassermann blood test. If the test is positive, antiluetic treatment is started immediately. If there is not a practically complete disappearance of the lesion by the end of seven to ten days following administration of arsenamine and mercury, the lesion is considered as not luetic, and surgery is employed.

**Surgical Pathological Laboratory, University of California.

of one month, then they belong in the precancerous group, and surgery is required.

Precancerous and malignant lesions, as has been pointed out before, are not distinguishable clinically, except where the malignancy is advanced. Thus cases which fail to meet the requirements for the clinically acute, fall into these groups and all require surgery, regardless of the clinical findings.

Taking into consideration first the doubtful or the very small fully developed carcinomata, our plan of procedure is as follows: A "V" as described by Bloodgood or a rectangular piece as advocated by the Mayo Clinic, is taken which includes the lesion, and at least half a centimeter of healthy tissue on all sides, the amount of margin depending upon the size of the lesions. If a "V" is taken, the point should extend well



Fig. I.—Precancerous. Note extensive papillary downgrowth. Basal cell layer everywhere preserved. Round-celled reaction, mild. Compare with Figure II. (Path. No. 1946.)

down onto the chin, because a blunt "V" has a tendency to leave a notched lip. The depth of the "V" should be considerably greater than the breadth (Fig. III). The cut edges are united by very fine silk sutures, taken well back from the margin and passing through the skin, muscle, and mucous membrane. These are tied loosely, but with sufficient tension to assure proximation of the cut muscle surface. As a rule, not over three of these deep sutures are required. In addition, the skin is very carefully approximated by means of a number of superficial, very fine silk sutures. No attempt is made to carefully approximate the mucous membrane edges, because the scars of the mucous membrane are not mutilating, because the additional suture material, especially in the mouth, adds to infection and,

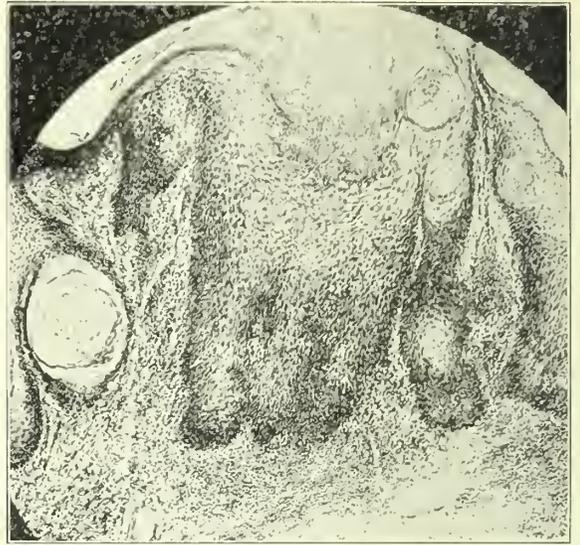


Fig. II.—Malignant wart. Note intense round celled reaction. Differs from Fig. I in that cells at tips of papillary downgrowths have lost their basal characteristics. (Path. No. 1946.)



Fig. III.—Infiltrating muscle. Duration 3½ months. 50% differentiation (Broders' Group II). Practically no induration. Diagram showing margin given in "V" excision. Primary neck dissection showed no metastases.

lastly, because the mucous membrane unites kindly and quickly without the careful approximation necessary in the skin. Tension is taken off from the sutures by means of a "butterfly" adhesive appliance. Upon examination of the microscopic sections and the discovery of a benign condition, the patient is told that his condition was not cancer, and that he is cured.

Cancerous—1. *Malignant Wart*: The "V" is taken as in the preceding type, and upon examining the tissue under the microscope the patient is informed that he is cured. No gland dissection is done in this group even though there

are palpable glands beneath the chin. The gland dissection is omitted, because from statistical studies (Bloodgood's and our own), none of these cases have shown metastatic glands in the few instances where these glands have been removed and, as far as we can determine, none of these patients have afterwards developed carcinomatous glands.

2. *Fully developed, not infiltrating muscle*—Since most of these lesions are small, the most common type of local operation is the "V." In the examination of these specimens, the two important points for consideration are the relationship with the muscle layer and the degree of differentiation. If the muscle layer is not invaded and there is a high degree of differentiation, the patient is told that he is probably cured, but that he will have to be kept under close observation, and must report regularly at intervals of three months for at least a year and a half. If, at the time of operation, there are enlarged glands under the chin and they have not definitely disappeared by the time of the first visit (three months), the patient is advised to have the neck dissection done. If there is very little or no differentiation of cells in the new growth, the patient is advised to have immediate gland dissection, that is, within a week or two. Two cases out of four in this class had neck dissection immediately following the lip operation. A complete dissection of the submental triangle and one or both submaxillary triangles was done. Neither had the deep cervical chain disturbed, because none of the glands at operation gave any gross evidence of involvement; neither had microscopic cancer in the glands removed. The other two cases did not have neck dissection. One case showed no differentiation of cells; the other three showed 75 per cent differentiation. One showed enlargement, clinically, of the glands. This was the one without differentiation, and one of the two that had neck dissection.

Fully Developed, Infiltrating Muscle—Since practically every one of these cases is looked upon clinically as cancer, the patient is told that he will undoubtedly have to have a neck dissection, but that it is safe to wait until the pathological report is made. Within a few days or a week after the primary lip operation, all of these cases are now submitted to gland dissection, that is, the submental and one or both submaxillary triangles are dissected. This rule is being followed out regardless of differentiation.

In the past, twelve of our cases (40 per cent) had palpable glands beneath the jaw. Ten had primary neck dissection, but only one of these showed microscopic cancer in the glands. One of the two remaining cases came back a few months later with larger glands than at the first operation; a neck dissection was done and gross and microscopic cancer was found. This patient is living and well today, two years after the neck operation. The other case refused the neck dissection and died of pneumonia two and one-half years later, without further enlargement of the glands or other evidence of neck involvement.

According to Broders' classification, the ten with primary neck dissection were grouped as follows: Group I—Four cases; Group II—Two cases; Group III—Four cases; Group IV—No cases. One case in Group III that showed practically no differentiation is living, and without evidence of gland involvement two years since operation. Of the two without primary operation, the one with secondary neck dissection, because of gland metastases, belonged to Group III, and the one which refused the neck dissection belonged to Group II.

The neck dissection in all instances was a complete cleaning out in one block of the submental triangle with one or both submaxillary triangles.

The remaining sixteen cases out of twenty-eight in the group showing muscle infiltration, either had no palpable glands in the neck or no record was made of the glands. Two of the sixteen had primary neck dissection and no cancer was found, microscopically. One had a secondary dissection, because of gland enlargement and local recurrence. Fourteen did not have neck dissection. The two cases with primary dissection are well, and without recurrence nine months and one year, respectively. The one with secondary neck operation and secondary local excision has been lost. Of the thirteen cases without neck dissection, one is well one year since operation, two are well two years since operation, and one well four years since operation.

In this group of sixteen without palpable glands, the grouping according to Broders is as follows:

Group I—9 cases: Five cases heard from and well, from one to five and one-half years since operation; none of these had a primary neck operation.

Group II—3 cases: Two cases heard from and well; one without primary neck well, four and one-third years since operation; one with primary neck operation, well nine months since operation.

Group III—3 cases: One case heard from and well one year since operation. This case had primary neck operation; the other did not have primary neck operation.

Group IV—1 case: This case did not have primary neck operation, and has been lost.

In other words a statistical study of this group showing muscle infiltration, reveals the following interesting facts. Of all cases, regardless of enlargement of glands, 3.5 per cent will show metastatic cancer in the glands removed at the primary neck operation. Of the cases in which palpable glands are found beneath the chin, 17 per cent will show metastatic cancer in the glands at the primary operation, or develop neck metastases later if the primary neck operation is omitted. Six per cent of the cases without enlarged glands beneath the chin will subsequently develop metastatic glands if the primary neck dissection is not done. This means that a man with a cancer of the lip in which infiltration of muscle can be demonstrated, has nine chances out of ten of escaping further trouble if only the local operation is done. If he has enlarged glands, he has a little better than eight chances out of ten of

§ Personal communication from Broders places this case in Group III.

escaping without further trouble, if he has a primary neck operation; and five chances out of ten of escaping, if he does not have a primary neck operation. Our studies neither prove nor disprove Broders' contention, because his group, showing 75 per cent differentiation, gave us one case that showed cancer in the glands at the primary dissection. His group that shows 50 per cent differentiation gives us one case that developed metastatic glands secondarily in spite of the fact that he did not have palpable glands at the time of the lip operation. His group showing 25 per cent differentiation, gives us one case that subsequently had to return for neck dissection, because of enlarging glands. This case showed metastatic cancer, and since the glands were enlarged at the time of the lip operation, metastatic cancer might have been discovered at that time had a primary dissection been done. His Group IV furnishes us with two cases. One case was lost and may have died of cancer,[§] but the other case was well after two years.

When we contrast these findings with the relative infrequency of fully developed cancer that does not infiltrate muscle, and the absolute freedom from recurrence, and the absence of metastases at the primary operation in that group, we feel justified in concluding that the chances for an absolute cure by the local lip operation only, when the muscle is infiltrated, are altogether too uncertain, and that the neck operation should be done in every case.

Advanced: Since all of these cases show rather extensive lesions and many show glands beneath the jaw, which are either clinically doubtful or clinically quite definitely cancer, the local lip lesion is invariably removed in a rectangular piece, and a minor or extensive plastic is done to restore the lower lip. In most instances the neck dissection is done at the same time, but in the few cases a few days are allowed to elapse to give opportunity for the patient to react from the anesthetic and operation, and then the neck dissection is done without considering the pathological picture. The neck dissection is started by cleaning out the submaxillary and the submental triangles. If cancerous glands in the gross are encountered during the dissection, or the glands are clinically malignant, then the whole of the deep cervical chain on the side of the involvement is removed. Our cases in this group, number four. One case refused neck dissection and is well today, two and one half years after operation. One was not given neck dissection, reason unknown. Two had dissection of the superficial triangles only in face of the fact that there were clinically involved glands in the superficial triangles. One of these two had a thorough dissection of both submaxillary and the submental triangles. Both are dead. Both belonged to Broders' Group III. (Under this division we have not included any cases that came to us on account of recurrence.)

The Gland Operation: Epithelioma of the lower lip metastasizes to the superficial chains, that is, to the glands lying on the external sur-

face of the floor of the mouth. Involvement of the glands of the deep cervical chain is accomplished only secondarily by infiltration through the superficial chains. In other words no primary metastases from carcinoma of the lip are below the level of the posterior belly of the digastric muscle.[‡] If this be true then the removal of the primary glands calls for a complete cleaning out of all gland-bearing tissue within the submental and the submaxillary triangles. By gland-bearing tissue is meant every scrap of tissue including vessels, nerves, salivary glands, etc., between the platysma on the outside, and the muscles of the floor of the mouth below. The only structures that are preserved are the hypoglossal nerve, where it crosses the floor at the hyoid cornu, and the lingual nerve, where it enters the triangle at the extreme upper edge at the posterior border of the mylohyoid muscle.

In secondary gland involvement, the metastases, almost without exception, take place in the glands along the upper portion of the jugular vein, but sometimes may appear in the subparotid group first. Obviously, there is no indication for disturbance of the deep group unless there is strong evidence at operation of involvement of the superficial chains. In case, however, of proper indications the deep cervical dissection should be done in one block, that is, all the gland-bearing tissue of the side of the neck in the rectangle formed by the thyroid muscles medially, the jaw ramus superiorly, the trapezius posteriorly and the clavical inferiorly should be taken in one piece. The roof to this space is the platysma and the floor, the deep muscles of the neck. With this gland-bearing tissue should be included the sternomastoid and the omohyoid muscles, the posterior belly of the digastric, the internal and external jugular veins, the external carotid artery, the lower pole of the parotid gland, and all the nerves except the vagus, the phrenic, and the spinal accessory. Any procedure less complete than this is inadequate, and is as little likely to give results as the removal of a part of a lymphatic chain for metastatic involvement anywhere else in the body. The lowest gland,¹¹ as has been repeatedly pointed out, is below the level of the omohyoid, and the highest lies buried in the lower pole of the parotid. The jugular glands lie in the sheath of the vein, and in case of metastatic involvement the vein wall is very early invaded.

We have proof that there is an appreciable delay between the initial metastatic invasion of the deep cervical chain and the passage of the metastatic cells beyond the lowest gland of the deep cervical chain. Therefore, all hope is not lost, when it becomes necessary to do a deep cervical dissection. Our failures have not been so often from internal metastases, as from failure to do complete chain removal, and especially is this true in the neck.

Mutilation is a bug-bear. In the first place the consideration of such a possibility should never be entertained by the surgeon, and if he cannot

[‡]Very few cases have been cited where an epithelioma at the angle of the mouth has apparently metastasized to the subparotid group.

submerge this factor he is unfit to treat surgically malignant disease. In the second place there need be no mutilation resulting from either the superficial or deep-neck dissection. From the unilateral dissection there may be a slight asymmetry, while in the bilateral there is only the scar, which should be a line.

Summary: 1. Many cases of carcinoma of the lip are lost through failure to do the gland operation or through delay in doing the gland operation.

2. Failure or delay in gland operation is due to lack of definite understanding as to which cases need a neck dissection and which do not.

3. Classification for practical purposes must be based upon the stage of the disease.

4. Diagnosis must be based upon pathological studies.

5. Treatment must be based upon definite knowledge of the stage of the disease, as determined by the pathological studies of the primary lesion.

6. Gland dissection must be carried out by triangles, and no partial dissection of the triangles should be done.

7. Gland dissection should be done in every case of fully developed carcinoma, with possible exception of a few highly differentiated tumors, which are sufficiently restricted in their local growth as to fail to show muscle infiltration.

8. The extent of the neck dissection must be sufficient to take in all involved chains, and in case of superficial triangle involvement must include the deep chains.

9. There is no resulting mutilation from neck dissection.

BIBLIOGRAPHY

- I. J. C. Bloodgood—Carcinoma of the Lower Lip; Its Diagnosis and Treatment. *Surg., Gyn. & Obst.*, April, 1914, pp. 410-415.
- II. *Ibid.*, p. 406.
- III. *Ibid.*, p. 418.
- IV. A. C. Broders—Squamous Cell Carcinoma of the Lip. *J. A. M. A.*, No. 10, Vol. 71, p. 656.
- V. J. C. Bloodgood—See *Bibl.*, No. I, p. 410.
- VI. A. C. Broders—See *Bibl.*, No. IV, p. 414.
- VII. *Ibid.*, p. 656.
- VIII. J. C. Bloodgood—See *Bibl.*, No. I, p. 415.
- IX. *Ibid.*, p. 414.
- X. *Ibid.*, p. 419.
- XI. Keene's Surgery, Vol. VI, p. 411.

**THE MOTAIS OPERATION FOR PTOSIS
REPORT OF SIX OPERATIONS**

By ROBERIC O'CONNOR, M. D., Oakland, Cal.

In my opinion this should always be the operation of choice where any power of upward rotation, no matter how small, of the globe is retained. Case I proves this.

There is no need before this section to go into detail as regards the technic of the operation. In this connection I wish to emphasize that this operation gives the closest possible approach to the normal associated action of the superior rectus and lid elevator.

The technic is covered so fully in Beard's Ophthalmic Surgery that it would be a waste of time for me to repeat it. In his summary on pages 247-250 he mentions having done the operation sixteen times and states, "The results in all of them are far and away the best I have ever obtained in this affection. The manner in which the free border of the lid keeps out of the way



Figure 1 (a)—Before operation. Note absence of corneal light reflex.



Figure II.—Right eye was same as left before operation.



Figure III.—Left eye was same as right before operation.



Figure I (6)—After operation. Corneal light reflex present.



Figure IV (6)—After operation, in attempt to look upward.



Figure IV (a)—Before operation, in attempt to look upward.

of the pupil, as the subject looks farther and farther upward is truly beautiful to contemplate." Further along he says again, "No matter how little there is (of upward rotation), the Motais operation is the one, in my opinion, that should be chosen. After the lid is once raised, the superior rectus develops more and more its proper function. Herein lies the explanation of a unique and most gratifying feature of the Motais method, viz., the constantly increasing enhancement of the effect for weeks and even months after the operation."

These quotations leave little to be said, except to report the results in my six operations.

CASE REPORTS

Case 1. Miss M. B., age 25, presented a complete ptosis of left lid, the result of falling on a button-hook in her third year. There was also a downward displacement of the globe. Upward rotation only 20 degrees as compared with 40 in the other eye. With the idea of increasing upward rotation, as preparatory to a Motais, two preliminary operations were done—a shortening of the superior rectus and a lengthening of the inferior rectus. After these vertical rotations were practiced for three months, by which time the upward rotation had reached 35 degrees. The Motais was done on May 20, 1919, without much trouble. The result was excellent, the pupil being uncovered even in extreme upward rotation. The brow, which was very high, gradually came down, finally nearly to same level as the other. This case had had two operations which must have been merely skin excisions, so that the lid hung from the brow like a curtain. This patient was shown at the 1919 meeting of the Pacific Coast Oto-Ophthalmological Society.

Case 2. J. J., age 6 years. Congenital ptosis of left lid. Upward rotation of globe normal. There is also a convergent squint. Motais on December 8, 1919, without trouble. Healing uneventful. One year later the excellent result was maintained, the pupil remaining uncovered even in far upward rotation. In primary position the lid aperture is only one-half millimeter less than that of the good eye. The convergent squint has practically disappeared. Fig. 1 (a and b).

Case 3. Mrs. H. S., a music teacher, who desired the operation for cosmetic effect. The drooping of right lid had been gradually increasing for fifteen years and now the aperture is only one-half that of the other side, even less when tired locally or generally. Motais done February 2, 1920, without trouble and with uneventful healing. On June 2, 1920, the palpebral aperture was 9.5 as compared with 10 millimeters in the good side—9 in extreme upward rotation.

Case 4. A. P., age 6 years. A case of bilateral hereditary ptosis with reversed epicanthus (lower lid overlaps upper) and convergent squint. The case is similar to Case 5 (whose picture accompanies this paper), only the deformity is much worse. I was unable to secure a picture of this little girl. The Motais was done on September 2, 1920, without trouble, and healing was uneventful. The usual effect was secured, namely an uncovered pupil even in upward rotation, while before operation she had to throw the head far back in order to see under the lid margin. Fig. 2.

Case 5. F. R., age 4. As stated above is similar to 4, only not so bad and no heredity. This case had had an operation on each lid by another ophthalmologist and also one on the nasal bridge for the epicanthal deformity. All were failures according to the mother's statement. I think no attempt should be made to correct the epicanthus till maturity as the growth of nasal

bridge lessens it. This deformity in the father of Case 4 was hardly noticeable. Upward rotation of globes normal. Motais November 12, 1920. This case must have had the cornea injured during the operation, for he developed a large ulcer near upper border with hypopyon. This, however, cleared up and is hidden by the upper lid. The pupil remains uncovered even in upward rotation, as shown by the picture. The contrast in the two sides gives the before and after appearance. Fig. 3.

Case 6. L. N., age 6 years. In this case the ptosis was the result of injury when three years of age. At that time she fell on a penholder which penetrated the orbit between the globe and upper wall. It broke into many pieces, several of which were removed by a general surgeon immediately after the injury. Several weeks later the proptosis remaining, she was brought to me, and study of the case showed a large fragment in the apex of the orbit. This at operation was found firmly set in the optic foramen and was removed. Of course the eye was permanently blinded. Motais was done on February 24, 1921, without trouble. In this case instead of pulling the upper lid down to the lower to protect cornea, I pulled the lower lid up. This, I think, is the cause of a slight overeffect, causing about a two millimeter opening during sleep. Outside of this there was no trouble, the aperture is equal to that of the other eye, even in upward rotation, while before operation it was three millimeters less. During the three years' time the blind eye diverged widely, to correct which I shortened the internus on April 25, 1921, the result of which is, at this date, uncertain. Fig. 4 (a and b).

NOTES ON PRE-NATAL CARE

From the Fresno Clinical Group, Fresno, Cal.
By G. CARL H. MCPHEETERS, M. D., Fresno, Cal.

It is a frequent occurrence in the daily practice of most physicians to hear women express their reluctance to bear children. Usually one or two of the following reasons are expressed:

Fear that child-bearing will

1. Spoil the figure.
2. Undermine the general health.
3. Keep them at home for nearly a year.
4. Interfere with their work outside the home.
5. Interfere with their social pleasures.
6. That they might not receive proper care during pregnancy, confinement and the puerperium.
7. It is also commonly said, "We cannot afford any children."

In the minds of many American women these constitute real excuses. The actual underlying reason is the tardy development of Obstetrics as the practice of medicine. Although the oldest of the branches of medicine, Obstetrics is still as little developed among the profession in general as psychiatry, radium therapy and others of the newest branches of medicine.

To overcome the excuses of the childless, physicians should develop the art of Obstetrics to a point where it at least has more to offer her than mere midwifery. It too frequently happens the very minimum of service is rendered in Obstetrics, so little in fact, that not only the patient, but her relatives and friends, are often anxious about the outcome of her confinement, and fearful to undertake a pregnancy themselves. There is an increasing number of women, even the wives of the poor, who will make every effort to meet

the increased cost of intelligent pre-natal and post-partum care in addition to qualified services at confinement. Many physicians feel that fees for Obstetrics are inadequate and that the service should be as well paid as is surgery. Before this is warranted, our obstetrical practice must be advanced to a point comparable to modern surgery in efficiency.

An increased fee should be the very least of all reasons for advocating better Obstetrics. However, it is the one too often cited by physicians as an excuse for mediocre service to pregnant patients. Better babies, more numerous babies, better mothers, increased longevity, and decreased morbidity and mortality during pregnancy, childbirth, the puerperium and after-life are the prime and compelling reasons for better Obstetrics.

As an evidence of the slow development of the art of Obstetrics, attention is invited to the method of podalic version advanced by Irving W. Potter. This is the only new thing in Obstetrics since the development of chloroform anesthesia in confinement.

It is in the matter of pre-natal care that Obstetrics differs most widely from midwifery. The average midwife cannot tell the pregnant patient any more than her own mother, married sister or friend has already told her about caring for herself during gestation. The day has not yet gone by when the physician's advice regarding pre-natal care consists in obtaining the name and address of his patient, ascertaining whether she has previously borne a child or not, and telling her to go home and take care of herself until labor pains begin. Too often the physician even forgets all about the woman until the confinement call comes.

Let us now examine the excuses of our childless women in the light of pre-natal care and consider some of the essential features of pre-natal care.

Fear that child-bearing will spoil the figure. This reason is frequently given by younger married women, especially those who come from more refined homes and who are active in out-door sports and social activities. They point with pity to their own mothers, sisters or friends whose figure-profiles are hopelessly changed by child-bearing. Their reasons are facts in many cases. Unless we can bring forward adequate means to protect the abdomen and breasts during pregnancy and lactation, so that they may retain their elasticity and contour afterwards, we shall fail in our duty.

Belief is quite general among physicians and midwives, as well as the public, that the pregnant woman should not wear a corset. In consequence many of them go to term without any abdominal support. They usually experience extreme abdominal distention, multiple striæ formation, back-ache, groin pains, diastasis of recti muscles, bladder embarrassment and constipation, and become practically bedridden near term.

The pregnant woman should not long continue to wear her ordinary dress corset after pregnancy is established. However, she should wear a suitable maternity corset, or maternity abdominal supporter, fitted by a competent corsetier under

the eye of her physician, not later than the fifth month, and thereafter adjusted as frequently as needed in the same careful manner, until the day of confinement. The unbounded relief afforded the gravida by a proper abdominal supporter during the latter half of pregnancy, especially if she be a multipara, is sufficient argument by itself for the supporter. Because of this relief from extreme distention of the lower abdomen, with its attendant symptoms of lumbar backache, groin pains, frequent urination and striæ formation, our gravida is enabled to be up on her feet, exercising actively, until actual settling begins.

No maternity corset or abdominal supporter, however well adjusted, will prevent striæ formation by itself; nor will spasmodic, irregular massage of the abdomen with one hand, using oils or fats, be sufficient to prevent striæ formation. Faithful, persistent, daily massage with both hands, as presently described, begun not later than the fourth month, will usually entirely prevent striæ gravidarum. The literature on Obstetrics does not lay sufficient emphasis upon means for the prevention of striæ.

It is my desire to bring the following particular method of massage to the attention of the profession. The gravida, preferably a primipara, because in her the best results can be obtained, is instructed to commence vigorous massage of the entire abdomen and hips for at least ten minutes, night and morning, beginning on the day of her first visit to the office which should be during the second, third or fourth month of pregnancy. The results will not be so satisfactory if massage is commenced later than the fourth month.

Seated in the Fowler's position, with the abdomen and hips exposed, or in the dorsal position with the head and shoulders elevated on two pillows, the patient is shown how to stretch the skin between the curved finger-tips of both hands. She is instructed to begin in the left groin and massage a strip of skin about three inches wide, extending upward toward the left costal border. Thereafter similar strips are taken up until the entire area of the abdomen is covered systematically. The hips are each massaged in like manner. The patient is told to press in deeply with the finger-tips and pull the skin vigorously until it smarts. Only then can we be sure she really stretches the elastic connective tissue fibres of the corium. If the skin is dry or becomes irritated after repeated sittings, the patient may touch her finger-tips in olive oil, palm oil or cocoa butter when beginning massage. Too much oil should not be used, however, as the finger-tips will slip too easily over the skin and no real stretching of the deep fibrous layer of the skin will be accomplished. In order to preserve the velvety texture of the abdominal skin, the patient may use at her option, after massage, a cold cream, olive oil, a rose water lotion, a lemon juice and glycerine lotion, or plain castile soap and warm water upon the abdomen.

Whenever this method was begun before the fourth month and faithfully carried out, striæ formation has been prevented. Moreover, the

abdominal skin at full term, instead of being tightly drawn like a drum-head and broken in many places by recent striae, is soft, velvety and elastic. One primipara who began massage in the fifth month and who gained forty pounds during her pregnancy, had a few small striae upon her hips. These were regarded as being in large part due to her rapid gain in weight. Maternity supporters should be worn at all times except when in bed. One patient, a very heavy woman, pregnant for the third time, wore her supporter even when in bed, stating that she could sleep comfortably on her side only if she kept her supporter on.

To preserve the natural contour of the breasts is even more difficult than the prevention of striae formation upon the abdomen. The modern brasierre, which constricts and binds down the breasts to meet the demands of fashion, has very often ruined the natural contour of the virgin breasts long before the primipara presents herself to the physician for examination. Such a breast, after a few years pressure of the bandeau, is pendulous already, and the nipple is flat or actually depressed. These patients should be instructed to lay aside the dress brasierre, begin active massage of the breasts with the fingers or electric vibrator, or both, and actively draw out and develop the nipples so that they will be serviceable. A proper maternity brasierre should be worn during pregnancy and until lactation is ended. The main features of this brasierre are that it opens in front, that it has an elastic band below the breast and a box plait running vertically from the elastic band to the shoulder strap over the nipple region to give fullness and prevent compression of the nipples.

The writer instructs each primipara and most of the multipara to devote five minutes night and morning to kneading and finger massage of the breast glands to increase their circulation. The massage of the breast is completed by making traction upon the nipples and rolling them between the fingers. During the last thirty days of the pregnancy, each gravida is instructed to apply a few drops of 20 per cent glycerol of tannin to each nipple and massage until dry, once daily, covering the breast with a piece of linen or muslin to protect the underwear or nightdress from staining by the tannin. Where this has been faithfully done as directed, the result is a gratifying freedom from fissures and raw nipples.

Maternity patients deeply appreciate adequate care of their breasts, especially those who have suffered from nipple and breast gland infections in previous pregnancies. The women of this generation do not nurse their babies as long as did their mothers and grandmothers. Let us revive and encourage breast feeding by removing its dangers and by supporting the nursing breasts by proper maternity brasierres all during pregnancy and lactation, so that their contour will not be destroyed.

"Bearing children may ruin my health." How often we encounter a young married woman who dreads pregnancy for this reason! Her mother or sister, her aunt or her school chum have never

had good health since childbirth. This is the most formidable reason of all which women have for dreading pregnancy. To the woman who offers this excuse for being childless, I say, "Come in and let me give you a thorough physical examination." The first cardinal principle of pre-natal care is a complete physical examination of every woman before she conceives, or very early in her gestation. At such examination focal infections in the mouth, nose, throat, ears, cervix or elsewhere; nephritis, heart disease, tuberculosis, syphilis, anemia, malformations of the pelvis and many other ailments can usually be discovered. Often the woman in question will then permit the examiner to handle her case so as to avoid many of the various disasters which befall the gravida who was not thoroughly examined. It is my practice to have teeth extracted, if abscessed, carious teeth cleaned and filled, infected tonsils removed, septic nasal sinuses drained, infected appendices and pus tubes removed, septic cervixes treated, the infected kidney pelvis drained and washed, syphilis and anemia actively treated, at any stage of pregnancy, before the settling of the baby just prior to its birth. The popular notion, too long entertained by physicians, that no operations or radical treatment may be done to the pregnant woman belongs in oblivion with other heresies of ignorance. The vast bulk of the ills of pregnancy, childbirth and the puerperium will be prevented when the physician shall insist upon the eradication of all focal infections early in pregnancy, and the active relief of all the diseases of the gravida which are amendable of treatment.

A woman's general health should be better during and after a normal pregnancy, properly supervised by her physician, but how few pregnancies are really normal without such supervision. I make a strong plea for complete physical examination of every pregnant woman early in pregnancy. This will often prevent the status post-partum of the woman who cries out "I have never been well since my baby came." Physical examination will also remove the basis for the fear of the nullipara that "bearing children may ruin my health."

"Babies will keep me tied down at home." Normally, pregnancy should not interfere with the ordinary going and coming of the gravida until the last three or four weeks before delivery. To this end, properly adjusted maternity supporters greatly assist in keeping pregnant patients on their feet and active almost until the delivery.

The healthy baby will not keep its mother "tied down in her home," as she expresses it, for much over one month after birth, provided she has had adequate pre-natal care. For both mother and baby we must preach a gospel of out-of-doors. It also is part of the instructions to expectant mothers to spend at least two hours out-of-doors daily. The mother who is really "tied down" at home, is so "tied" not because of her baby, as a rule, but because she is in poor physical condition for want of efficient pre-natal, confinement and post-partum care.

"Pregnancy will interfere with my work—my

position." After the fifth month most gravida should abandon employment outside their own homes. Occasionally one who is teaching school, or one who has some slight clerical employment, can retain her position longer than the fifth month. It is true that women must choose between child-bearing and business life, and that they cannot ordinarily engage in both successfully. It is also a fact that a mother should rear her own child and not delegate the task to other women. Therefore it seems to the writer that this excuse is not one which requires much consideration. Here, also, it may be said that adequate pre-natal care will smooth the way for many of the older nulliparæ who have spent their time in business occupations to contemplate child-bearing, without jeopardizing their health. Physicians are often interviewed by timid women between the ages of 30 and 40 who desire to know if it is safe for them to undertake a pregnancy at their age. If physical examination discloses a healthy woman, the answer always is in the affirmative, provided the patient will permit herself to be under constant observation during her pregnancy. Nulliparæ in the third decade of life require special pre-natal care for a successful pregnancy.

"Pregnancy will interrupt my social life and club work." Usually this is the shallow excuse of the lazy and selfish woman. However, there are many women who, fearing pregnancy and childbirth, throw themselves into social activities because they wish to forget that they cannot, or fear that they cannot undertake the larger duty which nature intended them to discharge.

"I might not receive proper care when the baby comes." One of the major arguments for pre-natal care is that the gravida learns to know and trust her physician months before her delivery. She then has no fear about the care she will receive in confinement. It is the woman who has had no pre-natal care and who, perhaps, has not even seen the physician, who fears the day of confinement. Physicians who render adequate pre-natal care are trusted by their patients at the time of confinement. Many visits to the office, or to the home, have strengthened the confidence which the patient has in her physician. He has come to be something more than just "the doctor," and has taken on the related functions of advisor and friend, as well as that of a physician. Therefore, anæsthetics may be administered, manual delivery may be done, even Cesarean section may be performed at the will of the physician, because the patient feels safe in his hands.

In addition, there is an immense advantage to the physician himself in being thoroughly familiar with the condition of the patient whom he is about to confine. Many of the preventable disasters of childbirth constantly occur because the physician has not examined, or has not been permitted to examine his patient frequently before her delivery. Very few obstetricians feel satisfied with a single measurement of an abnormal pelvis. This is merely one illustration of the desirability of frequent examinations before delivery.

"We cannot afford to have children." This is a most common excuse, but one not usually true

in the cases of those women who voice it. Those who truly cannot afford children are the ones who have the large families. The high cost of living does not stop child-bearing, as everyone knows.

When sincerely expressed by the patient, this excuse usually has for its background some calamity in pregnancy or childbirth which has befallen the patient's relative or friend, or which may have befallen the patient herself in a previous pregnancy. The laity and physicians alike are well aware that abnormal pregnancies and abnormal deliveries cost many times more in dollars and cents than do the normal cases, quite aside from their other distressing aspects. The writer contends that careful pre-natal care will rob even this excuse of its last basis, since it will make pregnancy and childbirth more economical from a financial standpoint.

Before conclusions are enumerated, the writer desires to acknowledge with thanks the skillful assistance of Dr. W. W. Cross of our Fresno Clinical Group, in the preparation of this paper.

CONCLUSIONS

First—Adequate pre-natal care will do more than anything else to overcome the reluctance of American women to bear children. There is still no reluctance upon the part of our foreign-born population and our domestic population of foreign parentage.

Second—Pre-natal care must provide means of preserving the figure-profile of abdomen and breasts, and prevent stræ formation, diastasis of muscles, lumbar backaches, groin pains, and bladder and bowel embarrassment during pregnancy. Means are described in this paper which are found very successful by the author. The preferred types of maternity supporter and maternity brassière are discussed.

Third—There is immense value in early, thorough physical examination of pregnant women. Most of the disasters of pregnancy and childbirth could be prevented, or at least foreseen at such examinations. This examination inspires the confidence of the patient.

Fourth—Pre-natal care will keep the gravida on her feet during almost the whole period of her pregnancy. Her out-door life, as well as her active home life, will both be preserved, and her social life interfered with but little.

Fifth—Pre-natal care inspires trust in the heart of the patient and smooths the way for confinement and any attendant procedure the physician finds necessary.

Sixth—Pre-natal care will even overcome the excuses of women who sincerely contend that they cannot afford, financially, to have children.

Seventh, and lastly, pre-natal care will pay the physician a good return in consolation and in fees for his time and effort. Patients will pay well for good service.

Buy your health in advance, says the U. S. Public Health Service, and you wont even know you are paying for it. Good solid dependable health was never cheaper than it is today.

THE GREAT SECOND TYPE OF CHRONIC ARTHRITIS—FURTHER STUDIES

By LEONARD W. ELY, M. D., San Francisco

General. By the term second type of arthritis I mean that great type of chronic arthritis called arthritis deformans by the Germans, osteoarthritis by the English, degenerative arthritis by Nichols and Richardson, hypertrophic arthritis by Goldthwait, and other names by various other writers. My reasons for my nomenclature have been set forth on numerous occasions in previous papers, as well as the objections to the titles hitherto given to the disease.¹ The term destructive arthritis is being employed recently with increasing frequency, especially by radiographers, but as this term can be employed with equal justice to every known form of arthritis, it can be said to be worse than most of the others.

One year ago I reported ninety cases of the disease, setting forth its essential features.² I shall recapitulate briefly here.

The prime cause is infection in the alveolar processes of the jaws. Trauma only acts by straining a joint already damaged by the disease.

The disease is essentially one of middle life and of advanced age, but only because alveolar infection is more frequent then. It occurs fairly often in the third decade. Diet is only of importance from the fact that indigestion changes the secretions of the mouth, and makes the infection about the roots of the teeth more active. All attempts to understand the disease on the basis of "disturbed metabolism" or to treat it on that basis are futile. The changes have been rung *ad nauseam* on the dietary treatment of chronic arthritis, or chronic rheumatism as it was formerly caused. The pendulum swings back and forth. The present vogue of the "carbo-hydrate free" diet is simply a recrudescence of the raw beef and hot water treatment, the Salisbury treatment, of forty years ago. Certain of the sufferers from this disease will improve under a starchless diet, and others under a meatless diet, simply because one diet agrees with some, and another with others. These dietary fashions are attractive, doubly so when camouflaged by high-sounding titles, and doubtless will continue to run their course. They do, however, confuse the subject and impede progress, and for this reason they should be combated. Health is metabolic equilibrium, disease is metabolic imbalance, or disturbed metabolism. To say, therefore, that a certain form of chronic arthritis is caused by disturbed metabolism, is to say that it is caused by disease, and is quite absurd.

Pathology. The essential primary pathological feature of the second type of arthritis is an aseptic necrosis in the bone marrow near the joint. Probably the same process occurs throughout the bone, causing cysts and fibrosis, but it usually is symptomless unless a joint is in the neighborhood.

All our efforts to obtain cultures from the marrow have been in vain. We assume that infection has been present at some time and has died out, but we know nothing as to this. The joint fluid also was always sterile in our cases, and we have come to consider the arthritis really as a traumatic arthritis, caused by the strain of function on a previously damaged and distorted machine.

Following the necrosis in the end of a long bone,* nature builds a wall of new bone between the diseased area and the joint, and the cartilage over it degenerates and wears away, leaving an articular surface of dense, eburnated bone, which becomes grooved in the line of joint motion. New bone is built up at the circumference of the joint at the lines of attachment of the ligament, giving rise to the lipping and spurring so prominent in the radiograph and in the pathological specimen. This is the prominent gross feature of the disease, and is responsible for most of the previous ideas on it as well as for most of the names which have been applied to it. A careful study of the negative, however, usually shows distinct rarefaction in the bone near the joint, and occasionally sequestra. When the bones are sawn up in the laboratory this rarefaction is quite evident, even when the thickened bone about it disguised its presence during life.³

An observation I have made during the past year I consider very important, namely, *the relation of this disease to fracture of the neck of the femur in the elderly.* The presence of the second type of arthritis has often been noted after fracture of the femur neck, and the fracture was assumed to cause the arthritis. It cannot cause it. Cartilage and bone deprived of their nutrition and buried in the soft tissues do not behave as does the head of the femur after fracture of the neck. I speak not from abstract theory, but from knowledge gained by experimental work.⁴⁻⁵ Marked rarefaction of the neck and head of the femur may often be seen in plates taken immediately after fracture of the femur neck too early to be caused by the fracture.

Fracture of the neck of the femur does not cause a chronic arthritis, nor does a chronic arthritis cause the fracture; but both are caused by the same thing, namely, by a necrosis in the head and neck of the bone.

In my article of a year ago I called attention to the influence of this disease in causing the stiff and painful joint after a joint fracture and shall not dilate upon that further here.

The ankylosis which follows this form of arthritis is that of two bones which no longer fit, the obstruction to motion is that of a damaged machine. Union of the bones, whether by fibrous tissue or bone, practically never occurs except in the spine.

1. Ely, Leonard W.—The Pathology and Classification of Chronic Joint Disease, *J. A. M. A.*, 1912, lix, 511. Chronic Arthritis, *J. A. M. A.*, 1913, lxi, 670. Diseases of Bones and Joints, Surg. Publ. Co., New York, 1914.
2. Ely, Leonard W.—The Second Great Type of Chronic Arthritis, *Arch. Surg.*, 1920, i, 158.

3. Ely, Leonard W.—A Study of One Hundred Bones Sawn in the Laboratory. Bone and Joint Studies, i, Stanford University, 1916. Published by the University.

4. Cowan, John Francis and Ely, Leonard W.—A Study of Buried Bone, *Jour. Orth. Surg.*, 1919, i, 100.

5. Ely, Leonard W.—An experimental study of Buried Bone, *An. of Surg.*, 1919, lxx, 747.

* The same process occurs also in short and flat bones.

| Case No. | Age | Sex | Occupation | Joint | Infection |
|----------|-----|--------|----------------------------|--------------------|-------------------------------|
| 91 | 47 | Female | Housewife | Multiple | Pyorrhea. No X-ray taken |
| 92 | 55 | Male | Driver for wholesale house | Spine | Alveolar infection |
| 93 | 32 | Male | Laborer | Feet | Alveolar infection |
| 94 | 43 | Male | Ranch helper | Spine | Alveolar infection |
| 95 | 72 | Female | Housewife | Hip | Adentulous |
| 96 | 62 | Female | Domestic | Multiple | Alveolar infection |
| 97 | 52 | Male | Laborer | Hip | Alveolar infection |
| 98 | 54 | Male | Laborer | Multiple | Alveolar infection |
| 99 | 63 | Female | Day worker | Spine | Alveolar infection |
| 100 | 67 | Female | Housework | Spine | Alveolar infection |
| 101 | 63 | Male | Laborer | Spine | Alveolar infection |
| 102 | 47 | Male | Clerk | Knee | All teeth gone |
| 103 | 45 | Female | Housewife | Spine | Alveolar infection |
| 104 | 42 | Female | Nurse | Spine | Few remaining teeth sound |
| 105 | 60 | Female | Housewife | Hip and sacroiliac | Alveolar infection |
| 106 | 55 | Male | Garageman | Acromioclavicular | Alveolar infection |
| 107 | 50 | Male | Rigger | Knee | Alveolar infection |
| 108 | 31 | Female | Housewife | Knees | Alveolar infection |
| 109 | 60 | Female | Saleswoman | Foot | Alveolar infection |
| 110 | 51 | Male | Laborer | Knee | Alveolar infection |
| 111 | 54 | Male | Laborer | Knees | Alveolar infection |
| 112 | 48 | Male | Teamster | Spine | Alveolar infection |
| 113 | 51 | Male | Teamster | Spine | Alveolar infection |
| 114 | 38 | Female | Housewife | Hip | Alveolar infection |
| 115 | 47 | Male | Laborer | Spine | Gingivitis. No X-ray of teeth |
| 116 | 63 | Male | Clerk | Spine | Alveolar infection |
| 117 | 62 | Female | Domestic | Fingers | Alveolar infection |
| 118 | 55 | Male | Laborer | Knee | Alveolar infection |
| 119 | 44 | Male | Clerk | Tarsus | Alveolar infection |
| 120 | 72 | Male | Farm hand | Spine | Alveolar infection |
| 121 | 51 | Female | Housework | Hips | Alveolar infection |
| 122 | 62 | Male | Laborer | Hip | Alveolar infection |
| 123 | 46 | Male | Laborer | Spine | Alveolar infection |
| 124 | 50 | Female | Housework | Knees | Alveolar infection |
| 125 | 47 | Male | Mariner | Spine | Alveolar infection |
| 126 | 52 | Male | Laborer | Hip | All teeth out; fell out |
| 127 | 63 | Female | Day worker | Spine | Alveolar infection |
| 128 | 55 | Female | Housewife | Hip | Alveolar infection |
| 129 | 59 | Female | Housewife | Spine | Alveolar infection |
| 130 | 48 | Male | Waiter | Knee | Alveolar infection |
| 131 | 67 | Male | Shipjoiner | Hip | Alveolar infection |
| 132 | 58 | Female | Practical nurse | Multiple | Alveolar infection |
| 133 | 37 | Male | Laborer | Spine | Alveolar infection |
| 134 | 72 | Male | Laborer | Foot | Alveolar infection |
| 135 | 59 | Male | Laborer | Spine | Alveolar infection |
| 136 | 22 | Male | Confectioner | Knee | No alveolar infection |
| 137 | 39 | Male | Laborer | Hip | Alveolar infection |
| 138 | 64 | Male | Rancher | Hip | All teeth extracted |
| 139 | 26 | Male | Laborer | Knee | Alveolar infection |
| 140 | 59 | Male | Laborer | Spine | All teeth gone |
| 141 | 49 | Male | Carpenter | Spine | Alveolar infection |
| 142 | 48 | Male | Laborer | Tarsus | Alveolar infection |
| 143 | 22 | Male | Sailor | Knee | Alveolar infection |
| 144 | 69 | Female | Housework | Spine | Alveolar infection |
| 145 | 56 | Male | Laborer | Spine | Alveolar infection |
| 146 | 89 | Male | Watchman | Spine | Alveolar infection |
| 147 | 52 | Male | Granite cutter | Wrist | Alveolar infection |
| 148 | 57 | Female | Housewife | Knees | Alveolar infection |
| 149 | 61 | Male | Tinsmith | Spine | Alveolar infection |
| 150 | 75 | Male | Watchman | Spine and shoulder | Alveolar infection |
| 151 | 67 | Male | Laborer | Spine | Alveolar infection |
| 152 | 64 | Male | Laborer | Knee | Alveolar infection |

Symptomatology. The symptoms are those of a low grade of chronic arthritis. Rarely is the pain severe except in the hip or spine. When the disease occurs in the spine it is usually called muscular rheumatism, fibrositis, lumbago, sciatica, or neuritis. Recently it has been dignified with the term radiculitis.

The diagnosis is made by the Roentgen rays. If lipping and spurring be present at the lines of attachment of the capsule, the disease belongs in this category.

Treatment. The main indication is the removal of the focus of infection in the alveolar processes of the jaws, if it still exists. The changes in the joint caused by the disease, once present, never disappear, nor can they be removed. This is the reason why symptoms can persist long after all teeth are gone. Rough bone ends rubbing against each other, and masses and spikes of bone heaped up about the joint will always cause pain.

If the focus be removed in the early stages of the disease, the process may die down, and the patient may enjoy comfort thereafter. Even in

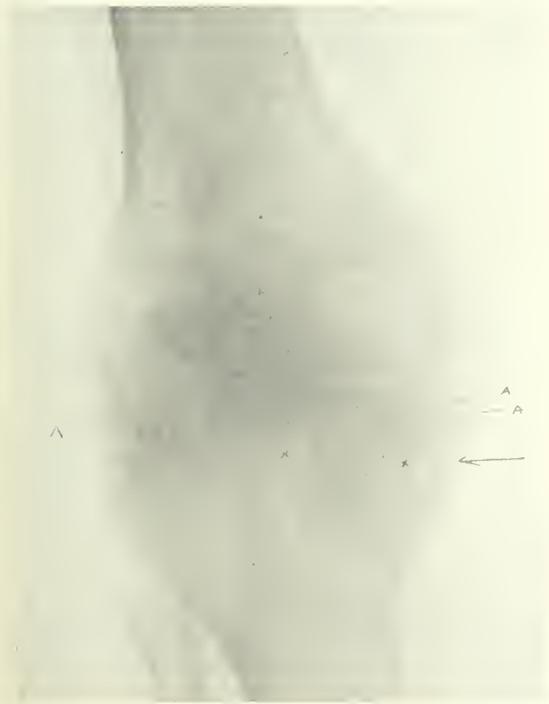
more advanced cases the removal of the focus is often followed by comparative comfort.

Immobilization probably is of little use, but heat usually is grateful. Note the tendency of elderly people with "chronic rheumatism" to hug the fire. By all means regulate the diet according to the patient's individual needs. Most of these patients learn what they may eat and what they may not. Passive hyperaemia by the Bier bandage sometimes quiets pain. Gentle massage may be tried, but forced passive motion is to be strictly avoided. It simply grinds together two rough, distorted bone ends and increases the disability. All injections into the joint I believe to be perfectly useless. Aspirin quiets the pain.

Some of our cases which have not improved after extraction of the affected teeth have done well under the deep injection of a foreign proteid. The identity of the proteid seems immaterial. My associate, Dr. Fisher, who at present has charge of this branch of the treatment, is employing antinococcal vaccine, with an initial dose of 250,000,000.



Arthritis of Knee.—Skiagram showing characteristic lipping of tibia and femur (A.A.), and areas of rarefaction in head of tibia, (X.X.).



Arthritis of Knee.—Skiagram showing characteristic lipping of tibia and femur (A.A.), and areas of rarefaction in head of tibia, (X.X.).

In severe cases, especially when the hip is affected, resection offers the best way out. The head of the bone is removed, the trochanter is thrust into the acetabulum, and the hip is put up in plaster of Paris in the abducted position. The operation is difficult through the ordinary anterior incision, but easier through Sprengel's incision.

A list follows of the cases seen during the past year in the orthopaedic department of the Stanford clinics, with the sex, age and occupation of each one. My private patients present much the same results, except, of course, that the occupations are not quite so laborious as a rule.

An analysis of these cases shows conditions strikingly similar to those prevailing in the cases I published a year ago. The occupations are those of the general run of clinic patients. Some of them are laborious and some of them are not: The disease is common in well-to-do patients, but in the absence of strain often passes unnoticed unless severe.

Sex. Forty-two of the patients were of the male sex, twenty of the female. This may be due to two things: women may take better care of their teeth than men, or the nature of their occupations spares their joints from strain. In the latter case the presence of the disease in them passes unnoticed, or the symptoms are so slight as not to drive them to the clinic.

Age. This varies from twenty-two to eighty-nine, reckoned from the time of registry at the clinic. The age of onset of the disease, therefore, would run somewhat lower than the figures show. Three of the patients were in the third decade of life, five in the fourth, thirteen in the fifth, twenty in the sixth, sixteen in the seventh, four in the eighth and one in the ninth.

Alveolar Infection. Almost invariably this was determined by our dentist, Dr. Campbell, with the Roentgen rays. The proportion of patients with demonstrable alveolar infection was overwhelming. All but nine had it. Of these nine the *few remaining teeth* of one were sound. Two had pyorrhea, but were not radiographed. Five had lost all their teeth. In one case the teeth had "fallen out." Concerning these five it is well to remember that the pain and disability from the anatomical changes often persist long after the removal of the cause. Only one patient, a man of twenty-two, a confectioner, had sound teeth. The X-ray picture of his knee showed a marked rarefaction of the bones.

CONCLUSIONS

From these cases, and from those I published one year ago, the following conclusions are drawn:

1. The great second type of chronic arthritis is the result of a necrosis in the bone marrow in the region of the joint, and its distinguishing mark clinically is the production of new bone at the margin of the articulation, at the lines of insertion of the capsule.

2. No proof is at hand of the presence of infection in the bone marrow or in the joint fluid. Presumably the necrosis is due to a low-grade infection. In this case the organism itself must die out, or else is of such a nature as to escape detection with our present methods of examination.

3. This form of arthritis is more frequent in men than in women, in the proportion of two to one, at least as observed clinically. It is essentially a disease of middle and late life, though it may occur as early as twenty-two years.

4. The prime cause of the disease in an overwhelming proportion of cases is infection in the alveolar processes of the jaws. The removal of this infection is the first step in the treatment.

5. The anatomical changes are permanent. The removal of the focus of infection has no influence upon them, once they have formed.

6. The results of treatment generally are good. Removal of the focus in the alveolar processes comes first. As adjuvants, hydrotherapy, dry heat, deep injections of a foreign proteid, and, in the extremities, the application of the Bier elastic bandage may be tried.

7. In the severe form of the disease as found in the hip, resection is indicated.

8. The same aseptic necrosis in the head and neck of the femur which causes this type of arthritis in the hip is the cause of many cases, at least, of fracture of the neck of the femur in the elderly.

Notice

If you are interested in presenting a paper at the next annual meeting in Yosemite, May 15 to 18, be sure and write *promptly* to the secretary of the appropriate section. The names and addresses of all section officers will be found on Page 419 of this number of the Journal.

Within the past few years the whole question of illegitimate births has received a great deal of attention, though generally at the hands of private organizations rather than as a State problem. Very little advance has been made in legislation pertaining to the status and support of the illegitimate child. With increased recognition of the meaning of the problem, and with the impetus that the war has given to all efforts toward conserving child life, many beneficial changes in this respect will doubtless come in the United States as in European countries. In the Federal law providing for allotments and granting allowances to the dependents of soldiers, governmental recognition was given to the equal needs of all children for proper support. Here illegitimate children were placed on the same basis with legitimate children as being entitled to support by the father and by the government. Whether or not conditions that have come since the United States entered the war, will affect the illegitimate birth rate, it is too early to determine. Regardless of whether the numbers are increased or decreased, it cannot be doubted that these children, who from the anthropological point of view are in no way inferior, but who by the conditions of their birth are in special need of protection, will, as a result of the war, become in a larger measure the special concern of the State.—(E. O. Lundberg, *Am. J. Phys. Anthropology*, July-Sept., 1918.

SLEEP REQUIREMENTS OF CHILDREN

No child nutrition worker, says the U. S. Public Health Service, can hope to get satisfactory results without insisting on enough sleep for her charges. Besides damaging the nervous system, late hours cause "sleep hunger" and make children nervous and fidgety. The Service commends the following precepts just issued by the London County Council: School children aged four years need twelve hours' sleep a day; aged five to seven, eleven to twelve hours; eight to eleven, ten to eleven hours;

and twelve to fourteen, nine to ten hours. Children grow mainly while sleeping or resting; do you want yours to grow up stunted? Tired children learn badly and often drift to the bottom of the class; do you want yours to grow up stupid? When children go to bed late their sleep is often disturbed by dreams and they do not get complete rest; do you want yours to sleep badly and become nervous? Sufficient sleep draws a child onward and upward in school and in home life; insufficient sleep drags it backward and downward. Which way do you want your child to go? Tiresome children are often only tired children; test the truth of this. That a neighbor's child is sent to bed late is not a good reason for sending your child to bed late; two wrongs do not make a right. Going to bed late is a bad habit which may be difficult to cure; persevere till you succeed in curing it.

THE MODERN METHOD OF FEEDING INFANTS

Modern infant feeding calls for a formula suited to the individual requirements of the individual baby. The physician now realizes that an infant, deprived of breast milk, must be fed as an individual. The nourishment from the infant's food is principally derived from cow's milk. The "foods" contain no mysterious life-giving elements, but are used as modifiers. As such, they are indispensable for their carbohydrate content, the added carbohydrate being necessary to make up for the loss of carbohydrate when cow's milk is diluted with water. It is also important that these "foods" are given as carbohydrates and should not contain a mixture of vegetable protein and fat, since the cow's milk supplies animal protein and fat in proportion suitable for the growth of most babies.

Infant feeding should be directly under the control of the physician. Realizing this important fact, Mead Johnson & Company of Evansville, Indiana, have manufactured a line of Infant Diet Materials suitable for the individual requirements of the individual baby. These products do not carry laity directions on the trade packages. Such directions on a package of food is the unsurmountable wall that differentiates between individual infant feeding and indiscriminate infant feeding. The physician may prescribe Mead's products with perfect confidence.

Interesting publications on Infant Feeding, prepared by Mead Johnson Company are well worth writing for. Letters addressed to them will receive personal attention from their Scientific Department.

THINGS EVERY PHYSICIAN SHOULD READ

This column, which will appear from time to time in the *Journal*, is offered under the impression that much of the large and varied literature that passes over an editor's desk is not readily available to most physicians, nor have physicians time to look through the libraries for the occasional article that is really worth reading or that is an important contribution to problems confront-

ing better medicine today. The editor would be glad to have suggestions for this column from any source. Only subjects of importance to physicians will be noted:

State Medicine: An editorial in the September number of the Journal of Radiology, pages 50 to 54. A vital and interesting discussion of certain phases of this important subject.

Concerning Surgical Fees: The action of the Johns Hopkins Hospital Board of Trustees in fixing a maximum fee of \$1000 for any operation is subject to extensive discussion, most of which is in the form of adverse criticism, both in lay and medical literature. An editorial in the Journal of the Indiana State Medical Association, August 15, 1921, page 271, and in the Illinois Medical Journal, September, 1921, pages 235 and 236, deal with this and other questions of medical economics.

Malpractice Insurance and Its Costs: An interesting article on this subject by Robert J. Fologia, Illinois Medical Journal, August, 1921, page 92.

The Fad for Pseudoscience: By George D. Tarnowsky, Jr. A. M. A., September 10, 1921, page 85. Dr. Tarnowsky has written a timely article upon a subject of great importance to every physician of the country.

The Truth About Vivisection: By Ernest Harold Baynes. Woman's Home Companion, July, 1921, page 9. An important and interesting article dealing with this very much discussed subject.

The Greatest Two Aids to Long Life: American Magazine, October, 1921, page 15. It is very stimulating and quite worth while to read this story of the life of Dr. Stephen Smith, who is now approaching his ninety-ninth birthday and has held about all the honors that can be given to a man in the medical profession.

General Session and Section Officers for the 1922 Meeting of the State Society

The list of the officers of the general sessions and the various sections of the State Society is published below, so that members desiring to contribute papers may have the names and addresses of the proper officers of the section in which they are interested. Members desiring to present papers should communicate without delay with the chairman and secretary of the appropriate section, because the program is getting well under way and will be closed and go to press the first week in February.

The Secretary of the State Society, as chairman of the General Program Committee, invites correspondence and suggestions regarding any phase of the 1922 program.

GENERAL SESSIONS

Chairman, Dr. John H. Graves, President of the Society, 977 Valencia Street, San Francisco.

Secretary, Dr. W. E. Musgrave, Chairman of the Program Committee, 912 Butler Building, San Francisco.

SECTION ON TECHNICAL SPECIALTIES

Chairman, Dr. Ray Lyman Wilbur, President Stanford University.

Secretary, Dr. Charles T. Sturgeon, Merritt Building, Los Angeles.

SECTION ON MEDICAL ECONOMICS, EDUCATION AND PUBLIC HEALTH (League for the Conservation of Public Health)

Chairman, Dr. Dudley Smith (President League for the Conservation of Public Health), Thomson Building, Oakland.

Secretary, Dr. W. T. McArthur (Secretary League for the Conservation of Public Health), Security Building, Los Angeles.

SECTION ON INDUSTRIAL MEDICINE AND SURGERY

Chairman, Dr. E. W. Cleary, 177 Post Street, San Francisco.

Secretary, Dr. Packard Thurber, 906 Black Building, Los Angeles.

SECTION ON RADIOLOGY

(Roentgenology and Radium Therapy)

Chairman, Dr. Albert Soiland, 527 West Seventh Street, Los Angeles.

Secretary, Dr. H. E. Ruggles, Butler Building, San Francisco.

SECTION ON PATHOLOGY AND BACTERIOLOGY

Chairman, Dr. William Ophuls, Stanford University Medical School, San Francisco.

Secretary, Dr. Roy W. Hammack, Brockman Building, Los Angeles.

SECTION ON GENERAL MEDICINE

Chairman, Dr. Joseph M. King, Brockman Building, Los Angeles.

Secretary, Dr. E. S. Kilgore, 391 Sutter Street, San Francisco.

SECTION ON PEDIATRICS

Chairman, Dr. William Palmer Lucas, University Hospital, San Francisco.

Secretary, Dr. Hugh K. Berkley, Brockman Building, Los Angeles.

SECTION ON NEUROPSYCHIATRY

Chairman, Dr. Walter F. Schaller, 909 Hyde Street, San Francisco.

Secretary, Dr. Carl W. Rand, 918 Harvard Building, Los Angeles.

SECTION ON GENERAL SURGERY

Chairman, Dr. Charles D. Lockwood, 295 Markham Place, Pasadena.

Secretary, Dr. Edmund Butler, Butler Building, San Francisco.

SECTION ON EYE, EAR, NOSE AND THROAT

Chairman, Dr. Frank A. Burton, Watts Building, San Diego.

Secretary, Dr. Harvey McNaught, Butler Building, San Francisco.

SECTION ON UROLOGY

Chairman, Dr. George W. Hartman, 999 Sutter Street, San Francisco.

Secretary, Dr. Louis Clive Jacobs, 462 Flood Building, San Francisco.

SECTION ON ORTHOPEDIC SURGERY

Chairman, Dr. W. W. Richardson, Brockman Building, Los Angeles.

Secretary, Dr. G. J. McChesney, Flood Building, San Francisco.

SECTION ON ANESTHESIOLOGY

Chairman, Dr. Mary E. Botsford, 807 Francisco Street, San Francisco.

Secretary, Dr. Eleanor Seymour, 308 Consolidated Realty Building, Los Angeles.

SECTION ON GYNECOLOGY AND OBSTETRICS

Chairman, Dr. Harry M. Voorhees, Brockman Building, Los Angeles.

Secretary, Dr. L. A. Emge, Stanford University Hospital, San Francisco.

QUALIFICATIONS FOR MEMBERSHIP

As an answer to numerous requests regarding qualifications for membership in various societies of the State, the Council of the Medical Society of the State of California has passed the following resolution, which it is believed will cover all possible angles to the problem:

(a) Physicians holding the degree of Doctor of Medicine from a reputable school and who are licensed to practice in the State of California are, of course, eligible to membership in the county and State societies.

(b) Persons holding the degree of Doctor of Medicine from an acceptable school, who are licensed to practice medicine and surgery and who are also licensed to practice drugless therapy, and who are practicing both of these methods, are entitled to membership in the local and State organizations.

(c) Persons who are not Doctors of Medicine, from acceptable schools, but are graduates from drugless therapy schools and who are licensed (by examination) to practice medicine and surgery, and who also may or may not be licensed to practice drugless therapy, are not entitled to membership in local and State organizations, because our membership is based primarily not upon legal license to practice, but upon the degree of Doctor of Medicine from an acceptable school.

(d) Doctors of Medicine who are licensed only to practice drugless therapy and do practice only drugless therapy are not entitled to membership, because they violate a definite and specific clause in the constitution and by-laws of all medical organizations, which prohibits practice exclusively of one branch of medicine. The reason for this provision is that the practice of medicine implies thorough education in all subjects of and pertaining to medicine, and after such education has been secured, the physician should and must have the right to treat diseases by the method that to him seems most likely to result in recovery of the sick person.

(e) Persons who are not Doctors of Medicine, but graduates of drugless schools and who have secured their licenses by examination to practice medicine and surgery, and practice only medicine and surgery, are not entitled to membership in the State or local societies.

County Societies

Fresno County Medical Society (as reported by Dr. A. D. Ellsworth, Secretary): The September meeting of the society was held at the home of President J. R. Walker at Sunny Side. There were twenty-five members present and eighty-seven absent. Dr. Alson R. Kilgore of San Francisco was a guest and addressed the society on Bone Tumors, his remarks being illustrated by lantern slides.

The Fresno County Hospital has been reorganized. Dr. H. O. Collins has been made superintendent and a staff of twenty-four physicians has been appointed to conduct the various departments of the professional work of the hospital. An effort is now being made to secure for the county a special hospital or ward for the observation and detention of patients suffering from mental disorders.

The Fresno clinical group, made up of a number of physicians engaged in the practice of group medicine, has ceased to exist as an organization.

San Diego County.—The U. S. Naval Hospital, which is under construction at San Diego and which will be completed during 1922, will consist of one main group of buildings built around a central court. These buildings will contain fourteen wards, including two for officers, an administration building, subsistence building, operating room pavilion, with four operating rooms, service

building, nurses' quarters, red cross convalescent house and power plant. The operating room pavilion is standard design, with overhead light and north light. Anaesthetic, instrument and recovery rooms are of approved type.

The construction is of concrete and hollow tile, with solid monolithic concrete floor and roof construction, metal stairways and elevator shafting. The subsistence building will be provided with complete refrigerating plant with separate rooms for the preparation of various types of food. The buildings will all be connected by an arcade, which will afford protection from sun and rain.

The location of the hospital is considered to be the best in the vicinity of San Diego, and affords a broad, sweeping view of the ocean, the mountains, both to the eastward as well as those below the Mexican border, and overlooks the city and bay of San Diego.

The present plan provides for beds to handle about 650 patients. This can be increased to 750 or 800 in an emergency, and contemplated future construction will provide for at least 1000. Future construction contemplates additional wards, separate hospital corps' quarters, commanding officer's and executive officer's quarters and isolation ward.

The Bureau of Medicine and Surgery plans on the very latest type of equipment in all departments.

The hospital, designed to handle most of the Naval sick for the Eleventh Naval District, will cost, when completed, about \$2,000,000.

The San Diego County Medical Society opened its regular meetings after the summer recess with a dinner at the San Diego Hotel, Tuesday, September 13, followed by a symposium on "Group Medicine—Its Advantages to Medicine and the Public."

The discussion was opened by Dr. Donald Frick of Los Angeles. Other out-of-town participants were Dr. H. A. Johnston of Anaheim and Dr. Charles D. Lockwood of Pasadena.

Santa Clara County. (As reported by Dr. J. L. Pritchard, Secretary.)

The society did not hold a meeting in August. The September meeting will be held at Gilroy. It will be a joint meeting of San Benito, Santa Cruz, Monterey and Santa Clara Counties.

A dinner will be served at 7 p. m., to be followed by a scientific program.

Sister Zoe, who has been Superior of the O'Connor Hospital in San Jose for the past four years, has been transferred to San Francisco, where she will be Superior at Mary's Help Hospital.

Sonoma County Medical Society (as reported by Dr. N. Juell, Secretary): The September meeting was held at Santa Rosa High School with fourteen members present and twenty-one absent.

By unanimous vote the Society repealed the clause in the by-laws relating to lodge physicians.

Dr. Hans Lisser of San Francisco was the speaker of the evening and gave an illustrated lecture on "Some Phases of the Endocrine Gland Problem."

Santa Rosa has a new faith healer who guarantees cure for practically any disease for \$100.

News Item

Saint Francis Hospital Clinical Society: At the August meeting Dr. Martin H. Fischer presented a paper on Arteriosclerosis and Dr. John H. Graves gave an address on interesting problems before the American Medical Association delegates at the recent convention.

Merced Hospital Association: It is a pleasure to note that the medical men of Merced County, acting under the supervision of the League for the Conservation of Public Health, have been successful in incorporating and financing the Mercy Hospital. This is a community general hospital, the first unit to be of twenty-five beds, and the plans to provide for other units to be added as needed. The board of directors of the institution are all substantial business men of the community and the membership of the local medical society will constitute its staff.

The profession and the people of Merced County are to be congratulated upon this practical, tangible expression of their interest in the welfare of their fellow men.

Weimar Sanitarium.—The Supervisors of the eleven counties operating the tuberculosis sanitarium at Weimar, Placer county, will receive bids for the construction of a new service building for that institution on August 30. The building will be the last word in construction and appointments, and will greatly improve the facilities for handling the steady increase of patients. Mr. W. H. Weeks of San Francisco is the architect. The cost will be \$35,000.

New Clubhouse for California Sanitarium.—Drs. Harry Warren and Max Rothschild of the California Sanitarium, Belmont, Cal., have shown their progressiveness by starting construction of a \$25,000 club building for their institution. It will include a small theater, with stage and moving picture apparatus, library, men's department, solarium, laboratories, etc. It is the first unit of an extensive improvement plan for the sanitarium. Plans and specifications were prepared by W. H. Weeks, the San Francisco architect.

MEETINGS OF TECHNICAL SPECIALTY ORGANIZATIONS

At the meeting of the Board of Directors of the San Francisco County Medical Society, held September 13, it was moved, seconded and carried that the California associations of physiotherapists, medical social workers, radiographers, dietitians and clinical and laboratory technicians be allowed to meet in the society's rooms for purposes of organization until January 1, 1922.

PACIFIC ASSOCIATION OF RAILWAY SURGEONS

The nineteenth annual meeting of the Pacific Association of Railway Surgeons was held in the Medical Building, Bush and Hyde streets, San Francisco, on Friday and Saturday, August 26 and 27. The scientific meetings and luncheons were attended by about sixty members and a number of invited guests. The program was largely surgical and roentgenological.

The officers for 1920-1921 are: Dr. Fred W. Lux, president; Dr. Geo. R. Carson, first vice-president; Dr. Geo. W. Stout, second vice-president; Dr. E. M. Keys, treasurer, and Dr. W. T. Cummins, secretary. For 1922, Dr. S. S. Bogle was elected president and the other officers were re-elected for another year.

Program

1. The Importance of the Human Hand in Industrial Work.
Discussion: Dr. W. B. Coffey, San Francisco.
Discussion: Dr. W. I. Baldwin.
2. Syphilis Simulating Banti's Disease. Case Report and Demonstration of Patient.
Dr. O. E. Eklund, San Francisco
3. A Neglected Region: A Plea for a More Thorough Routine Examination of the Ano-Rectal Tissues.
Dr. J. H. Shaw, Santa Rosa
Discussion: Dr. G. L. Eaton, San Francisco.
4. The Principles of Treatment of Spine Injuries

Without Cord Involvement.

- Dr. W. I. Baldwin, San Francisco
5. Demonstration of Interesting Roentgen Plates.
Dr. L. B. Crow, San Francisco
 6. Symposium—Diseases and Their Relationship to the Stomach, Gall Bladder and Appendix.
Medical: Dr. J. Wilson Shiels, San Francisco
Discussions: Dr. Henry Abraham, San Francisco
Dr. F. W. Lux, San Francisco
Surgical: Dr. W. I. Terry, San Francisco
Discussions: Dr. S. S. Bogle, Santa Rosa
Dr. A. W. Morton, San Francisco
Pathological: Dr. D. M. Ervin, San Francisco
Roentgenological: Dr. M. P. Burnham, San Francisco
 7. Demonstration of Rehffuss' and Einhorn's Duodenal Tubes.
Dr. H. F. Unsinger, San Francisco
 8. Demonstration of Interesting Roentgen Plates.
Dr. M. P. Burnham, San Francisco
Discussion: Dr. S. S. Bogle, Santa Rosa
 9. Election of Officers.

The Saint Francis Hospital Clinical Society cordially invites us to attend their monthly meeting at the hospital on Friday, August 26, at 8:30 p. m. Dr. Martin H. Fischer, University of Cincinnati, will present a paper on "Arteriosclerosis," and Dr. John H. Graves, president of the California State Medical Society, will address the meeting on "The Interesting Problems Before the American Medical Association Delegates" at the recent convention.

Officers for 1920-1921: Dr. Fred W. Lux, president; Dr. Geo. R. Carson, first vice-president; Dr. Geo. W. Stout, second vice-president; Dr. E. M. Keys, treasurer; Dr. W. T. Cummins, secretary.

Officers for 1921-1922: Dr. S. S. Bogle, president; remainder as above.

Book Reviews

Epidemic Respiratory Disease. By Eugene L. Opie, Francis G. Blake, James C. Small and Thomas M. Rivers. 402 pages. Illustrated. St. Louis: C. V. Mosby Company. 1921. Price, \$6.50.

This book should be of great value to students of respiratory diseases. It deals with the bacteriology and pathological anatomy of the respiratory infections accompanying influenza and measles and lays particular stress on the pneumonias. It is carefully compiled from observations of cases during the epidemics at Camp Funston and Camp Pike and is a thoroughly complete and scientific treatise on ground covered. H. A. F.

Treatment of Acute Infectious Diseases. By Frank S. Meara. 2d ed. revised. New York: Macmillan Company. 1921.

The second edition of this very valuable book should be hailed with pleasure by every professional worker, teacher, student or physician, because of the excellent and succinct manner in which the material it contains is presented. It fulfills the chief criteria of correctness, simplicity and practicability. Especially to be commended are the chapters upon typhoid, influenza, pneumonia, encephalitis lethargica, and the exanthems. The tabulation of methods at the end of each chapter, and the correlation of specified dietaries could not be improved upon. If we may perhaps cavil at the including of vaccine treatments, without sufficient qualification, among the other more nearly proven methods of treatment, it does not detract from the value of the volume as one of the most useful that have recently been published. C. H. A.

Simplified Infant Feeding. By Roger H. Dennett. 385 pages. Illustrated. 2d edition. 1920. Philadelphia and London: J. B. Lippincott Company.

The title describes the book. The author avoids the complications of percentage feeding. He advocates whole milk modification for normal infants

and sets forth its principles and practice clearly and concisely, giving methods of calculation to fulfill caloric and food requirements. The common types of nutritional and gastro-intestinal disturbances and their treatment through feeding are discussed. All points are illustrated by clear and careful case histories. The chapters on breast feeding are excellent, and emphasis is laid on its importance to the infant and the means employed to avoid premature weaning. Other chapters cover travel, the premature infant, use of boiled milk, proprietary foods and other common problems.

A valuable feature is the careful outline synopsis of the text. There is new matter added in this edition and a revision of the chapters on diarrhoea. The book fulfills its purpose "to help the general practitioner and post-graduate student" in feeding infants and will be a valuable addition to a working library.

P. P.

The high price of arsphenamine (salvarsan) is a constant incentive to marketing useless fake substitutes, says the U. S. Public Health Service. Large quantities of such have recently been detected in New York City and elsewhere. These products should not be bought from unknown persons. The Public Health Service also renews its advice against the use of any arsphenamine not licensed and regularly tested by the Hygienic Laboratory of the Service.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

The Medical Clinics of North America. (Issued serially one number every other month). Volume 4 Number 6. By Boston Internists. Octavo of 297 pages including complete Index to Volume 4 and 35 illustrations. Per clinic year (July, 1920, to May, 1921). Paper, \$12 net; cloth, \$16 net. Philadelphia and London: W. B. Saunders Company.

The Surgical Clinics of North America. (Issued serially, one number every other month). Volume 1, Number 3. By Boston Surgeons. 345 pages, with 159 illustrations. Per clinic year (February, 1921, to December, 1921). Paper, \$12 net; cloth, \$16 net. Philadelphia and London: W. B. Saunders Company.

Essays on Surgical Subjects. By Sir Berkeley Moynihan, K. C. M., G. C. B., Leeds, England. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, \$5.00.

The Principles of Therapeutics, by Oliver T. Osborne, M. D., Professor of Therapeutics, Department of Medicine, Yale University. Octavo of 881 pages. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, \$7 net.

The Assessment of Physical Fitness. By Georges Dreyer, C. B. E., M. A., M. D., in collaboration with George Fulford Hanson, with a foreword by Charles H. Mayo, M. D. 127 pages. New York: Paul B. Hoeber, 1921. Price, \$3.50.

Soaps and Proteins. Their colloidal chemistry in theory and practice. By Martin H. Fischer, with the collaboration of George D. McLaughlin and Marian O. Hooker. 272 pages. New York: John Wiley & Sons, Inc., 1921.

Board of Medical Examiners

Board of Medical Examiners' Report on Result of Examinations held for License to Practice Medicine at Their Meeting June 28, 1921.

Tabulation by Schools Showing Number of Graduates From Each California School Examined, as Well as Graduates From Medical Schools Outside the States of California.

| | Passed | Failed | Total | % Passed | % Failed | Passed | Failed | Total |
|--|--------|--------|-------|----------|----------|--------|--------|-------|
| Physicians and Surgeons | | | | | | | | |
| University of California..... | 30 | 0 | 30 | 100 | 0 | | | |
| Stanford University | 12 | 0 | 12 | 100 | 0 | | | |
| Coll. Med. Evangelists..... | 17 | 0 | 17 | 100 | 0 | | | |
| C. P. & S. Med. Dept., U. S. C..... | 17 | 0 | 17 | 100 | 0 | | | |
| Oakland Coll. of Med..... | 1 | 0 | 1 | 100 | 0 | | | |
| Coll. of P. & S., S. F..... | 5 | 1 | 6 | 83 | 16 | | | |
| C. of Osteo., P. & S., L. A. | 6 | 2 | 8 | 75 | 25 | | | |
| Extra State Graduates of | | | | | | | | |
| United States | 24 | 1 | 25 | 96 | 4 | | | |
| Italy | 1 | 0 | 1 | 100 | 0 | | | |
| Mexico | 1 | 1 | 2 | 50 | 50 | | | |
| Japan | 0 | 2 | 2 | 0 | 100 | 28 | 5 | 33 |
| Canada | 2 | 0 | 2 | 100 | 0 | | | |
| Russia | 0 | 1 | 1 | 0 | 100 | | 84 | 15 |
| Drugless | | | | | | | | |
| C. of Osteo., P. & S., L. A. | 15 | 0 | 15 | 100 | 0 | | | |
| Extra State | 0 | 1 | 1 | 0 | 100 | | | |
| Chiroprapist | | | | | | | | |
| Cal. Coll. of Chiroprody..... | 11 | 1 | 12 | 91 | 8 | | | |
| Midwife | | | | | | | | |
| Extra State | 0 | 1 | 1 | 0 | 100 | | | |

New Members

Dr. Belle E. Merrill, Oakland; Dr. Henry F. Crandall, Oceanside; Dr. A. M. Gregory, Oakland; Dr. G. L. Chamberlain, Oakland; Dr. Mary Isabelle Armstrong, Oakland; Dr. W. L. Ellis, Calexico; Dr. George F. Farman, Santa Barbara; Dr. H. H. Searls, San Francisco; Dr. Miley B. Wesson, San Francisco; Dr. Francis B. Quinn, San Francisco.

Transferred—Dr. David A. Marsan, from Marin to Alameda county.

Deaths

Black, James Alexander. Died in San Francisco, California, September 17, 1921. Age, 52. Was a graduate of Kentucky School of Medicine and Surgery and Long Island College Hospital, New York, 1892. Licensed in California, 1893, and a member of the Medical Society, State of California.

Chamblin, M. R. Died in the Masonic Home, Decoto, California, September 6, 1921. Age, 92. Was a graduate from Jefferson Medical College, Pennsylvania, 1850. Licensed in California, 1886.

Patek, Robert. Died in San Francisco, California, August 25, 1921. Was a graduate from Johns Hopkins University, Baltimore, Maryland, 1906. Licensed in California, 1906, and a member of the Medical Society, State of California. Age, 40.

Long, Seely Frederick. Died in San Francisco, California, September 19, 1921. Was a graduate of the Medical Department of the University of New York, 1881. Licensed in California, 1881.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Editor and Secretary
Managing Editor

W. E. MUSGRAVE, M. D.
CELESTINE J. SULLIVAN

VOL. XIX

NOVEMBER, 1921

No. 11

MORE ABOUT THE YOSEMITE MEETING

This is a continuation of the editorial in the October number of the Journal, relating to the Yosemite meeting. If you have not read that editorial please do so.

Transportation and Hotels: All matters of every description regarding any phase of transportation or hotel accommodations have been placed in the hands of a committee representing the Yosemite Transportation Committee and the State Medical Society. The personnel of this committee is as follows:

Mr. H. H. Hunkins, Traffic Manager, Yosemite Transportation Co., 637 Pacific Building, San Francisco, Chairman of the Committee.

Dr. James H. Parkinson, 1601 I Street, Sacramento.

Dr. Morton Gibbons, 350 Post Street, San Francisco.

Dr. Paul M. Carrington, 809 Watts Building, San Diego.

Dr. T. C. Edwards, Salinas.

Dr. William H. Kiger, 711 Pacific Mutual Building, Los Angeles.

Mr. R. E. McCormack, Chief Clerk, Yosemite Transportation Co., 637 Pacific Building, San Francisco, Secretary of the Committee.

The Publicity Committee has an announcement which appears on page 446 of this Journal. Please read it.

There will be ample accommodations for every person who wishes to attend the meeting in Yosemite. The earlier the reservation, the more certain you will be to get what you want. Write to Mr. Hunkins' office without delay, stating your needs. At the same time ask the same committee regarding your transportation. The railroad companies are making provision whereby tickets may be purchased to Yosemite and return home, or they may be purchased to St. Louis for the A. M. A. convention, with stopover privileges of four days in Yosemite. The rates will be such as the railroad companies can arrange for under the rules of the association of terminal lines and as provided for by the Railroad Commission.

The committee on transportation and hotels will have its offices at 637 Pacific Building, San Francisco, and in ample time will transfer these offices to Yosemite Park. In the Yosemite office there will be present during the convention a representative of all the railroads, with power to visit and make necessary changes in tickets or to sell tickets.

Do not forget that the meeting is Monday to Thursday, the 15th to 18th of May.

The program will be published in February and those interested in contributing papers should address the secretary of the appropriate section (list published on page 447 of this Journal) without delay.

Any question or problem of any description should be promptly communicated to the Secretary of the State Society.

ABOUT "FEE SPLITTING"

There is a growing confusion and not a little misunderstanding in the minds of many physicians regarding "fee splitting." The evidence seems to indicate a certain amount of definite encouragement of both the confusion and the misunderstanding.

The Principles of Ethics very specifically and quite properly condemns the *secret* division of a fee. It is also unprofessional to give or receive a commission. In other words, it is degrading and unprofessional for a physician to be a party to any transaction that permits payment for anything except for services rendered to the patient. On the other hand, each and every physician actually rendering service to any patient is entitled to share in whatever compensation is available for the composite service. The Principles of Ethics specifically provide for this situation in the latter part of Section 3 of Article VI:

"It is also unprofessional to divide a fee for medical advice or surgical treatment, unless the patient or his next friend is fully informed as to the terms of the transaction. The patient should be made to realize that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient."

This section provides quite definitely for divisions of a fee, protects the family physician in charge of the patient and the patient or person who pays the bill. It quite definitely provides that the patient must be fully informed of the arrangements for the division of the fee among all those who have served, and intimates with sufficient clarity that the family physician should assume a responsible role in such transactions.

There is nothing that is confusing or difficult to understand in our ethics. They condemn *secrecy* in the apportionment of earned fees; condemn

the payment of fees from any person to any other person by rebate, commission or in any other manner for any purpose, except professional services rendered, and they provide a perfectly clear method by which each and every physician rendering service may have his earned share of whatever funds are available for the purpose.

With these facts before the profession, there is nothing surprising in the growing resentment that is being expressed against any person or organization that condemns the proper division of fees in accordance with the expressed ethics. The actions of some few who have been attributing virtue to themselves by keeping the whole fee, where service has been rendered by more than one physician, under close analysis are found to be in violation of the letter and spirit of our published ethics and their policy open to the criticism of fundamental selfishness.

"EVANGELISTS" OF SORTS

This appears to be the season for evangelists (?) in California. Some of these sensational, notoriety seeking psychopaths ought to have the attention of our sane community service organizations. The charlatans of the past were usually both religion and health fakers, acrobatic in gesture, strong in voice, with little regard for the truth and often ignorant. History is repeating. Today, as yesterday, they practice medicine behind a cloak of false religion rather than with a license based upon education, and they play upon the prejudices, jealousies and shortcomings of the emotionally inclined persons who go to hear them. They always leave behind them an exhausted, disappointed group of "believers" and a lot of jealousies that are hardly healed before another of their kind appears to reopen the wounds.

It is difficult to understand how so many of these psychopaths get permission to operate their circuses under the cloak of religious denominations that we have all been taught from childhood to respect.

MONKEY TESTICLES AND "LOST MANHOOD"

Certain elements of the public press and a few physicians who have apparently traded their ideals and ethics for temporary public notoriety are out to restore the sexual powers of a lot of old men by the transplantation of monkeys' testicles. The next step in this circus type of research probably will be to use the ovaries of the female ring-tailed monkey to restore the sexual powers of jaded women. We are due to read a lot about "hormones" and a lot of other hypothetical substances before we see the last of this propaganda, unless the financial response from the public fails to warrant a continuance of the "experiments" and the advertising. It is interesting to speculate upon the future influence of the "monkeyized" group of our fellow citizens upon such important questions as reform in dress and the determination of parentages. Speculations regarding its effect upon posterity by these would-be youthfals we leave for consideration by eugenic societies.

AN ANATOMICAL STUDY OF EIGHT CASES OF DEGENERATION OF THE CORNEA.

By CHARLES MAGHY, M. D., Chicago.

Under the title "Degeneration of the Cornea" we distinguish chiefly four forms—hyaline, calcareous, colloid, and amyloid. These degenerations have already been considered clinically and histologically by many authors, whose opinions regarding their origin and the mode of formation do not coincide. Moreover, the homogeneous, highly refractile, organic degenerative material, which appears clinically as yellow spots in the cornea, has been termed by different authors: colloid, hyaline, and amyloid, respectively.

I will first mention briefly the hitherto expressed important opinions of the origin and mode of formation of this material.

Degeneration of the cornea was first described by Baselin as amyloid, in an eye that was staphylomatous. He found in the superficial layers of the scar of the human cornea peculiar, highly refractive, organic masses of various shapes, not unlike those pictures which Goldzieher, Saemesch, Wedl and Bock described as colloid of the cornea, which, however, with a 2 per cent iodine solution gave the typical amyloid reaction. Baselin is of the opinion that the refractile masses are in no way related to cells of the epithelial layer, and when found in this situation have invaded the same from the stroma cornea below.

E. von Hippel arrived at the same conclusions regarding the amyloid reaction. He regarded the refractile masses as taking their origin from altered red blood cells.

Saemesch described in the epithelial layer and in the scar tissue of the cornea the appearance of rounded, drop-like and faceted cavities with thickened walls, formed by material which had a strong light-refracting capacity, which might be considered colloid bodies.

Goldzieher described in a scar staphyloma immense accumulations of colloid in the superficial layers of the cornea.

Wedl and Bock mentioned the appearance of colloid bodies in the cornea of eyes that showed nutritional changes.

Schiele considered the refractile masses were not of an amyloid nature, but were composed of glycogen.

Kamocki claimed the homogeneous, strongly refracting globules were hyaline in nature, from the manner in which they stained.

Baquis expressed the opinion that colloid and amyloid might have the same origin, or at least bore a close relationship. In his opinion the colloid material took its origin from the epithelial cells, or from the fluid circulating in the cornea.

Vossius considered the calcareous deposits were secondary to an inflammatory growth of the connective tissues, the refractile masses breaking through Bowman's membrane.

Sachsaler concluded that the refractile bodies were always extra cellular and primarily belonged to the cicatricial tissue, and when found in other parts of the cornea, they arrived there secondarily.

Birch Hirschfeld believed the refractile bodies

were hyaline as von Recklinghausen applied the term. This author points out that hyaline is possibly an antecedent stage of amyloid degeneration; this at least would tend to explain the amyloid findings of Baselin and von Hippel as being cases of longer standing.

Wyssokowitsch considers hyaline degeneration as a change of the endothelium and its derivatives as well as of the tissues genetically conceded with it, keratohyalin and colloid, as changes of the epithelium, the former of the flat, the latter of the cylindrical.

Rubert does not hesitate to declare the refractile bodies are hyaline and believes Trachoma is associated or has preceded the attack in all cases.

Von Recklinghausen applied the term colloid to all the homogeneous transparent-looking substances, including mucin, colloid and amyloid, and reserved the term hyalin for a special group, which, according to him, is characterized by the following peculiarities: It resembles amyloid in physical characteristics, but does not react to Iodine; it stains deeply with acid dyes, such as eosin and acid fuchsin.

Ernst differentiates two groups of hyaline substances, colloid and hyalin, by means of the reaction to Van Geisen's picro-acid fuchsin solution. According to him, true hyalin stains with acid fuchsin alone and appears a deep red color, while colloid stains with both picric acid and acid fuchsin. He believes hyalin has its origin from the connective tissue or from the blood vessels. Von Kahlden claims that colloid often stains a deep blue.

Unna has shown that in the skin connective tissue cells can give rise to the so-called true hyalin, of which part is acidophilic and part basophilic, while the intercellular substance gives rise to colloid.

According to Fuchs, Zonular Opacity of the cornea is the most frequent of the pathological types of the dystrophies. It forms a grayish band from 3 to 5 mm. broad, which passes straight across the cornea, a little below its center. It develops with extreme slowness, occupying years in its progress, the first parts to appear being the two terminal points of the opaque band; that is, the portions of the opacity lying nearest the upper and inner margins of the cornea. These points are always separated from the margin of the cornea by a narrow, transparent zone. Starting from there the opacity gradually pushes its way toward the middle line, where the two parts of it unite, and thus close in the opaque zone which covers the lower half of the cornea. This zone is, accordingly, broadest and most opaque at its two extremities, these being its oldest parts.

On examining the opacity more closely with a corneal loupe, we ascertain that the opacity, which is sharply defined on all sides, is composed of minute white or grayish dots which lie somewhat superficially in the epithelium or directly beneath it; for this reason we often find the surface of the cornea over the opacity roughened like shagreen or covered with minute prominences. Often in the midst of the opacity we see roughened or rounded areas which are clear, or the opacity is

traversed by fissures or chinks, and portions of the opacity may actually drop off altogether.

Zonular opacity of the cornea generally develops in eyes which have nearly or quite lost their sight in consequence of some intraocular affection (iridocyclitis, glaucoma), and in this case it is of practically little significance. It is only very rarely (and then only in elderly people) that we encounter it in eyes which are otherwise sound, so that here the corneal opacity itself is the sole cause of the disturbance of vision (senile zonular opacity).

PUBLIC HEALTH AND MEDICAL WELFARE

By PHILIP KING BROWN, M. D., San Francisco.

The medical profession is confronted with a series of problems which concern its relation to the community, its welfare and its independence. It has before it the unique position of maintaining the health of the people by preventing disease, of ministering to the sick, rich and poor alike, advancing its standards constantly, resisting overexploitation at every hand by social reformers, economists, and radical legislators, defending itself and the community against the inroads of patent medicine venders, against an almost universally hostile press, who get no advertising fees from doctors; against quacks, who live by false exploitations of advances in medical science, and against new schools of so-called medicine formed to receive those who cannot reach the standard of the regular school and who realize that the great public can be fooled a large part of the time, and that medicine offers a wonderful opportunity to reach the public when its defenses are poor. No other profession and no business of a public service order has anything like the struggle against exploitation, contamination and unfair competition that the medical profession has. If it raises its standard and excludes the unfit, it is called a trust. If it encourages quarantine against contagious disease or insists on vaccination, it is abusing the sacred privilege of a free land. It is small wonder that fewer and fewer men enter the profession, and as a consequence the graduates have fallen off at the rate of a thousand a year for the past fifteen years, so that today not more than half enough doctors to supply the need enter the field each year.

The consequence of this growing shortage of doctors is a greater activity on the part of all the jackal elements on the one hand, and on the other an effort on the part of social reformers to spread out the care of the sick by one means or another, so that everybody shall have a little medicine, rather than that the rich get it all and leave the poor to the patent medicine vender and the quack. It is very plain that some changes must come in the interests of both the profession and the community. Shall the profession stand by and allow itself to be exploited by all sorts of legislation conceived by men and women who mean well, and have seen and known of such legislation working more or less well elsewhere, but who know absolutely nothing of the advancement of medicine, or what medicine needs, and who do nothing whatever to assist medicine to attain these needs?

The poor in times of stress are half-clothed and poorly shod; they may suffer from hunger in the face of plenty of stored-up food, and they may feel the cold when fuel may be bought from profiteers, but has any society for the study of the even distribution of surplus commodities proposed any legislation for the support of the improvident or the redistribution of all surplus assets, including money? No, it is only the medical man whose efforts are to be directed by legislation if he does not protest.

There is a form of protest that would help materially if it could be worked out properly and justly and could receive the support of the profession, and that is in raising the demand for government support of all accessory means of diagnosis and consultation when necessary, and government subsidy of hospital beds in "health centers" in thinly populated districts. The reason for these centers and their scope are outlined.

It is absolutely essential in economizing time in the making of diagnoses that every means of study of cases be made at the earliest moment possible. It must not be felt by the rural population that only in big centers, in university hospitals, or from high-priced specialists can they receive adequate care. Nor should the poor man feel that he or his loved ones must needs die because the expensive resources of modern practice are beyond his purse. It is not the doctor that he is afraid of, but the prohibitive cost of hospital care, private nurses, X-ray and laboratory investigations. His doctor, he has learned, can be reasoned with if insistent on his pay, but the others he must pay for or do without.

Let us see what doing without means to the doctor. A patient with a bone lesion is incapacitated from work, and in consequence his wife and four children have no means of support beyond their savings. The family doctor would like both an X-ray of the bone and a Wassermann test, but he hesitates to ask for these because of the cost, and in consequence he keeps on with the remedies, which he has begun to suspect are of no value. In a large city with a well-equipped free city hospital the man might be sent there, but in that event the patient and the study of the case are lost to the family doctor. The man's pride may prevent his accepting the city charity, and in the meantime the bill for medicine and medical service mounts up to far more than the full cost of original laboratory investigation. A conscientious physician hesitates to put his patients to needless expense of unnecessary studies, and frequently by this fact he assumes a responsibility that is unfair both to him and to the patient. If the case turns out to be other than a simple matter, as it will in a fair percentage of cases, the delay may be paid for by the life of the patient, or a protracted illness with grave complications. The constant surprises uncovered in well-equipped hospitals by routine studies of blood reactions and X-ray studies, make for more careful clinical work and for better controlled surgery. Both are in the interest of the patient and doctor alike, and it has come to be more and more a routine to leave no examination unmade that might throw

light on a case in any way. We try not alone to measure the extent of disease, but the function of the apparently unaffected parts of the body.

The surprising defects uncovered by the draft examinations have worked both to safeguard childhood with better medical supervision and to correct many defects in the interest of preventing the later disturbances of advancing age. Much of this work is bound to come under the natural operation of organized efforts in preventive medicine, and already in some cities every public school has a dental chair, and there is a municipal clinic for nasal and tonsil work, where hundreds of children are dealt with weekly. All of this preventive work and its educational aspect should be done under the Health Center, which should be in every way the Health Educational Center of the community, licensed and endowed by the State.

Let us review briefly what the Federal Government, the state and the municipality are already doing for better health, in order that we may see how much of the work of ideal health centers is now being done in an incoordinated way. First, the Federal Quarantine Act and the Interstate Quarantine Act provide against invasion from outside, and a very strict supervision of outbreaks like yellow fever, plague, etc., when they do invade our country. The Public Health Service is constantly alert to progress in the therapy of acute disease, and its laboratories are contributing regularly to this field. The state has taken over the care of some of the chronic conditions and gradually is extending this care. The insane and feeble-minded have become recognized wards of the state, and gradually the tuberculous are being provided for in state sanatoria or state subsidized county institutions. In Massachusetts, the superintendents of such institutions serve as traveling consultants in chest cases, and have contributed to earlier and better diagnosis of chest diseases. State laboratories in our University will make any sort of examinations of blood, urine or feces for towns too small to supply this service. State health officers are available for the investigation of any unusual epidemics. The state has practically assumed the care of accident cases in industry, and is rapidly extending it to industrial diseases. The counties and larger municipalities are gradually extending medical care and the expert study of medical cases to larger groups, notably school children, and to all cases of contagious disease where the health of the community is acutely at stake. The Federal Government and the municipalities, assisted occasionally by funds from states, have undertaken the program of controlling venereal disease, and disseminating education on this subject. It is obviously a public health measure worthy of the maximum support from the medical profession and a bond between the profession and the state, offering great opportunities of increasing the close working together of these bodies.

Free clinical facilities for the poor are confined largely to the centers of population, and are really inadequate even there. They are made up of out-patient departments of medical schools, where

the largely uninteresting mass is handled, often hastily and badly, for the sake of the few cases interesting for teaching purposes. This is not true of our better schools, but the struggle of schools for support has led to abuses in their social service departments, which are too often concerned with how much the patient has and how much he can pay. The second group of clinics are connected with out-patient departments of hospitals, and they are maintained as feeders for the hospitals. Again, it is not the interest of the patient that is always uppermost in such clinics. The third group of clinics are supported by church organizations or charities or groups of medical men desiring special and increased clinical opportunity not possible for them in existing hospitals or clinics. Most of this sort of work is spasmodically done, and much of it poorly done. All such clinics like life insurance companies and medical schools should be obliged to maintain certain minimum standards.

The need of all clinics could be provided for in health centers, and the need of doctors for clinical experience could be equally and far more justly and evenly divided in the same way. If organized medicine underwrote the medical and surgical work of health centers, every medical man in every community would have his term of serving under able clinicians in any special line he chose in health centers, and he would have the opportunity of keeping himself constantly abreast of the times while rendering his share of public service.

The paid staffs of such centers must, indeed, be experts, *on salary*, and the very popularity of the men who contributed the most to their neighborhood practitioners would be a check on the standard of work done.

New York State has a bill for the establishment of health centers, and the American Medical Association a year ago proposed the study of an ideal bill of this kind to provide for just the purposes outlined in this paper. It is group medicine at its best, and it is the most needed influence in medicine today. An abstract of the New York bill is given:

Purposes: 1. To provide for the residents of rural districts, for industrial workers and all others in need of such service, scientific medical and surgical treatment, hospital and dispensary facilities, and nursing care, at a cost within their means or, if necessary, free.

2. To assist the local medical practitioners by providing:

- (a) Facilities for accurate diagnosis by a co-ordinated group of specially qualified physicians and surgeons, both for hospital patients and for out-patients.
- (b) Consultations and advice as to treatment by medical and surgical experts.
- (c) Clinical, bacteriological and chemical laboratory service and X-ray facilities at moderate cost or free when necessary.

3. To encourage and provide facilities for an annual medical examination to detect physical defects and disease, and to discover conditions favorable to the development of disease, and to indicate methods of correcting the same.

4. To provide or aid in securing adequate school medical inspection and school nursing service. (In co-operation with the Department of Education.)

5. To secure our aid in securing better enforcement of the Public Health Law, and a more effective administration of Public Health activities within the area served.

6. To provide a Public Health nursing service adapted to and adequate for the community served.

7. To aid in securing the dissemination of information in regard to Public Health throughout the area served.

8. To aid in securing adequate compensation for medical and surgical care rendered in hospitals and clinics, in order that efficient service may be everywhere available.

9. To provide laboratories, group diagnosticians, consultants, and hospital facilities in the smaller cities and rural districts, and to counteract the growing tendency of medical practitioners to remove to larger centers, and to attract to and to retain in the practice of medicine in these communities a larger number of qualified practitioners of both sexes.

10. To provide medical libraries including books, pamphlets, periodicals, leaflets, exhibits, moving picture films, and kindred educational facilities, with halls for meetings if needed.

11. To provide hospital and other necessary resources for dealing promptly with epidemics.

12. To reduce illness and disability among the industrial workers of the state by providing prompt and accurate diagnosis and efficient treatment for sick and injured workers and the members of their families.

13. To co-ordinate Public Health activities within the districts.

Health Centers:

Health Centers: A health center may consist of the following parts:

- (a) Hospitals.
- (b) Clinics for out-patients.
- (c) Clinical, Bacteriological and Chemical Laboratories.
- (d) District Health Service.
- (e) Public Health Nursing Service.
- (f) Center for School Medical Inspection.
- (g) Headquarters for all Health, Medical, Nursing, and other Public Welfare Activities.

Board of Supervisors shall have the following powers:

1. Purchase, sell, lease or exchange real property for this purpose.

2. To contract for erection of necessary buildings or alteration, etc.

3. To cause money to be assessed, levied, and collected for lands, buildings, etc., as may be necessary.

4. To accept and hold in trust for county any grants or gifts for said health center.

5. To appoint board of managers of health center.

Board of Managers shall have the following powers and duties:

1. To appoint superintendent of health center.

2. To fix salaries of superintendent and other officers and employes.

3. To manage and control health center (grounds, building, officers, physicians, inmates, etc.).

4. To make rules for care of patients, and for fees.

5. To erect additional buildings and make needed improvements.

6. To employ Public Health nurses for visiting and follow-up of cases.

7. To appoint a medical board.

8. To appoint and employ medical, surgical and laboratory staff of center.

Superintendent, the Executive Officer of All Activities of the Center. Duties:

1. Equip health center hospital and its other parts.

2. Supervise and control internal affairs.
3. Appoint other needed employes except attending M. D.'s.
4. Keep records and accounts.
5. Receive patients from health district (or from without, under special conditions).
6. Determine ability of patient to pay and regulate charge accordingly (unpaid cost of maintenance to be a charge on the district).
7. Keep records of patients' treatment and care.
8. Discharge patients.
9. Collect moneys due the Center and keep records thereof.
10. Give a bond before entering on duties.

(Nothing shall be construed to repeal, alter or amend municipal law in cities in re: hospitals. Existing health centers shall continue to function, and state aid may be given with approval of State Health Commissioner. Sub-centers may be established.)

State Aid:

1. For hospitals, half of cost; not to exceed \$750 per bed, and not to exceed one bed to five hundred population.
2. Seventy-five cents per day per free patient.
3. Grant for each clinic half of cost; not to exceed \$5000 per clinic.
4. Grant for treatments at half cost; not to exceed 20 cents per capita.
5. Grant for laboratories half cost maintenance; not to exceed \$3000 per year for each laboratory, and \$1500 per year toward initial cost.
6. Grant 10 cents per capita per year towards salaries of deputies in districts less than 1500 population. Five cents per capita per year in districts of 1500 to 3500 population (in addition to salaries from treasury).

No state aid in excess of above amounts where districts have more than 50,000 population if more than one center to each 50,000 population. No grant hereinbefore provided for shall be given to institution established at passage of this Act, except clinics for maternity care, children, tuberculosis and venereal disease.

Salaries and expenses of experts paid from maintenance funds.

Work of center inspected and standardized by State Health Department.

Provision for periodical consultations and clinics by specialists.

Center laboratories under supervision by director of State Laboratory Service.

Dr. Billings, in a recent article, refers to the New York law as not giving sufficient consideration to the welfare of the medical profession. I believe that this could be overcome very easily by the underwriting of the clinical work of the health centers by the organized medical profession and the payment of salaries to the men while on duty there. The demand for the diagnostic resources for the health center should never interfere with the doctor's personal relation to his patient whether that patient pays him a fee or not. The crux of the whole situation is absolutely dependent upon the maintenance of the relation between the doctor and the patient.

SUMMARY

The past is to be regarded historically, merely that we may estimate the extent and rate of progress.

In the interests of all concerned, better medicine must be practiced and more prevention.

The medical profession must ally itself with the state against the loose handling of half the job and interference with the handling of the other half.

It is better that the profession guide the state in this matter than that the state exploit the profession. In the one case the state can encourage the high standards of medicine and make available its every resource to the people, and enable even the country practitioner to keep abreast of all progress, while in the other the state farms out the care of its ill-paid citizens to anyone who will compete for the job. Under such a plan there is no incentive to progress among doctors, and one more item in the family budget can be stabilized by reformers, one less incentive to attain a better level is removed, and society brought a bit nearer the machine-made and spiritless existence of the pacifist's dream.

The state and county subsidized health center is not a perfect solution to the problem of ideal medicine, but it will go a long way to bring the best that medicine affords into far more homes than now enjoy it, and lighten materially the burdens on the profession. It will establish in the whole community wholesome influences against the vicious propaganda of the quack and the patent medicine vender, it will take post-graduate teaching to the doctor who cannot leave his community to get it, and in the end it will be a decidedly educational influence for better health, better standards and better support of medicine by the people, with fewer inroads from the pseudo sciences.

NEUROLOGICAL FINDINGS IN ONE THOUSAND GROUP STUDY CASES

By THOMAS G. INMAN, M. D., San Francisco, Cal.

In the practice of medicine a large portion of the medical man's duties consists in the making of the diagnosis. Indeed, there are members of the profession who openly state that this is the most important part of medical practice, and thus there has arisen in recent times specialization along the line of diagnosis and consultants, and diagnosticians have been accepted as justifiable adjuncts to the medical body. As if in answer to the question, "What ails the patient?" there has arisen a great list of names in medical nosology, each of which is supposed to stand for a definite clinical entity, and the art and science of diagnosis are directed upon the search for a combination of symptoms and findings to which one of these names may be given. This system does very well for those diseases which make their presence known by specific symptoms, run characteristic courses, produce definite effects upon the body and cease their activities by one or another of the possible terminations. Of such are the diseases of infectious origin, the specific poisons, certain defects in organ functioning, and the like. But the aid of the physician is frequently sought for the relief of symptoms which cannot by any manner of means be charged to the effect of any single condition. Different organs of the body may be involved, often producing reactions in one case entirely out of proportion to the amount of pathology present; in another, showing abundant pathology without the presence of any symptom pointing directly to the system involved. The chronically sick individual often presents definite dis-

ease in several apparently dissociated parts of the body, and it is often very difficult to give to each its proper measure of blame in the production of symptoms. Viewed from the angle of the physician trained in one special field, the case presents quite a different aspect from that seen by a physician whose training has been along different lines. It is to this fact that Sir James Mackenzie² referred when he stated that, "When a person falls ill nearly every organ of the body may be disturbed and each specialist has no difficulty in detecting symptoms belonging to his particular branch. In consequence of this we find that confusion of diagnoses which results when a patient consults a number of specialists."

It is now nearly six years since Dr. Fayette Watt Birch began the development of a plan having for its object the complete examination of patients and the recording and accumulation of the observed data. A number of men, specializing in the different branches of medicine, allied themselves with him and set to work upon the formation of a scheme whereby patients presenting themselves for examination could be viewed from the angle of the various specialists and the results correlated by consultation *en banc* by the assembled members. Since the services of the members were given gratuitously, all moneys derived from patients being used for the purchase of apparatus and the payment of technical assistants, the method was known as Group Study. This name has been retained, and in its essential features is different from Group Practice, in which the main interest lies in the business part of the organization.

It has been pioneer work, and had the numerous difficulties which beset the thorny path been visible from the first, the attempt would never have been made. But to those who, even in these commercial times, still believe that ideals come before monetary considerations, and that the practice of medicine is a profession and not a business, the ends achieved have warranted the collective effort put forth. It is with the intention of bringing to your notice a few observations gathered from Group Study that this report is made.

The occasional need for this type of medicine has been well expressed recently by Sir Henry Morris¹ as follows: "The development of medical and scientific knowledge brings into use improved material means of investigating and treating disease, which are incompatible with the old exclusively personal relations between doctor and patient."

The time has long since passed when any one mind can know all there is to know of even the practical side of medicine. Information furnished by laboratories alone must now be obtained from widely different sources. No single-handed clinical study is capable of supplying all of the evidence which most diseased conditions present. Of what benefit is it to know that a patient shows a positive Wassermann in his blood when only the most painstaking examination of the whole body, requiring special knowledge in several different branches of medicine, can estimate the amount of structural damage the disease has

caused? There may have been a time when it was necessary to know only that an individual had syphilis in order to outline the treatment of that period, but the physician who, today, hangs his therapeutic armament on such a slender thread not only invites defeat of his aims, but places the future well-being of his patient in jeopardy. The practicing physician who possesses the necessary accomplishments to make a satisfactory and complete survey of such an individual is rare, but the number of members of the profession who are desirous of obtaining the information which such a survey can furnish is on the increase. For these, Group Study opens sources of information hitherto denied them, and places in their hands the necessary prerequisite to efficacious treatment.

There has been a great deal written about Group Medicine in recent years. While opinions vary as to the practicability of this type of medicine, the view is widely taken that Group Medicine does fill an obvious hiatus in the present state of medical practice. That it has any place, other than an academic one, in the handling of the common run of diseases is doubtful, and it will never replace even the moderately well-trained physician in the care of the common, well-defined diseases which daily confront the general practitioner.

But there are border-line and mixed cases, those which present disease in forms not well understood where several body systems or organs are affected with no symptom pointing directly to the organ or part involved, and which for their proper interpretation require minds trained not only in the several branches of medicine, but also experienced in the general features of medical practice.

The patients examined by the St. Luke's Group show quite well, in the multiplicity of their present and past complaints, the type of individuals to which I refer. In the one thousand cases, 683 gave a total of 1756 complaints referable to the nervous system. The incidence of these complaints was as follows: Nervousness, 494; pain, 371; depression, 189; numbness, 181; weakness, 175; paræsthesias, 90; tremor, 87; sleeplessness, 68; dreams, 56, and flushes 45. However, there were only 334 actual neurological diagnoses, and of these 224 were of uncertain organic nature. It would appear, then, that a very large proportion of the complaints referred to the nervous system were the outcome of disease elsewhere in the body.

Of the diseases of the nervous system 110 were of known organic nature. Brain tumor was diagnosed 7 times, caudal tumor 3 times, combined sclerosis 1, cerebral diplegia 3, hemiplegia 1, Parkinson's disease 1, lethargic encephalitis 2, myelitis 2, neuritis 7, peripheral neuritis 4. Syphilis involved the nervous system as C. S. syphilis 69 times, as tabes 4 times, and as paresis 3 times. In the group with a pathological foundation of unknown nature, epilepsy with deterioration was diagnosed 18 times, and epileptoid attacks without demonstrable deterioration, 18 times. There were 40 diagnoses of thoracic neuralgia, 25 of occipital neuralgia, 7 of trigeminal neuralgia, and 1 of obturator neuralgia. There were 65 cases in which a diagnosis of psychoneurosis was made

without the type being definitely stated, 6 of hysteria, 6 of anxiety neurosis, 14 of neurasthenic state, and 3 of psychasthenia. Of the insanities, 4 were diagnosed as toxic psychoses, 3 as maniac-depressive, 2 as dementia praecox, and 1 as hypochondriasis.

That pathological conditions elsewhere in the body frequently exert their first noticeable effects upon the nervous system is well known, and we have found this fact to be true in a large proportion of our cases. With only 16 per cent of the cases with nervous symptoms showing definite disease of the nervous system, it seemed that it might be of interest to tabulate the other diagnoses noted in the 683 cases. They are as follows: Mucous colitis, 386; infected teeth, 370; infected tonsils, 295; infected prostate, 133; cholecystitis, 45; infected tubes, 12; infected sinuses, 8; arterio-sclerosis, 196; arthritis, 174; lues, 90; visceroptosis, 151; toxic cardiopathy, 28; nephritis, 25; thyrotoxicosis, 90; hypothyroidism, 14; lack of pelvic support, 25; hemorrhoids, 14; gastric ulcer, 7; duodenal ulcer, 10; lac. cervix, 10; abdominal adhesions, 5; pernicious anemia, 4.

The only generalization that I care to make at this time is concerned with the multiplicity of diagnoses. Individuals are affected differently by disease and react in accordance with certain laws not well understood, or, at least, not easily deducible in current terms. In the presence of a number of known pathological conditions, the duty of the physician would seem to be clear, and that each condition should be cleared up where possible. Sound judgment based upon experience will determine which focus of disease to attack first, since in many instances there is one primary condition which may be responsible for a number of secondary ones.

Group study has brought to our notice some facts of interest in dealing with patients showing marked neurotic tendencies. It has been our rule in the past, in those cases where the special type of neurosis could not be positively determined, to make a diagnosis of psychoneurosis. But since in many of these cases more or less definite somatic pathology could be demonstrated, this diagnosis has been recorded with diminishing frequency in the past year. I have come to feel that an individual should be observed in a state of sound physical health before being classed as a psychoneurotic.

In the sixty-five cases in which psychoneurosis was recorded there were 235 diagnoses of somatic disease or 3.6 per patient. Mucous colitis was present 41 times, infected teeth, 32 times, infected tonsils, 26 times, infected prostate, 7 times, toxic heart, 5 times. Arthritis was diagnosed in 20 cases, thyrotoxicosis in 17, arterio-sclerosis in 15, visceroptosis in 15, tuberculosis in 7, and lues in 2 cases. Various other pathological conditions occurred with less frequency.

In these days when so much misdirected effort is expended in the administration of psychotherapy, to the exclusion of treatment for definite physical disease, the foregoing tabulation gives one food for thought.

CONCLUSIONS

1. Group study provides the opportunity for the study of disease and its effects in a measure not possible by one physician alone.

2. The method lends itself to the interpretation of disease in a small number of obscure cases.

3. In the presence of a number of pathological conditions in the same patient, due attention must be given to each in estimating the source of the presenting symptoms.

4. No attempt should be made to treat an individual as a psychoneurotic until a complete examination has been made and organic pathology removed.

1. Morris, Sir Henry, *Lancet*, Feb. 1, 1919.

2. Mackenzie, Sir James, *British Medical Journal*, Jan. 29, 1921.

1168 Flood Building, San Francisco, Calif.

METABOLISM STUDIES IN PULMONARY TUBERCULOSIS

By R. A. KOCHER, M. D., San Diego, Cal.

This study was carried out in the summer of 1920 at the Trudeau Sanatorium at Saranac Lake, New York, with the aim of finding some rational basis for feeding in pulmonary tuberculosis. In the past this has been largely empirical, and the recent changes of policy from the use of an abundant diet to one of moderate calorie content was prompted by the clinical observation that overfed patients did not do well.

This investigation was carried out along two lines; first, a study of the calorie requirements of patients as measured by their basal metabolism, and second, a study of the creatinin output of patients in various stages of the disease and of nutrition.

The respiratory studies were carried out with the use of the Benedict portable apparatus on fifteen afebrile patients in various stages of the disease from incipient quiescent cases to the active far advanced. About half of the patients were confined to bed at the time the work was carried out, the remainder were ambulant. The experimental data are shown in Table I. The degree of pulmonary involvement is shown in column 3, and is expressed in terms of the Turban classification. The basal metabolic rates are shown in column 9. The basal heat requirements are within the limits found for normal subjects. A few determinations were made with febrile subjects, not recorded here. The effect of the fever on the metabolic rate corresponds to that in other diseases, such as typhoid fever. These results correspond with the findings of McCann and Barr, published since the present work was completed.

None of the patients showed such increase in metabolism as noted by E. Grafe in very severe progressive cases, where there was evidently a toxic breakdown of body tissue, raising the metabolism 20 to 30 per cent above normal in certain afebrile cases.

From this experimental evidence it is apparent that the afebrile tuberculosis patient requires no more calories in his diet than the normal subject. The well person at rest in bed requires no more than twenty to thirty calories per kilo-gram of body weight. Is there any object in giving the

tuberculosis patient more than the minimum requirement? In deciding this question, several things must be considered. First, the activity of the tuberculous process and second, the weight of the patient at the time he comes under treatment. We must bear in mind that the most important single element in the treatment is rest, not only to the organism as a whole, but to the diseased lung itself. If we increase the food intake above the basal requirement, we increase unnecessarily the amount of work of the tissues of the body and also the work of the lungs, since the rate and depth of respirations are both increased to meet the increased oxygen requirements. To test the effect of a large meal on metabolism as compared with a smaller meal of the same kind of food constituents, an experiment was carried out in which one thousand calories were given in one case, and five hundred calories in another. There was an increase of 20 per cent in the minute volume of the lungs after ingestion of the larger meal as compared with the smaller. The significance of such a small increase in respiratory rate as two respirations per minute is only appreciated when we compute that this means an increase of almost three thousand more inspirations in the twenty-four hours, and inspirations of greater depth than on the lower calorie diet. If rest to the diseased lung means anything in treatment, it is worthwhile to avoid this increased respiratory effort without depriving the body of the necessary food for maintenance.

Besides increasing the work of the lungs at the time such an increased diet is taken, we cause an increase indirectly by bringing about a gain in weight, which also increases the minute volume of the lungs. Effort to bring about a gain in body weight should, therefore, be postponed until the diseased process in the lung has become completely arrested.

If then we keep the diet down to the minimum requirement as to basal calories, what is the most favorable ratio of the three chief constituents—proteins, carbohydrates, and fat? Each of these classes of foodstuffs in the normal subject has a specific effect in raising the basic metabolic rate, protein having a much greater action than either fats or carbohydrates. In order to determine whether this action is the same in tuberculosis subjects as in the normal, measurements of the rate of respiratory exchange were made after the ingestion of known quantities of protein in the form of 400 grams of meat. The results are shown in Table II. The increase of 30 per cent corresponds to the rise found in normal subjects. There is an increase of 20 per cent in the minute volume of the lungs, as compared with the basal minute volume.

It is apparent from this experiment that it is of distinct advantage to restrict the protein intake to the minimum necessary to maintain nitrogen equilibrium and make up the calories, which are also restricted during active disease to the minimum, largely of carbohydrates and fat. It has been shown recently by Sherman that this can be done with normal subjects at bed-rest on a diet of .5 grams of protein per kilogram of body weight.

For persons of average weight, say 150 pounds, this is about 30 grams of protein in twenty-four hours. So much for the diet during activity of the tuberculous process.

When the disease process has become entirely arrested, the principles governing the diet are quite different. It no longer becomes the prime consideration to keep the lungs at the greatest possible rest. It now becomes necessary to consider the diet from the standpoint of enabling the patient to regain any weight which may have been lost during the early febrile period of the disease. During the febrile period of any infectious disease it has been shown that there is a toxic breakdown of protein which high calorie feeding is powerless to check so long as the temperature remains elevated. During the period of convalescence, when the process is no longer active, the feeding can be directed toward replacing the lost weight, and this requires a well-balanced diet containing a liberal quantity of protein at this stage in order to favor nitrogen retention. Ordinarily, the gain in weight obtained in the convalescent tuberculosis patient is largely a gain in adipose tissue, and not a gain in protein. To determine the character of this gain in weight, in the present study, recourse was had to the determination of the creatinin output of a number of arrested, convalescent cases of pulmonary tuberculosis at various stages of their gain in weight.

Let me call attention here to the significance of creatinin in the urine. It was first pointed out by Shaffer that creatinin in the urine, on a creatinin free diet, is purely endogenous and is a product of muscle metabolism. It is not increased as a result of exercise. Its amount in the urine is determined by the muscle mass and not by the body weight per se. Therefore, creatinin amount in the urine may be an index of the functional capacity of muscles, because of its proportionality to the mass of active contractile tissues. The application of creatinin determination in the urine to our problem, therefore, consists in this, that it gives us an index of the functional efficiency of the organism. Body weight gives us a distorted view of this functional efficiency. A convalescing patient may gain considerable weight, consisting almost entirely of fat, and not be building up active protoplasm. By adding fat alone he increases metabolic rate without adding functioning protoplasm.

In the present study creatinin determinations were made on twenty-five patients and on several cases at different stages. The results are expressed in the table in terms of the creatinin coefficient, which is the ratio of creatinin nitrogen to the unit of body weight. As pointed out by Shaffer, a high coefficient corresponds with the presence of a well-preserved musculature; low figures being obtained when muscular development is poor and activity weakened. The creatinin coefficient for normal muscular men is between 8-11, and for women about 6. A glance at the figures here shows a uniformly low creatinin coefficient, indicating a flabby muscular development. Particularly those cases whose weight is relatively high, show a low creatinin coefficient. This shows us

TABLE I

| San. Number | Age | Date | Condition Turban Classif'n | Body Temp | Body Wt Kg | Height | Optimum Insur-ance Stand-ard | Creatinin Coeffi-ent. | Basal Metabel 1em |
|-------------|------|---------|-------------------------------------|--------------|------------|------------|------------------------------|-----------------------|-------------------|
| 5244 | 27 | 5-20-20 | Innactive Far adv. Turban 3-R-L | Normal Range | 66.8 | 5' 9 5" | 154 74.6 | 9.2 | 42.2 |
| 5442 | 24 | 5-20-20 | Innactive Minimal Quiaescent L-R | " | 63 | 5' 10 1/2" | 163 74.19 | 6.8 | 36.6 |
| 5399 | 36 | 5-20-20 | Innactive Mod. adv. Turban III R.L. | " | 64.2 | 5' 9.5" | 164 74.6 | 6.2 | 38.2 |
| 5431 | 20 | 6-20-20 | Innactive Far Adv. Turban III R.L. | " | 68.1 | 6 8.2" | 152 69 | 7.8 | 37.8 |
| 5393 | 36 | 6-20-20 | Innactive Far adv Turban II R.L. | " | 52.8 | 5-6.7" | 145 65.9 | 5.0 | 39.6 |
| 5434 | 28 | 5-20-20 | Innactive Mod. adv Turban II R.L. | " | 65.6 | 6' 10.6" | 167 76.9 | 5.5 | 40.3 |
| 5347 | 21 | 5-20-20 | Active Mod. adv Turban II R.L. | " | 62.2 | 5' 3" | 130 59 | 7.0 | 38.8 |
| 5415 | 40 | 5-20-20 | Active Mod. adv. Turban I R.L. | " | 68.6 | 6' 8.4" | 158 71.8 | 6.8 | 39.7 |
| 5359 | 27 | 5-20-20 | Innactive Mod. adv. Turban I R.L. | " | 54. | 5' 7.6" | 148 67.2 | 7.6 | 38.6 |
| 5468 | 36 | 5-20-20 | Innactive Mod. adv. Turban I R.L. | " | 76.3 | 5' 9.5" | 154 74.5 | 7.8 | 40.1 |
| 5441 | 26-f | 6-20-20 | Active Far Adv. II R.L. | " | 47 | 5' 5" | 62.7 | 6.0 | 35.2 |
| 5469 | 23-f | 6-26-20 | Innactive Min. I. R. | " | 46.1 | 5' 2" | 57.7 | 6.8 | 40 |
| 5469 | 23-f | 8-28-20 | Active Mod. adv. II R.L. | " | 60 | 6' 1.6" | 66.8 | 5.6 | 38.7 |

TABLE II

SPECIFIC DYNAMIC ACTION OF PROTEIN.

| San. No. | Age | Sex | Date | Basal Met. | Net. After 2-hrs. | After 400 gm. 4-hrs. | Beef Min. 500 cal. | Mixed Meel. 1000 cal. |
|----------|-----|-----|---------|------------|-------------------|----------------------|--------------------|-----------------------|
| 5415 | 40 | f | 5-18-20 | 38.2 | 45.7 = plus 20% | 49 = +28% | 5.0 = +5% | 6.7 = +18% |
| 5415 | 40 | f | 5-18-20 | 38.4 | 60.1 = +50% | 48 = +26% | 5.5 = +8% | 6.2 = +20% |

that these cases have gained in adipose tissue, but are relatively poor in active muscle mass.

In the case of four subjects the creatinin coefficient was studied over a period from early convalescence when they first emerged from bed-rest, through a period of moderate exercise on a low protein diet, and later on on a high protein diet. The results are shown in Table III. At the time of beginning muscular activity, the creatinin coefficient was uniformly low. With the increase in weight the coefficient was practically stationary, or even decreased on a low protein diet, where there was a substantial gain in weight. This is plainly an evidence that this gain in weight was a gain in adipose tissue, and not a gain in muscular tissue. During the short period on a high protein diet and on moderate exercise, there is a very decided rise in creatinin coefficient in every case, showing that there has been a nitrogen retention and a synthesis of new protein or active functioning muscle. We have then, in creatinin estimation, a simple means of determining at any time whether the patient is making substantial gain or only a spurious gain. The creatinin output is index of the functional efficiency of the body.

CONCLUSIONS

In fifteen cases of afebrile pulmonary tuberculosis, eight of which showed active lesions, the metabolism was basal—that is, within a few per cent above to a few per cent below the average normal.

On two patients the effect of giving a meal of 400 grams of lean beef, was determined. The

| San. No | Age | Date | Condition | Body Temp. | Body Wt. Kg. | Height | Optimum Insur-ance Stand-ard | Creatinin Coeffi-ent | Basal Metabolism |
|---------|-----|---------|----------------------------------|--------------|--------------|-----------|------------------------------|----------------------|------------------|
| 5453 | 35 | 6-26-20 | Active Mod. adv. | Normal Range | 83.2 | 5' 9 1/2" | 73.6 | 4.2 | 37.8 |
| 5468 | 33 | 6-26-20 | Active Min Turban 1R | " | 70.1 | 5' 5" | 65.5 | 4.8 | 38 |
| 5464 | 28 | 7-3-20 | Innactive Minimum Turban I L | " | 71 | 6' 8.6" | 71.8 | 6.3 | 38.4 |
| 5409 | 19 | 7-3-20 | Active Far adv Turban III R.L. | " | 54 | 5' 4" | 60.5 | 5. | 39 |
| 5448 | 25 | 7-9-20 | Innactive Mod. adv Turban I R.L. | " | 69.8 | 5' 6" | 65 | 4.7 | 38.2 |
| 5417 | 35 | 5-20-20 | Innactive Mod. adv Turban 5 R.L. | " | 76.4 | 5' 6.6" | 68.2 | 5.5 | 43.2 |
| 5444 | 24 | 7-20-20 | Innactive Far adv. Turban I R.L. | " | 67.7 | 6' 11" | 76.3 | 8.2 | 39.7 |
| 5460 | 26 | 7-26-20 | Innactive Far adv. Turban I R.L. | " | 66.8 | 6' 9" | 72.7 | 7.2 | 36.6 |
| 5462 | | 7-28-20 | Active Mod. adv Turban II R.L. | " | 74.5 | 6' 9" | 73.6 | 5.7 | 39.2 |
| 5467 | 30 | 7-26-20 | Innactive Mod. adv Turban I R.L. | " | 72.2 | 5' 6" | 67.7 | 4.6 | 43.4 |
| 6355 | 25 | 7-24-20 | Innactive Min. Turban I R.L. | " | 72.2 | 5' 8" | 67.7 | 6.8 | 40.1 |

metabolism was raised 25 to 30 per cent, due to the so-called specific dynamic action of the protein.

The effect of a high calorie diet on the rate and depth of respiration, was determined. A mixed meal of one thousand calories increased the ventilation of the lungs, measured as minute volume, 18 to 20 per cent.

Creatinin determinations were made in fifteen patients, and show uniformly low coefficients as compared with the normal. Creatinin determination over a period of months on convalescent cases show an increase in creatinin coefficient corresponding to an increase in the functional efficiency of the body.

PRACTICAL CONSIDERATIONS REGARDING DIET IN TUBERCULOSIS

The rate and depth of respirations is reduced by rest, and rest is the greatest factor in healing a diseased lung. High calorie diet and a high protein diet have the same effect on rate and volume of respirations as increased muscular work. During the stage of acute activity of the disease, the total protein intake and calories should be reduced to the minimum necessary to maintain nitrogen balance without regard to the weight of the patient. Later, when the acute process has been arrested, the diet should be increased to enable the patient to recover any lost weight up to his optimum weight, and no more. This can be checked by creatinin estimation on the urine to determine that the gain in weight is a gain in active muscle mass, and not a spurious gain in adipose tissue. Again, superfluous fat merely adds to the metabolic rate and respiratory rate without adding to the functional efficiency of the organism.

A confirmation of the advantage of low calorie diet during active disease is found in the work of Janney and Newell, who point out that the course of pulmonary tuberculosis, complicating diabetes, is favorably influenced by the state of undernutrition, resulting from rigid adherence to the proper diabetic diet.

THE DIFFERENTIATION OF EARLY MENINGITIS AND MASTOIDITIS *

By WILLIAM J. MELLINGER, M. D., Santa Barbara
From the Clinic of the Santa Barbara Cottage Hospital,
Santa Barbara, California.

Meningitis is a frequent complication of mastoiditis, but the presence of both meningitis and mastoiditis in the same individual, each having a different etiological factor, is very unusual. In an extensive search of the literature I have failed to find an instance of this kind.

The symptomatology of acute mastoiditis is so well known as not to merit detailed discussion here.

The early symptoms of meningitis likewise need not be discussed.

The symptoms common to both conditions may be only headache, temperature, and disturbance of hearing.

In the differential diagnosis of the two conditions, the symptomatology is of less importance than the physical examination, the Roentgen ray and the laboratory findings. In acute mastoid disease there is practically always local evidence of the disturbance, which may include redness and œdema of the soft tissues over the mastoid, narrowing of the canal near the drum, redness and bulging of the drum, unless it has ruptured or been incised. The Roentgen picture may be negative early in the disease, but later will show cloudiness, which may be due merely to acute inflammatory changes in the lining membrane, of the air-cells. This may go on to pus formation and bone destruction, when the picture will show a more intense cloudiness. The laboratory findings will demonstrate a polymorphonuclear leucocytosis, the count varying with the virulence of the infecting organism and the resistance of the host. The blood culture is negative, unless a sinus thrombosis or a septicæmia is present. The discharge from the ear will usually demonstrate the invading organism; also bone debris if bone destruction is present. In smears of the discharge stained lightly with hæmatoxylin, the bone debris appears as small, irregular, dark particles which can only be confused with precipitate from the stain. To avoid this, the stain should be filtered each time before using.

In meningitis, resulting from mastoiditis or other focal infection, the primary condition is usually recognized if careful search is made. In uncomplicated meningitis, the Roentgenogram is of no help. The physical findings may include rigidity of the neck, Kernig's sign, unequal pupils and strabismus, photophobia, hyperæsthesia and unequal reflexes. The laboratory findings may demonstrate the presence of a leucocytosis, the cell count depending again upon the causative organism, the virulence of the infection and the resistance of the host. The spinal fluid gives the most accurate information, and may be the only positive finding. In it an increased cell count and the causative organism may be demonstrated. If the organism is not found in smears, it may

grow on culture media or may be found by animal inoculation.

My clinical example is that of a white school boy, fifteen years of age. He was first seen October 21, 1920. The family history was negative. The personal history gave the usual diseases of childhood, also typhoid fever at ten; scarlet fever at twelve, at which time he was very ill for forty-five days; and influenza three times, each attack being very mild. He had a severe cold and sore throat two weeks before, and with it a persistent cough. The onset was accompanied by sore throat, earache and severe frontal headache. The earache had been so severe that it prevented sleep. The mouth temperature was 103° F. At the time of the examination, which was three days after the onset, there was marked tenderness, redness and œdema over the right mastoid, and the ear was displaced forward. The external auditory canal was filled with a thick purulent fluid. There was a central perforation in the drum, it having ruptured spontaneously two hours before. The canal near the drum was narrowed as compared with the left side. There was no evidence of furunculosis. The left ear was entirely negative. The tuning fork lateralized to the right. Both tonsils were reddened and appeared to be slightly swollen. The surface was covered with a follicular exudate. The pillars were deeply injected, especially the right side. Back of the palate a large adenoid mass could be seen, also a great deal of purulent mucus. He was taken to the hospital October 22, and he walked to his room. The urine was normal. Smears and cultures from the ear discharge demonstrated a pure culture of a diphtheroid bacillus. October 23 a complete physical examination was made with negative findings. Under ether anesthesia both tonsils and adenoids were removed and the opening in the drum was enlarged. The cultures from the tonsils and adenoid produced a pure culture of a diphtheroid bacillus. On October 26, the third day after the operation, the temperature was 98.6° F., pulse 74 and respiration 18. Erythrocyte count was 4,040,000; leucocyte, 10,000, with 18 per cent small lymphocytes and 69 per cent polynuclears; hemoglobin was 63 per cent. On October 27 there was some pain in the ear, and the drainage was free. He was somewhat drowsy and the face was flushed. On October 28, the fifth day after the operation, he was brighter and said he felt good. There was no pain in the ear, discharge was much less, the œdema and redness were gone and there was no tenderness. Temperature was 104, pulse 108 and respiration 24. The urine was negative. The leucocyte count was 11,400, with 67 per cent polynuclears. The next day he complained of pain in the lumbar region and vomited at noon after taking broth; also several times during the afternoon without reference to taking of food, the vomitus being a clear fluid. A physical examination revealed negative findings. Blood culture was negative. Temperature was 100.6° F., pulse 80, respiration 24. October 30, he was sleeping most of the time. He complained of pain in the back and severe headache. He was also nauseated and vomited some. The discharge from the ear had ceased. October 31, the temperature was 98.4° F., it having dropped 6.4° in the course of eight hours. Eight hours later it was 104.4°. The drum was healed and almost normal in appearance. The physical examination, urine analysis and blood cultures were negative. A roentgenogram of the mastoid revealed no cloudiness. The Widal was positive, but he had had typhoid fever five (5) years previous. The examination of the blood for malaria was negative. The leucocyte count was 13,800, with 75 per cent polynuclears. On November 2, ten days after the tonsillectomy and four days after the beginning of the nausea and vomiting, he developed definite signs of meningeal

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

irritation. He was very lethargic and at times restless. He complained of severe pain in the back of the neck and at the base of the brain. There was twitching of the arms during sleep. Both pupils were slightly dilated, the right more than the left. Reaction to light was very sluggish. The eye grounds presented nothing suggestive. There was some photophobia. The tongue deviated distinctly to the left. The summary of the neurological findings by Dr. N. H. Brush was as follows:

"Semi-stupor with restlessness; hyperaesthesia of the whole body; photophobia; unequal reflexes and positive Brudinski's and Kernig's signs are strongly suggestive of a cerebro-spinal meningitis."

A lumbar puncture was then done. The fluid escaped under increased pressure and was perfectly clear. The cell count was 98. Smears from a centrifuges specimen revealed pneumococci. The next day an exploratory mastoidectomy was done with negative findings throughout. Cultures from the cells produced no organisms. He rapidly grew worse, sunk into coma and died November 5, the thirteenth day after the tonsillo-adenectomy, the seventh day after the onset of nausea and vomiting, or the third day after the beginning of meningeal irritation.

The autopsy findings by our pathologist, Dr. Leonard Rothschild, were as follows:

"The brain was covered with a thick, purulent exudate, filling all the sulci from the cortex to the base. The pus and cerebral fluid both revealed large numbers of a gram-positive lancet-shaped diplococci, morphologically pneumococci. The blood sinuses were free from thrombosis, and the ears on either side were clear. The lungs were expanded, and scattered through the lobes were small, diffuse, punctate and conglomerated areas of hemorrhagic exudate. These were sub-pleural and resembled closely the picture of an influenzal hemorrhagic pneumonia. On incision these areas were found to be filled with a bloody, frothy fluid, in which pneumococci were present in large numbers. These were definitely not abscesses or true consolidations. The microscope showed them to contain a large cellular exudate in which mononuclear cells predominated. Pneumococci were found in the lung tissue. The anatomic diagnosis was a lobular pneumonia acting as a focus, resulting in septicemia and lepto-meningitis."

An analysis of this report reveals a mastoiditis following a tonsillitis, the causative organism being a diphtheroid bacillus. After tonsillo-adenectomy, the middle ear condition healed completely, as demonstrated by physical examination, Roentgenograms and an exploratory mastoidectomy, at which times cultures from the mastoid cells were sterile. But, during convalescence from the tonsillectomy, the patient developed a lobular pneumonia which terminated fatally in a pneumococcal meningitis. During the course of the illness it was difficult to be certain that the meningitis was not a sequel of the mastoiditis, but the various data, as given above, demonstrated that there was no connection between the two. This was also borne out at autopsy.

During life the pneumonia was not recognized and this made the explanation of the meningitis more difficult. If Roentgenograms of the chest had been made in addition to the physical examination, it is possible that the condition would have been discovered.

The first spinal puncture revealed clear fluid with a cell count of 98 and pneumococci found in the smears and on cultures. Within twenty-four hours the fluid was very turbid and had a

high cell count, which demonstrates how rapidly the condition progresses.

The removal of the patient's tonsils and adenoids during the acute stage of the middle ear suppuration and the bearing of this procedure upon the subsequent pneumonia, remain to be considered. For years it has been generally recognized that disease of the tonsils and adenoids is the most important factor in middle-ear suppuration. The removal of the tonsils and adenoids after the acute infection of the middle ear has subsided has been practiced routinely, either to cure a chronic suppuration or to prevent future acute attacks.

Leland,¹ in 1913, advised adenoidectomy during the acute state of middle-ear infection, in order to obviate lancing the drum. Glogau² goes further and advises the removal of both tonsils and adenoids during the acute illness to prevent the more serious operation of mastoidectomy. He maintains that the earlier this is done the better, and practices it routinely. This procedure I also followed, and the middle-ear infection subsided promptly. That the patient developed pneumonia may be attributed to this procedure, but why might it not just as likely follow a mastoidectomy, which is frequently done? I have removed the tonsils and adenoids in the presence of acute middle-ear suppuration with mastoid symptoms in twelve other instances, and in each the condition subsided rapidly.

CONCLUSIONS

1. That the patient had middle-ear suppuration with mastoiditis caused by a diphtheroid bacillus.
2. That the development of meningitis was not related etiologically to the mastoiditis.
3. That, early in meningitis, the spinal fluid may be clear, yet contain the organism.
4. That the advisability of early tonsillo-adenectomy in the presence of middle-ear suppuration to obviate a mastoidectomy is logical.

References

1. Geo. A. Leland—The Laryngoscope. 1921, vol. xxxi, p. 106.
2. Otto Glogau—The Laryngoscope. 1920, vol. xxx, p. 83. San Marcos Building.

THE RATIONALE OF RADIATION IN THE FEMALE PELVIS.*

By ALBERT SOILAND, M. D., F. A. C. P., Los Angeles

The subject of radiation in pelvic disorders is well diffused throughout medical literature, but so many contrary beliefs are expressed that the writer desires to lay before this society his own impressions, gleaned from personal experience and visits to many clinics.

With the biology of radiation you are no doubt familiar. We will accept the theory that certain ineffectual radiation may act as a stimulus to a cancer cell, and in favorable instances actually promote the growth of such cells, yet, as far as the writer knows, there are no authentic cases on record which prove the truth of this belief. There can be no question that such disasters may occur, but conversely, there is no doubt that radiation

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, San Diego, May, 1921.

carried to a high degree not only inhibits but actually destroys both the nucleus and cell body of any sensitized tissue within the radius exposed.

The rationale of radiation in the female pelvis demands a thorough study and correct diagnosis of each case before the treatment is undertaken. When this has been achieved, then deliver sufficient energy of radiation to accomplish what each particular case may require in order to obtain the best end result in the shortest possible time.

The clinical conditions best suited to radiation are uterine hemorrhages of all sorts, particularly the bleeding varieties from endometritis, myomata, fibromata, fibrous type uterus, and angiomas. In these cases radium is practically a specific. It has been urged that radium should not be used to treat some of these conditions occurring in the very young. Experience has now taught us, however, that age limitations may be disregarded. If the bleeding comes from a large fibroid, myoma, a sub-mucous or subperitoneal growth, large enough to be either seen or felt by external palpation, the X-ray will insure a symptomatic cure, and if not a total obliteration, at least a marked reduction of the growth. In certain of these cases much more rapid results are obtained by a judicious intrauterine radium radiation, plus cross-fire with deep Roentgen radiation.

Let us now enter debatable ground and consider border-line and malignant conditions. At the outset I wish to make it clear that in this paper I shall not discuss surgical treatment in any detail. All cases which are favorable operative risks should, of course, be given the benefit of the best surgical skill available. In cases, however, where an operation is not feasible, there is no longer any excuse for withholding radiation, although this is contrary to the teachings of some surgeons. I am willing to assert that cancer of the uterus, advanced to a point where the diagnosis is unmistakable, is practically incurable by any means in our present armamentarium. On the other hand, some of the most distressing symptoms of advanced uterine cancer can be relieved by radiation. Border-line cases should be given radiation and treated as if dealing with a carcinoma.

In carcinoma of the cervix, I believe it is possible to effect a cure in a certain proportion of cases. Our object in dealing with cervical carcinoma should be to destroy every malignant cell with radium as quickly as possible. If this is done before the glandular field has been invaded, there is fair prospect of a cure. My technic for a cervical carcinoma consists of an implantation in the cervical canal of fifty milligrams of radium element, with filter of one-half millimeter of silver, one millimeter of brass, and one millimeter of hard rubber, for fifteen hours, giving four such applications within six days' time. This is a total of three thousand milligram hours, which is sufficient to destroy carcinomatous cells within a radius of three centimeters in all directions from the center of application. This treatment is followed by X-radiation over the lower abdomen, through four ports of entry, giving a total of six hundred milliamperere minutes in a period of six days. In can-

cer of the body of the uterus, the technic is practically the same, except that radium is carried up to the fundus if possible. If this cannot be accomplished, radium is packed in an additional two millimeters of hard rubber filter, the rectal wall protected with two millimeters of lead, and the entire mass inserted into the posterior culdesac. Additional tubes are placed in each fornix, and the exposure carried up to six thousand milligram hours within six days' time. The X-ray cross-fire is directed through six ports of entry, on the abdomen, giving a total of nine hundred milliamperere minutes, with ten millimeters aluminum filter, one-half-inch cotton filter under compression, one hundred kilo volts, five milliamperere tube circuit, at an eight-inch skin distance.

The technic for the various non-malignant hemorrhagic conditions varies with the age of the patient and the severity of the symptoms. A single twelve-hour application of twenty-five milligrams radium element placed in the uterine canal is frequently sufficient to bring on a transient amenorrhea. This exposure is repeated once or twice within six weeks, and in more stubborn cases the dosage is doubled and the time interval between treatments shortened.

The writer recalls one patient, a physician's wife, who, having a large bleeding fibroid, with an unusual nerve syndrome, was exposed to the X-ray six years ago. In three months' time, complete amenorrhea was established with a disappearance of the fibroid. The patient has been in excellent health up to the present time. Two months ago normal menstruation appeared, much to the patient's surprise, and a careful examination failed to disclose any pathology. The patient's husband concurs with me in the opinion that no additional treatment is advisable. This is the longest cessation of menstruation due to radiation within my knowledge.

There are other conditions besides uterine diseases wherein radiation is of tremendous value. In affections such as malnutrition, anemia, or tuberculosis, sterilization, either temporary or permanent, may be desired; and there is surely no better method of obtaining this without shock or danger than by intelligent radiation. Many other conditions, some very intractable to ordinary medication, such as chronic oophoritis, leukorrhea, and pruritus vulvæ, are ordinarily amenable to radiation.

I have treated a goodly number of uterine carcinoma cases in the pre-radium days with X-ray, blindly and empirically. Definite results were not in evidence. An occasional relief from pain, foul-smelling discharge, and other disturbances, or in other words, a sufficient change for the better in some of these poor unfortunates warranted a continuation of the treatment with the hope that some day a solution would be found. Then came radium, and with it a few quickly made experts who permitted their enthusiasm to carry them into making unwarranted and extravagant claims of radium cures. That radium has been a wonderful step forward, and is destined to add its luster to that of radiation from modern X-ray apparatus is self evident, but it

must be measured in the capacity of actual work accomplished and its true worth thereby established.

With my more or less early disappointing X-ray experiences in other than superficial cancer, I did not at once get excited over radium, but only after employing it over three or four years' time was it apparent to me that radium possessed outstanding merit. It is only a matter of a few late years that radium has been used with anything like a full understanding of its adaptabilities, and it can now be truthfully stated that radium has a selective field of usefulness in uterine carcinoma, singularly unchallenged by any other medical or surgical aspirant. During this period I have subjected a great many cervical cancer patients to radium radiation, not a few of whom have remained free from visible or demonstrable recurrences from periods of one, two, and three years. A far greater number, however, have been miserable failures from a curative standpoint. While no hard and fast time limit for recurrence has been established, our knowledge of the usual rapid invasion of mucous structures would seem to warrant the assumption that if a cervix remains perfectly clean and of normal consistence one year after it has been cleared from cancer by radiation, and with the patient otherwise well and free from internal invasion, that a clinical cure in the case may be expected.

What are we to think of the colossal amount of X-radiation which advanced European clinicians are promulgating, and for which cancer cures as high as 70 per cent are reported? I know of no better word than superradiation by which to placard this revolutionary method of X-ray therapy. The generating apparatus consists of transformers approximately one and one-half times more powerful than those generally employed in America. Such an instrument delivers almost a pure homogeneous gamma radiation of enormous mass and energy. Indeed, if we are to accept some of the claims, advanced radium will soon be far outdistanced by this Utopian X-ray, which will be all and self-sufficient. American engineers are busily engaged in developing even more powerful apparatus, which promises to be more revolutionary and epoch-making. Between theory and fact, however, there is a very wide departure, and I would advise no one to throw away their radium or present X-ray equipment until careful investigation and the test of time have placed their stamp of approval upon superradiation. In the meantime, it must not be forgotten that extreme danger lurks in the path of such work, and that each step must be guarded by every means known to science, in order to safeguard both the patient and operator against this potent force terrible to contemplate.

The question of surgery in uterine cancer is indeed a grave one. When the malignant condition is sufficiently advanced so that a definite diagnosis can be had, a fatal termination is the rule, irrespective of operation or radiation. In the writer's opinion, in clearly surgical cases, thermic cauterization or electrical dessication should have priority over the knife. If one can

be sure that the growth is confined wholly to the uterus, a careful hysterectomy is the proper procedure. In such cases, the surgeon and the radiologist should co-operate. Let us urge whenever possible a routine procedure along these lines. The radiologist makes an intrauterine pre-operative radium application, the surgeon operates from five to seven days later, and the radiologist follows the operation immediately with radium in the vagina and X-ray over the abdomen in the usual post-operative method. In the belief of the writer, such a procedure is the best combination that we have at the present time to combat malignancy in the female pelvis.

527 West Seventh Street, Los Angeles.

INFANTILE ATROPHY *

SPECIAL REFERENCE TO FEEDING

By JOSEPH ROBINSON, M. D., Anaheim, Pediatrician.
Johnston-Wickett Clinic, Anaheim, California.

In presenting this paper to you today I purpose to lay stress on the use and value of malt soup and albumin milk, with modifications, in the feeding of atrophic infants.

We are, I believe, all thoroughly agreed that no artificial form of feeding is comparable with breast milk, which should always be given, if practicable, in these cases of infantile atrophy. Breast milk is not a panacea in all of these cases. Hence it is not surprising that other forms of feeding are sometimes a failure.

My experience with malt soup feedings began some fifteen years ago by using the formula of Liebig, the originator of malt soup. This was used with partial success until three years later the Loefflund's malt soup extract was obtained, and the formula, as perfected by Keller, followed. This formula, as did Liebig's, called for the same proportions of milk, flour and water for all ages, and proved very trying in any of these cases unless a condition of constipation existed.

Other preparations of malt soup extract have been tried, and fully one has given satisfactory results.

After about five years' experience with Keller's fixed formula and the difficulties arising because of vomiting and diarrhoea in many of the patients, the formulas were made elastic by making milk and water dilutions, according to the age of the infant, and using the malt soup and flour, each in quantities of from one-half to two ounces a day. If diarrhoea developed, the amount of the flour was increased and the malt soup decreased. In severe cases it sometimes is advantageous to substitute for the wheat flour, rice, barley or arrow root, or a combination of two or more of these flours.

The value of the malt soup feedings is due to the easily assimilable maltose, of which malt soup extract contains 57.5 per cent, and dextrose, 11.7 per cent, a vegetable proteid of 6.4 per cent, upon the presence of gelatinized starch, which acts as a protection against the undesirable effect of the fat and sugar, and potassium carbonate, which combats the acid intoxication, as evidenced by the disappearance of the ammonia from the urine. It

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

also aids in the alkali loss which occurs in this condition.

After a period of six weeks of feeding with malt soup formulas, as with any cooked food, it is essential to administer orange or tomato juice each day. As soon as it is practicable, it is advisable to augment or substitute for a part or a whole of one or more of the malt soup feedings, a vegetable soup or clear broth, later strained vegetables, and still later a return to a simplified milk formula, in order that the vitamins which may play an important role in this disease may be supplied.

In any arrangement of formulas, malt soup feedings will be followed by diarrhoea in a percentage of these cases. The diarrhoea is usually of the fermentative type. In these patients or those suffering from infantile atrophy, albumin milk or one of its modifications is indicated. Albumin milk synonyms—protein, eiweiss, casein, calcium caseinate, larosan milk—have virtually the same composition of protein, 3 per cent; fat, 2.5 per cent; sugar, 1.5 per cent; salts, 0.5 per cent.

The following suggestions in the preparation of albumin milk have been found of value:

Dennett¹ states that:

"When the milk is thoroughly jellied, it is then put upon the stove and is heated to a steaming heat (160° F.), being stirred vigorously. This process is to kill the pepsin or rennet, so that it will not curdle the buttermilk when added to it later."

Julius Hess² states that:

"The completed albumin milk must not be heated above 100° Fahrenheit, otherwise it will clump"; and "In feeding, use a nipple with a large opening."

I have for some time used, for home modification and with marked success, the calcium caseinated milk, after the formula of Stoeltzner, as prepared with larosan powder. Larosan, which has been accepted by the Council of Pharmacy of the American Medical Association, appears in *New and Non-Official Remedies*, 1919, page 170. Larosan is a calcium caseinate and contains 2.5 per cent calcium oxide, and 97.5 per cent casein. When prepared according to the manufacturers' directions it compares favorably in composition and therapeutic value with other albumin milks.

Albumin milk favors intestinal digestion, combats acid fermentation, and increases the tolerance of the bowel in infantile atrophy.

In some patients albumin milk should be diluted with one-third to one-half boiled water. It should be fed in quantities and at intervals suitable to age, weight and condition of the patient. During the administration of albumin milk there is ordinarily no gain or a very slow gain in weight, until a carbohydrate in the form of sugar is added. When there is no vomiting or diarrhoea, we add sugar.

The form of sugar usually is cane or dextrin-maltose. Some four years ago my attention was called to the value of corn syrup in infant feeding, and until recently I have used it as a sugar content in the feeding of these atrophic infants with very gratifying results. The corn syrup

is introduced in 3 per cent strength and increased up to 12 per cent. A gain in weight occurs when enough corn syrup is added to furnish sufficient calories. It is sometimes possible to bring value of the food up to twenty-five calories per ounce. The important feature of corn syrups is the high percentage of dextrines and glucose combined with the lower percentage of maltose. Value, 110 calories per ounce.

The advantages of corn syrup are the mixed sugars which are split up in the intestines at varying intervals. The results obtained by using corn syrups in infantile atrophy has been so satisfactory that it has been used exclusively in these cases until recently. In some instances the corn syrup is given in a 10 per cent dilution, with water between feedings.

Recently a dextrose or chemically pure glucose obtained from maize has been used in several cases. It is now being used with very satisfactory results in three cases of infantile atrophy at the Johnston-Wickett Clinic in Anaheim. This dextrose is employed in amounts up to three ounces per day without unfavorable results. The examination of the urine and stools, as reported from the clinical laboratory, have been negative for sugar. We have added to our list a sugar which gives promise of being superior to any other in the feeding of infantile atrophy patients.

SUMMARY

1. The use and value of malt soup in infantile atrophy is in cases:
 - (a) In which maternal or wet nurse feedings are impracticable or unsuccessful.
 - (b) In infants over three months of age.
 - (c) In which there is not present diarrhoea.
2. The use and value of albumin milk in infantile atrophy is in cases:
 - (a) In which maternal or malt soup feedings are not applicable.
 - (b) In infants under three months of age.
 - (c) In which there is present diarrhoea.
 - (d) Larosan milk (calcium caseinate milk) has practically the same composition as other albumin milks, and is easy to prepare.
3. Corn syrup, in conjunction with albumin milk, is applicable:
 - (a) When sugar is required.
 - (b) Because it is readily absorbable and less irritating to the gastric and intestinal mucosa, even in high percentages, than other sugars commonly used.
4. Dextrose, chemically pure glucose derived from corn:
 - (a) Apparently requires no expenditure of energy on the part of the digestive system.
 - (b) Non-irritating to gastric intestinal mucosa, readily and completely absorbable, not found in the urine and feces, following administration in high percentage.

References

1. Dennett, R. H.—Text-book. *Simplified Infant Feeding*, 1920, p. 129.
2. Hess, Julius—Text-book. *Principles and Practice of Infant Feeding*, 1920, p. 295.

TREATMENT OF SYPHILIS WITH SILVER-SALVARSAN*

By VICTOR G. VECKL, M. D., and MILLARD R. OTTINGER, M. D., San Francisco, California

This is a preliminary report based upon over two hundred intravenous injections of silver-salvarsan.

Syphilologists are familiar with the history and the chemical composition of the silver-salvarsan. It will, therefore, be sufficient to state the following facts:

Kolle, who succeeded Ehrlich, succeeded also in the production of silver-salvarsan, which has the advantage over neo-salvarsan of being very stable, easily soluble, and considerably less toxic. In a 20 per cent solution it is isotonic. Silver-salvarsan is even less toxic than some sodium preparations that were elaborated after neo-salvarsan.

Colloidal silver by itself has been shown to have more spirochaetocidal influence than mercury

Though German authorities have published excellent results in the treatment, mainly of neurosyphilis, and while we knew something of the influence of silver upon nerve lesions, we started the use of this new drug silver-salvarsan hesitatingly, very carefully using careful technic. We invariably started with an initial dose of 0.1 gm., and then increased to 0.2 gm., and finally to the maximal dose of 0.3 gm. From eight to twelve injections were given.

The solution is dark-brown, and patients who had salvarsan or neo-salvarsan before were told so beforehand.

We saw no untoward reaction of any kind in any of the patients. One patient who, after each of three injections of neo-salvarsan, showed very pronounced and very disagreeable general and cutaneous reactions, tolerated one small dose of silver-salvarsan very well.

Our results were uniformly good. Early syphilitic manifestations disappeared rapidly. One patient whose Wassermann reaction had remained positive in spite of two years' intensive anti-syphilitic treatment, showed a negative reaction six weeks after twelve injections of silver-salvarsan. Another patient, with a somewhat mysterious and disfiguring facial syphilis, and who was previously treated in every possible way with slow but rather insignificant results, is rapidly improving and being made happy.

Silver-salvarsan injections may be combined with other treatments, without any danger. We use intravenous injections of cyanide of mercury on the days when no silver-salvarsan is given, and give the silver-salvarsan at intervals of from three to five, and even eight days.

We consider silver-salvarsan to be a very valuable addition to the armamentarium against syphilis.

THE EARLY DIAGNOSIS AND THE TREATMENT OF CANCER OF THE CERVIX*

By ROLAND E. SKEEL, M. D., F. A. C. S., Los Angeles

If any apology is needed for a paper on the subject of "Cancer of the Cervix," that apology is

found in the fact that the ultimate mortality rate is very close to 100 per cent, and the additional fact that this disgraceful rate is due in large part to late diagnosis.

The absolute necessity for an early diagnosis, if a cure is to be within the realm of possibility, rests upon anatomical, and the possibility of cure through early operation upon pathological grounds.

Anatomically, even the least perceptible extension of the growth beyond the cervix in any direction means that bladder, rectum or ureters are involved, while if the growth is confined to the cervix without direct extension through tissue involvement, glandular metastases are relatively late or do not occur at all; therefore the prognosis following early diagnosis and removal should compare favorably with the prognosis following early operation for cancer of the breast, in which early tissue involvement by direct extension of cancer cells to organs not amenable to operative treatment is less to be feared than early glandular metastasis.

The reasons an early diagnosis is rarely made are many, and not all of them by any means are attributable to carelessness on the part of the general practitioner, as is too frequently assumed. On the contrary, much of the responsibility for this must be shared by the lay tradition that more or less menstrual disturbance in the form of menorrhagia or metrorrhagia is normal at the menopause, to the familiarity of every woman with the periodical hemorrhage of menstrual life, and to the ancient belief that cancer means pain, foul discharge, and cachexia.

This periodical discharge of blood from the genital tract and the leucorrhoea which sometimes follows trifling indiscretion leads the patient to ignore irregular menstrual frequency and leucorrhoea as she approaches the menopause, and by reason of the tradition above mentioned she refuses to become excited over a slight increase in the menstrual flow or shortening of the inter-menstrual interval.

One of the most damnable symptomatic triads that ever occupied either the professional or lay mind is that pain, foul discharge, and cachexia, are requisite before a diagnosis can be made or the suspicion aroused that cancer may be present. Whereas, the truth is that pain means positive extension beyond the confines of the cervix, foul discharge that saprophytic infection of dead or dying tissue has occurred, and cachexia that hopeless toxic absorption is taking place.

In tracing back the onset of the two really early symptoms, viz., watery leucorrhoeal discharge and inter-menstrual spotting, one is surprised to learn how often this onset synchronized with the patient's highest state of nutrition as evidenced by her having at that time reached her maximum weight and sense of well-being. This alone is sufficient to lull the most intelligent woman into a belief that nothing serious can be wrong with her.

For these ideas of the laity, the profession as a whole is at fault insofar as it has failed to educate

* Read before the annual meeting of the California State Medical Society.

that portion of the public which is willing to be educated and will listen to professional advice; as to all others the responsibility is theirs and theirs alone. Bearing only directly upon the subject proper, is it not true that the profession itself would stand upon a higher plane in public estimation today if it bent more of its efforts in the direction of public education upon medical topics, taught its individual patients more of the aims and altruistic motives of the profession, and then resigned its Don Quixotic battles with the windmills of the fakes to the public, since, after all, it is the health and life of the community as a whole that is at stake, not the welfare of doctors in the community?

It is perfectly well realized that public education alone would fall far short of solving the entire problem of early diagnosis of cancer of the cervix, even if that were carried to the extreme of frequent examinations at or about the time of the menopause; first, because it would leave outside the pale those instances of rapidly growing carcinoma which occur in young women, and second, because of the diagnostic difficulties often encountered in early cases unless the examiner is thoroughly impressed with the idea that a sufficiently early diagnosis can be made with the microscope, *and only with the microscope*. I know that this statement will be questioned by some, and it may well be that my diagnostic acumen is not equal to the best, but the opinion is honest and is based upon thirty years of experience, with a by no means enormous but not unreasonably limited clientele. If we look our failures as squarely in the face as our successes and trace our cases to their ultimate outcome I am satisfied there will be little dissent from the opinion that a positive clinical diagnosis of cancer means a cancer death sooner or later, while a diagnosis so early that it must be made by the pathologist gives a high percentage of cures.

The physical signs in the curable stage are thoroughly deceptive. Inspection may reveal nothing wrong with the early cancerous cervix that is not equally apparent in the cervix of any multipara who has sustained a laceration with chronic infection and erosion, or there may be a few pinpoint yellowish spots underneath the mucosa so insignificant in size as to be overlooked. Neither may there be anything on palpation to arouse the suspicion of an examiner accustomed to palpating Nabothian follicles in the cervix of practically every woman who has borne children, that is nothing unless it may be the withdrawal of a blood-stained finger at the close of the examination.

Supposing, however, that, as opportunity offered, the family physician informed every parous woman in his clientele that any menstrual change at the menopause excepting diminution of the flow was abnormal, that profuse menstruation, intermenstrual spotting, or recent leucorrhœa demanded investigation to determine its origin, and supposing further that when this investigation was made if the cervix were not absolutely normal or the con-

dition not plainly explained by a mucous polyp a section were removed and submitted to a competent pathologist, would not many cases still in the curable stage be discovered that now are condemned to a slow, painful death by one of the most horrible routes?

If, in addition to this increased activity on the part of the general practitioner, the surgeon *routinely* submitted to the pathologist all specimens from cervixes he felt called upon to repair or amputate for infection, laceration, or hypertrophy, deaths from cancer of the cervix would tend to be confined to those groups who profess to believe that the manifestations of disease are immaterial things which can be corrected through vicarious appeals to an immaterial Almighty who will lend an ear, however, only if these are backed up by so much very material lucre per appeal, and to those who are fond of having their necks twisted and legs pulled simultaneously.

Once more, allow me to diverge from the subject proper to call attention to the fact that the permanent survival of the science and art of medicine depends upon the constant, continuous, day by day demonstration that scientific medicine secures definite, tangible results which pseudo-science does not and can not accomplish.

It will be seen that I am neither advising startling diagnostic methods, nor putting forth any new procedures. On the contrary it is felt that if the well known time-tried methods were used systematically and pushed to the uttermost limits of their usefulness the apparition of the anæmic hopeless cancer case, which every surgeon dreads, would be less frequently observed, and the border line cases which he sees from day to day, in which hope alternates with dread only to give way to despair as time reveals the uselessness of accepted measures would be throttled at their onset, with what mitigation of human suffering and prolongation of life one hardly dares conjecture.

TREATMENT

Again I recognize that we are treading on debatable ground, but one can do no better than record his personal opinion and observed results. Bald statistics are not presented; first, because my own are not available, my case records not having followed me as yet; second, because statistics that do not run into the thousands are almost worthless; and third, because statistics presented without all possible collateral data can be made to prove almost anything an essayist wishes.

First, as to prophylaxis, and in this I wish to make myself perfectly clear. I am emphatically opposed to unnecessary operations on the cervix and uterus. Curretage, other than diagnostic, is a rarity, and repair of cervical laceration in a woman well within the child-bearing age is never performed unless that laceration is the site of an infection which is making her miserable by reason of discharge or broad ligament lymphangitis and cellulitis. Further, I believe that the orgy of therapeutic currettings, trachelorrhaphies, and oophorectomies which swept over the profession with the advent of aseptic surgery, was a dis-

grace, so that I cannot possibly be misunderstood in the assertion of my opinion that the first active step in the prophylaxis of cancer of the cervix is the amputation of every cervix in parous women *beyond the child-bearing age* in which there is an unhealed laceration, marked erosion and hypertrophy; and cancer of the cervix in nulliparæ is negligible.

As stated before, submission of the removed material to the pathologist should be a routine procedure, and in this class are found almost all of my own complete successes following the radical operation, together with a few others in whom some symptom had aroused a suspicion which could not be verified or refuted clinically, but in which the diagnosis was made by the pathologist from specimens removed from the cervix for that purpose. In other words, the successful cases were almost all in the class in which the diagnosis was made accidentally as it were.

Further, so far as I know, all of these are living: per contra—with an occasional startling exception—all of those operated upon by *any method* more than five years ago are dead or have had a recurrence if the operation were based upon a readily made clinical diagnosis.

The radical operation above referred to was, in most instances, a combined vaginal and abdominal operation, the cervix being sterilized at the time of, not before, the operation with the thermo-cautery, the cervical canal then closed by suturing and the incision through the vaginal mucosa made with the cautery.

The broad ligament removal was made either mediad or lateral to the ureters as the circumstances of the individual case seemed to dictate. Two or three were vaginal hysterectomies, the vaginal incision being made with the cautery and the broad ligaments clamped, not tied, so that the destruction of tissue extended beyond the line of broad ligament sectioning. One case, still well after five years, had only a high amputation with the cautery followed after complete healing by radium treatments. In this case the cautery amputation was not on the heat principle first enunciated by Doyen and so elaborately and well worked out by Percy, but followed the lines of high amputation as advocated by John Byrne many years ago.

If I had the absolute courage of my convictions I should advocate the treatment of all *pathologically* but not *clinically* diagnosable cases of cancer of the cervix by high cautery amputation followed by the use of radium. Not having yet arrived at that stage, and in view of the opinions of operators of much greater experience, I still hesitate to take so radical a step and therefore continue to advocate the radical operation for cases in their very early stage—but I think we are coming to the former nevertheless.

Taking now the other extreme, the cases frankly unsuitable for any type of radical operation, those having profuse foul discharge and bleeding, with definite fixation of the uterus and

deep excavation, or with cauliflower excrescences filling the vaginal vault.

Having run the entire gamut of curette and cautery in the early days, zinc chloride cauterization and acetone later, being misled by exuberant enthusiasm into radical operation as a last resort in a few instances, utilizing the Percy method to the limit in others, and finally turning to radium on the basis of "any port in a storm," I am thankful to have found a legitimate reason to drop all operative procedures and depend upon radium as the sole *palliative* measure which squares with my surgical conscience.

There is more than one reason for this attitude. Primarily, it is because without the pain of operation or discomfort of anæsthesia patients have experienced more relief from this than from any other method. Secondarily, because every unsuccessful painful operation is an opprobrium to the profession and a deterrent to the prompt seeking of relief by others.

Coming now to the great class of border line cases, which no hard and fast rule can govern and in which each individual patient must be studied as a unit, not as a member of a class, many factors that deserve consideration must be passed over for lack of time. One that may be discussed, however, is free mobility of the uterus or its fixation as the important feature in deciding for or against a radical operation. If my previous contention is true that any extension beyond the cervix means that the case is probably hopeless so far as radical operation is concerned it follows that fixation is an absolute bar to any radical procedure. However, nearly every authority makes the statement that fixation may be due to inflammatory infiltration and therefore not be a bar to radical removal. Theoretically this may be true, but practically we know that every case has more widespread pelvic involvement once the abdomen is opened than was thought possible when the examination was made.

The age of the patient, the condition of her kidneys, heart and lungs, and above everything, her expressed desire after the condition and prognosis have been fully explained, must be taken into account before deciding whether any operation is justifiable, and if so, which is preferable. One may get away successfully with a pan or vaginal hysterectomy with the cautery in one instance, with the elaborate Percy procedure in another, with high cautery amputation followed by radium in another, or with radium followed by any of these procedures in still another, but the successes are in pitiable contrast to the failures.

Being one of those surgeons who believe that every mutilating operation is a confession rather than a subject for boasting, and that when equally good results follow no operation and no mutilation, it is an evidence of professional progress not to operate, the writer would like to summarize the foregoing with the double object of promoting discussion and standardizing our procedures so far as our present knowledge permits.

1. A pre-clinical, microscopic, diagnosis of

cancer of the cervix is necessary if there is to be a tangible hope of permanent cure from any of the surgical procedures with which we are familiar.

2. Early diagnosis can be attained through the education of the individual patient by her personal physician, by removal of a section for examination from every cervix in the least suspicious, and by the routine pathological examination of specimens from every case in which repair or amputation has been performed.

3. Many cases of cancer of the cervix might be prevented if high amputation were adopted as a routine procedure in every case of lacerated eroded hypertrophied cervix found in women beyond the probable child-bearing age.

4. As a rule, with but few exceptions, radical pan-hysterectomy should be limited to those cases which are discovered before any marked symptoms or positive physical signs are present.

5. In the general interests of humanity and humaneness, all bloody or painful procedures should be abandoned in late cases, and palliation by radium adopted as the routine procedure.

6. In border line cases the condition and outlook should be presented with the utmost frankness and the patient's desires should then have as much weight as any other factor in determining how the case should be managed.

Title Insurance Bldg., Los Angeles.

NOTICE

The December Journal will contain a symposium on Industrial Medicine.

THE VALUE OF BLOOD STUDIES*

By WM. PALMER LUCAS, M. D., San Francisco.

Modern methods of bio-chemistry and physiology have introduced a new conception of the value of blood studies, not only in the understanding of anemias, either primary or secondary, but also in the study of many other diseases. A true value of the function of kidneys can be better appreciated through a study of the blood than by a study of the urine. In the same way some of the newer methods of analyzing the blood throw light on diseased conditions in other organs, such as the liver, and lungs, and in the complicated problems connected with digestion.

Hemoglobin may be present in sufficient volume and yet the oxygen be unable to be carried or given off in sufficient amounts to satisfy the needs of the tissue cells throughout the body. An example of the inability of the red blood cells to give off oxygen, even though the hemoglobin is present in normal amounts, is that produced by simple cold. Another example is the presence of abnormal salt concentration of the plasma. Exactly how these two factors of temperature and salt contents of the plasma affect the affinity of hemoglobin for oxygen is not well known. The amount of oxygen that can be taken up, and the rapidity with which oxygen can be given off, varies with the temperature of the body. This is

an important factor in the temperature regulation during early infancy. All who have watched newborn infants with disturbed temperature regulations have noted the cyanosis which occurs in these infants with a low body temperature.

The fact that hemoglobin is a colloid and the knowledge we have of the interrelation of electrolytes and colloids makes it evident that the salt content of the blood must affect and regulate to a certain extent the transfer of oxygen. It has been shown that potassium salts are capable of causing hemoglobin to absorb oxygen to some degree. Many studies have demonstrated the fact that the loss of water with the resulting concentration of salts affects the oxidation of the tissues. The buffer quality of these salts undoubtedly affects the oxygen transfer from the hemoglobin to the body cells. This is, as we know, intimately connected with another factor, the hydrogen ion concentration of the blood. It is well known that increasing the acidity of the blood lessens its active concentration of oxygen. The importance of studying the relation of hemoglobin to the three factors, temperature, electrolytes and hydrogen ion concentration, is indicated in the study of almost all blood diseases.

The morphological study of blood furnishes very reliable data as to the condition of the blood-forming organs. Normally the blood level is kept up by daily destruction and replacement of cells. Ashby has recently determined, by estimating the disappearance of cells transfused by the differential agglutination test, that the normal life of the red blood cell is approximately thirty days.

Destruction is continually carried on by the following processes:

FIRST. By phagocytosis. The endothelial cells of the spleen, liver and other organs take part in this process.

SECOND. By fragmentation. This is shown by the occurrence of microcytes and poikilocytes. Fragmentation is produced in the circulation and not in the bone marrow. Normally, there are a few such cells always present within the circulation, but under pathological conditions, when young cells are thrown out in large numbers, these young cells cannot stand the functional strain put on them and become easily fragmented. Under pathological conditions, not only fragmenting cells, but also cells with vacuoles may be found. These ultimately become hemoglobin dust and are removed from the circulation to be stored in the spleen. Such hemoglobin dust is found normally in the spleen, but appears in much greater quantity in anemic conditions.

THIRD. Destruction occurs by hemolysis. Under normal conditions this probably plays very little part, as hemolysis is normally an intra-cellular process, but in pathological conditions it may play a big part. Under such conditions hemoglobinuria occurs often accompanied by fever and chills.

FOURTH. Disintegration is also shown by the increased fragility of the red blood cells. This is especially found in certain pathological conditions, such as congenital hemolytic icterus, in which there is pronounced blood destruction.

*Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Regeneration. Processes of regeneration are also continually going on. Normally, the bone marrow only produces enough red blood cells to maintain the daily loss of red blood cells in the normal wear and tear of life. Bone marrow activity is only limited by its functional capacity. This may be hyperstimulated under certain conditions, such as by a diminished oxygen supply as is found in high altitudes, or where there is difficulty in the absorption of oxygen through the lungs, as in congenital cardiac conditions. Bone marrow activity normally is a balanced process between blood destruction and regeneration. Certain tests may be carried out to determine how this balance stands at any given time.

FIRST. Urobilin estimations in the urine and stools can be used to estimate the presence or extent of blood destruction.

SECOND. By means of vital staining such cells, as the Howell-Jolly bodies, Cabot's ring bodies and stippling may be made out. These give some idea of the effort which the bone marrow is making in the production of red blood cells and in its effort to maintain the optimum level.

THIRD. Such an estimate of the effort which the blood-forming organs are making may be estimated by the number of (1) reticulated cells; (2) platelets, and (3) mitochondria, all of which can be determined by special staining methods. Normally, reticulation exists in from $\frac{1}{2}$ to 2 per cent of the red blood cells. With marked bone marrow activity this percentage is increased. In simple anemia it usually does not go higher than 4 or 5 per cent. In hemorrhagic jaundice one finds reticulated cells as high as 15 to 20 per cent, and after hemorrhage this may be even higher, 20 to 30 per cent. The percentage of reticulation is, therefore, of great diagnostic value. As they diminish after hemorrhage this can be considered as a good prognostic indication. The estimation of platelets also gives us an idea of the activity of the bone marrow. Platelets are increased where there is marked activity and decreased where there is a defective regeneration. In diseased conditions, where they have been reduced, their return to normal may be a favorable sign.

Mitochondria. These are small limpid bodies found within the cell protoplasm. They are not found in adult or fully formed red blood cells, but are found in nucleated red blood cells and in immature red blood cells. Their presence and estimation gives us some idea of the number of immature cells in circulation.

It has been shown that oxygen consumption may be proportional to the percentage of reticulated cells. Normally human red cells consume very little oxygen. In anemia the consumption of oxygen by the red blood cells may be marked, and this has been found to depend on the presence of reticulated cells. The demonstration of an increased oxygen absorption by accurate methods may prove a more quantitative index of functional variations in bone-marrow activity than the microscopic evidence taken alone.

In any study on the regeneration of hemoglobin and red blood cells, it is important that the de-

termination of hemoglobin percentage be as accurate as possible. Various estimations with the ordinary methods of testing hemoglobin, as by the Tallquist, have shown that they may give an error of from 5 to 20 per cent. The newer methods of estimating hemoglobin are based on the oxygen capacity of the red blood cells. The most accurate method so far published is that of Palmer for determining hemoglobin percentage by the oxygen capacity of the hemoglobin. Robscheit has modified this somewhat, and determines the hemoglobin in the form of acid hematin. Some such method as that of Palmer or Robscheit should be adopted for all clinical purposes for the determination of hemoglobin, as accurate estimates are much to be desired in the study of blood regeneration and destruction.

The study of hemoglobin pigment metabolism is also important. The liver has not only an eliminative function in forming bile pigment from the freed hemoglobin of broken-down red blood cells but, as shown by Whipple, it also has a constructive function. The liver can construct bile pigment probably from its endothelial cell activity, and under certain conditions there may be extra hepatic bile pigment production. The liver has some constructive function in hemoglobin regeneration, and this can be definitely modified by diet. It has been shown that the liver can construct hemoglobin out of other material than broken-down red blood cells. Elements of protein catabolism and certain factors in the diet contribute to the steady construction of hemoglobin. Further, the liver cell activity has not only to do with hemoglobin or blood pigment metabolism, but upon the functional activity and integrity of the liver cells depends also the level of the plasma and serum proteins. Liver function in this respect is influenced not only by tissue catabolism but by diet. A diet rich in meats, liver and certain vegetables will markedly stimulate hemoglobin production, whereas a high carbohydrate diet will diminish it.

As has been stated, the rate of hemoglobin destruction may be estimated by the amount of urobilin in the stools and urine. In the urine it may be increased when there is no marked destruction of hemoglobin or of red blood cells, but may indicate a poorly functioning liver where the urobilin is not removed from the blood and appears in the urine. This may be tested by some of the newer methods of estimating urobilin in the blood serum and gives an estimation of liver function. In the diagnosis of various types of liver disturbance before urobilin either appears in the urine or there is icterus, it must be present for some time in the blood serum in amounts that are often below the level of kidney excretion or icterus. For the reason that urobilin may occur in the urine in conditions other than those associated with excessive blood destruction, stool and urine and blood serum determinations of urobilin must be made. The hepatic origin of urobilin under certain conditions must be borne in mind. In any case the figures for urobilin in

urine and stool should be compared with a normal standard.

Lately another method for estimating blood destruction has been suggested by the injection of sterile hemoglobin solution. The tolerance or lack of tolerance is shown by the appearance of hemoglobinuria in cases of blood destruction. The test may be of quantitative value as the amount of hemoglobin needed to induce hemoglobinuria is directly proportional to the degree of blood destruction, and the tolerance of hemoglobin may be shown to be low in conditions which are usually accompanied by elimination of urobilin.

Coagulation: This may be defined as the colloidal change, which occurs under the influence of calcium electrolytes during which the blood is transformed from the fluid state into the solidified state, which we recognize as coagulated blood. The changes which take place during this process are now more clearly understood, because the various factors which enter into them have been made capable of separate analysis. Coagulation of normal blood may be divided into three stages. Of the first stage very little is known, except that certain definite changes take place within a very short period of time. The second stage, which is the formation of thrombin, depends on the reaction between two substances, cytozyme and serozyme, the one obtained from the cellular elements, and the other from the plasma acting in the presence of calcium salts to form thrombin, which in turn, during the third stage, combines with fibrinogen to form the fibrin clot. It has been clearly demonstrated that the factor, fibrinogen, is disturbed in conditions primarily affecting the liver. Calcium itself is rarely affected except in those cases in which there is a sufficient quantity of bile salts in circulation to combine with the calcium salts, and thus render them unavailable for combination with the serozyme or cytozyme.

The factor concerning which we know the most is that derived from the cells, particularly the platelets. There are two main conditions in which there is marked disturbance of this factor. In purpura hemorrhagica there is a deficiency in the number of platelets. When the platelet count falls below 100,000 we are in danger zone; when it falls below 20,000 hemorrhage from lack of platelets will occur. In hemophilia and in the ordinary case of hemorrhage of the new-born, there is a qualitative change in the platelets or their product prothrombin. The total number of platelets may not be diminished, but qualitatively they are so changed that hemorrhage may occur at any time. In hemorrhage of the new-born this is a temporary condition and usually passes away within a very short time. We have been able to show from experimental work on the blood of the new-born that there is, during the first few days of life, a definite qualitative defect or perhaps better a lack of equilibrium in the prothrombin element. In hemophilia the condition is hereditary and constantly present whether there is bleeding or not. There are certain other types of hemorrhage of the new-born, such as that which

occurs during acute septic infection in which the antithrombin, which Howell has demonstrated, is the main factor at fault and certain other cases of liver injury, as demonstrated by Whipple, in which the fibrinogen is at fault, but the usual case of hemorrhage of the new-born, and certainly those which respond to blood transfusion, are those in which the prothrombin element is affected.

The fact that the life of the blood platelets is approximately only four days explains the reason why the value of transfusion in hemophiliac conditions is so short-lived. As soon as the transfused platelets disappear the primary condition returns. Some permanent effect on the prothrombin element has been obtained by feeding kephalin or thrombinlastic substance to hemophiliacs. This line of treatment, we feel, offers the best permanent results in true hemophiliac conditions, whereas direct transfusion in the temporary disturbance of prothrombin in the new-born successfully cures this condition, as the prothrombin factor reaches its normal level probably toward the end of the first week. This explains very clearly the success which transfusions have given in these cases of hemorrhages of the new-born. It is important to determine the coagulation time by proper methods. The ordinary method of determining coagulation time by obtaining the blood from puncture wounds is open to grave objections. Unless the blood is derived directly from a vein, tissue juices are mixed with the blood, which so affects the coagulation time that a true picture is not obtained. Normal coagulation time of blood taken from a vein averages from 6 to 12 minutes, anything over 20 minutes means definitely delayed coagulation. In estimating hemorrhagic conditions, coagulation time, bleeding time and platelet counts, with a study of retractility of the clot, fibrinolysis and recalcifying time of oxalated blood gives us sufficient data on which to make an accurate diagnosis of what factor is presumably at fault in any given case.

At the present time there is a great deal of work being done by studying the blood by chemical methods. The impetus to this work rests on the introduction, by Folin, of the micro-chemical methods of studying small samples of blood, and almost every week new methods of study are being brought out. I shall not attempt to describe any of the various methods, but some of the results of these studies and their application to a better understanding of disease should be considered if we are to understand the blood as a tissue which is capable of bearing intensive investigation and which lead materially to a better comprehension of normal and diseased conditions.

It is of interest to note that in certain nutritional conditions the blood proteins vary materially. Normally, the blood proteins vary from 7 to 8 per cent in the adult. This level during the first year is from 6 to 6.5 per cent. In cases of malnutrition it may be reduced to 4 or 5 per cent or even lower. The same may be true of the blood proteins of premature infants. And in diarrheal conditions during infancy the blood proteins may rise to 8 or 9 per cent. Whipple, in

his studies on blood serum protein regeneration, has found that where the serum protein is depleted to 1 per cent, this appears to be the absolute minimum below which the body cells cannot survive. When 2 per cent is reached, this is found to be a dangerous level of depletion. These experimental findings of Whipple agree very closely with those of Uthlein in athreptic or malnutrition infants. It is important, therefore, in these cases of malnutrition to estimate the amount of blood protein present. It has been pointed out that there is a marked similarity between the parenchymatous regeneration and the blood serum protein regeneration. Whipple suggests that it may very well be that the protein for the parenchyma cells or the protein for the blood plasma may require similar construction periods and building material, and it may be that the blood protein construction depends on the activity of the cell protein. This regeneration period in chloroform poisoning, where the liver is injured, takes from seven to ten days. These studies are very suggestive and throw light both on the prognosis of nutritional conditions and also on the progress of the condition if the proteins can be followed for their regeneration or lack of regeneration. In some of the nutritional conditions, in which the blood proteins are reduced to the danger limit, repeated transfusions of comparatively small amounts of blood will often assist in tiding over very critical nutritional periods by raising artificially the blood protein level, and will thus give an opportunity for the body cell metabolism to functionate from a better metabolic basis.

The importance of studying blood sugar has been clearly demonstrated in the study of diabetes. It is a well-recognized fact that the excretion of sugar by the kidneys is a sort of safety-valve factor. The real condition which needs careful attention is the hyperglycemia. The importance of this is shown in that as diabetes advances, glycosuria becomes less and less a safe criterion of the condition of the disease, since the permeability of the kidneys for sugar is greatly lowered, especially as nephritic symptoms appear, and blood sugar is a far better criterion of how the condition is progressing.

Of further importance in the study of diabetes, from a prognostic as well as from a therapeutic standpoint, is the hydrogen ion concentration of the blood. This is especially true as an index of present or approaching acidosis, for the blood sugar and alkali reserve in the body are important as determining factors and as indicating how the disease is progressing.

Since the introduction of simple methods for estimating the carbon dioxide combining power of the blood, much light has been thrown on the phenomena of acid intoxication. Acidosis may result either from the overproduction of acid bodies or by their decreased elimination. The normally slight alkaline reaction of the blood is maintained by the influence of the bicarbonate, chlorides, phosphates and proteins of the blood. The carbonates may be considered as a first line of defense. During acidosis other acids combine with the car-

bonates and lower the body's alkaline reserve. Under normal conditions the kidneys are able to secrete an acid urine from a nearly neutral blood through the medium of acid phosphates, which may be considered as the second line of defense, and it is this line of defense, the acid phosphates, which breaks down in the acidosis of nephritis with an increase of the non-volatile acids and a diminished available supply of alkali. Testing the amount of acetone and diacetic acid in the urine does not give very much indication as to the severity of an acidosis. The estimation of the carbon dioxide combining power of the blood gives this information much more accurately. This is especially true in following the treatment of diabetes by the Allen method. In severe nephritis, the retention of nitrogen and acetone often accompany each other, and this type of acidosis is more easily corrected by alkaline treatment than the acidosis of diabetes, in which fasting will often check the acetone body formation and so affect the acidosis much more readily than by giving alkali.

It has been shown that the respiratory center is controlled by the reaction of the tissue fluids in the respiratory center. This is dependent on the CO_2 tension, and this tension in the tissues must exceed that of the arterial blood and must be higher than in the venous blood. In anemia the carbon dioxide carried from the tissues, for each change in tissue tension is less than normal, as has been pointed out by Peters, and unless the blood flow is increased this will result in an accumulation of the carbon dioxide within the tissues. With each increase in the carbon dioxide tension the hydrogen ion concentration rises relatively rapidly. In severe anemia there is a tendency to accumulation of carbon dioxide in the tissues, a diminished ability of the blood to lose carbon dioxide in the lungs and relatively rapid change in the hydrogen ion concentration with any change in the CO_2 tension. All these factors tend to excite the respiratory center and produce dyspnoea. This is, in particular, caused by the low hemoglobin and, therefore, changes in the CO_2 tension produce great changes in the hydrogen ion concentration.

In any case in which the acid base equilibrium of the blood is disturbed the resulting acidosis may be compensated or decompensated, as has been pointed out by Means and his co-workers, and it is important to determine which of these two states exist. This is valuable not only from a prognostic standpoint, but also from the standpoint of treatment, for in a compensated acidosis, though the alkali of the blood may be diminished on account of an increase in the non-volatile acids, the blood may have a normal reaction and the acidosis be compensated. In such a case alkali therapy may not be indicated, and at times it may do more harm than good. In decompensated acidosis, alkali is necessary to change the reaction of the blood. In such cases, however, the equilibrium may be pushed too far to the alkali side and alkalosis occur unless care is taken. We may have either a condition of acidosis compensated or

acidosis decompensated, or the opposite may occur of a compensated or decompensated alkalosis. Furthermore, Means has pointed out that in certain conditions, such as pneumonia, the buffer of the blood may be normal, but the reaction more acid than normal due to carbonic acidosis. In such a case the condition is probably due to the fact that the pulmonary ventilation is insufficient to preserve the normal ratio between the soluble carbon dioxide and the bicarbonates and the blood is not getting enough carbon dioxide out. It is important, therefore, not only to estimate the reaction of the blood, but also to estimate the available alkali, and it is the estimation of these factors that establishes whether there is a compensated or decompensated acid base equilibrium.

The acidosis found associated with severe diarrhea in infancy is not due to the presence of acetone bodies, but rather to the deficient excretion of acid phosphates by the kidneys. In such cases administration of soda bi-carbonate will often correct the characteristic symptoms and give normal blood tests for alkali reserve. Notwithstanding this the child may die. Undoubtedly, in such cases the metabolism of the cells themselves has been disturbed, and simply correcting the blood alkalinity is not sufficient to restore the cellular equilibrium. The importance of these blood studies is, that by repeated blood tests we are able to arrive at a more accurate knowledge of the internal metabolism early enough to correct it, whereas if we wait until definite symptoms appear, even the most approved treatment will not check the process sufficiently to save the patient.

In nephritis the study of the non-protein nitrogen in the blood becomes important and gives a better indication of kidney function than almost any other of our functional tests both from the prognostic and therapeutic standpoint. This is perhaps more correct for chronic nephritis than for acute nephritis.

In acute conditions elimination of salts is, as we have learned, probably more important. The retention of chlorides resulting from conditions of lowered permeability of the kidneys and the retention of phosphates in the blood have a great deal to do with the production of acidosis. Where the phosphates are greatly increased, the calcium content is greatly decreased and acidosis may result. In parenchymatous nephritis the retention of salts is greater than that of the non-protein nitrogen elements. The non-protein nitrogen composition of the blood, although it constitutes only one per cent of the total nitrogen of the blood, is more important because the non-protein nitrogen factors show both the anabolic and catabolic processes more than the protein nitrogen or, at least, they give us a better insight into what is going on, and variations from the normal in the non-protein elements often aid us in appreciating what is really happening.

It has been shown by many studies that the various constituents of non-protein nitrogen have different origins. Urea is largely exogenous, while uric acid is partly endogenous and partly exogen-

ous under normal conditions of diet and health, and creatinin is almost entirely endogenous. Urea is produced mainly by the liver as a result of the de-aminization produced during digestion, which is not used immediately by the blood. Uric acid, on the other hand, is the result of enzymatic transformation of the amino- and oxy-purin. Creatinin is supposed to be formed in the muscles from creatin.

The distribution of these non-protein nitrogen constituents differs greatly in the blood and urine. The percentage of uric acid in normal blood is greater than in urine, while the urea is much lower. In the case of creatinin and ammonia it is very much lower. The kidneys remove creatinin and ammonia with great ease, whereas it is not so easy to remove uric acid. This explains why in any altered function of the kidneys the blood first shows a retention of uric acid, then urea, and lastly creatinin.

In diseased conditions of the kidneys the normal level of urea and non-protein nitrogen in the blood is usually first affected. The relationship between urea in the blood and the output in the urine should always be carried on together, especially in the study of kidney function. The important thing is the ratio between the urea content of the urine and the blood. One may have a high blood urea level with a high urinary output and still have a fairly good functioning kidney. Whereas, if the blood urea is high while the urinary output is low it shows a very much more marked defect in kidney function. Addis has devised a urea function test that aims at an estimation of the functional capacity of the kidneys when put under strain by feeding urea. This, after all, is the most important evidence needed both from the standpoint of prognosis and treatment. Urea retention occurs under a great many different conditions besides nephritis as in cardiac conditions, in syphilis, in lead poisoning, and in many of the anemias.

The blood volume, as well as the concentration of the blood, plays an important role in the pathological physiology of the blood. In pathological conditions the changes from the normal blood volume are quite striking. For example, the blood volume following severe diarrhea is markedly decreased, and in these cases the hematocrit readings show a very marked relative increase in the red blood cells and a diminution in the plasma volume. In chronic intestinal and nutritional conditions such as atrepsia or malnutrition, the blood volume in these cases is relatively increased, whereas the red cell volume is decreased. It is, therefore, important in interpreting the number of red cells to consider the change in blood volume and water content of the body. The water content of the body in children is especially affected by two factors, age and feeding. We have shown a definite curve in the blood volume in new-born infants and in infants during the first year of life.

The effect of food on the water content and, therefore, the concentration of the blood has been shown to have a definite relationship to the amount

of carbohydrate food given. With high carbohydrate food there is definite retention of water in the tissues. It has been shown that glycogen, when it is stored in the body, takes with it three times its weight in water, so that children on a high carbohydrate diet would tend to have a diminished blood volume. In nutritional conditions with marked anemia, the rate of circulation in the venous and capillary blood is important. It has been shown that there is a marked increase in the red cells and hemoglobin content in the capillaries in cases of marked malnutrition, and that this is due to the peripheral constriction of the blood vessels, which is not found in normal infants nor in those suffering from other conditions except in acute diarrhea. In both diarrhea and athrepsia or malnutrition the blood flow is markedly decreased. In anemias, even where the total blood volume is not markedly lowered, there is a change in the comparative percentage of plasma and cells, as there is a relative increase in the plasma and a diminution in the red blood cell percentage. In both chronic nutritional conditions and anemias the plasma volume may be as high as 80 per cent of the total hematocrit readings. Boch has pointed out, however, that plasma tends to be constant, so that the variation in these pathological conditions is one mainly of the red blood cells.

Where the reduction of the blood volume is as low as 20 per cent, as has been shown by Robertson and Boch, there is definite indication for transfusion because a lower limit is incompatible with life. These studies in blood volume have shown the importance of transfusion when the blood volume is so markedly reduced. In cases of acute diarrhea, vomiting, starvation, athrepsia or malnutrition, as soon as food or fluid is given, the blood volume will be rapidly restored as well as the blood flow increased. The importance of the water quotient has thus been definitely determined by a careful study of these blood factors, and these studies have undoubtedly had more effect on lowering the mortality of these nutritional conditions in infants than any other studies that have been carried on during the last few years.

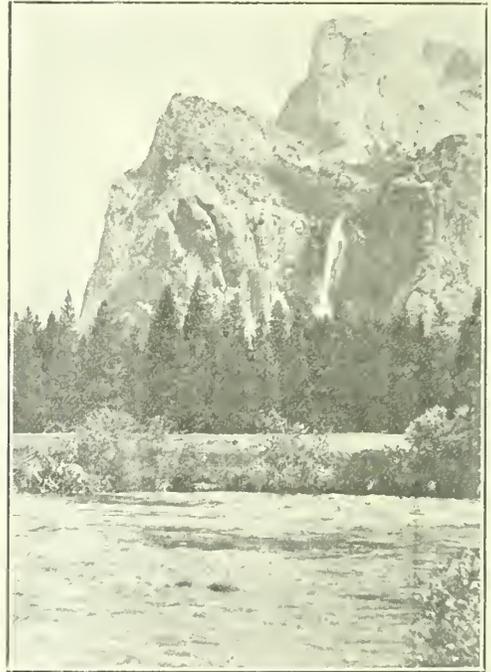
In this rather cursory discussion of some of the modern lines of investigation of the blood I have simply tried to indicate the various lines along which these problems can be attacked, and have pointed out some of the achievements which have resulted from these studies. We can confidently expect that our knowledge of these problems will be much clarified by the continuation of these investigations.

The Yosemite Meeting SUGGESTIONS FROM THE PUBLICITY COMMITTEE

How do we get there and where do we stay after we arrive?

Those are the two big questions in connection with any convention, not excepting those held in such a well-known place as Yosemite. Both will be answered here as briefly and as comprehensively as possible for the benefit of those who will attend the annual meeting of the Medical Society of the State of California, May 15-18, 1922.

Yosemite National Park—most popular of all the Nation's parks—lies almost due east of San Francisco in the heart of the Sierra Nevada Mountains and is reached by railroad and by several good automobile roads. Main lines of both Southern Pacific and Santa Fe, in the San Joaquin Valley between San Francisco and Los Angeles, pass through Merced, from where the Yosemite Valley Railroad leads up the beautiful canyon of the Merced River to El Portal, at the Park



THREE GRACES AND BRIDALVEIL FALLS AS SEEN FROM BANK OF MERCED RIVER IN YOSEMITE VALLEY EN ROUTE EL PORTAL TO YOSEMITE.

boundary. A Government highway that is like a boulevard extends from El Portal fifteen miles farther up the canyon to Yosemite Valley, the heart of the park. The drive from El Portal to Yosemite, as the village is known, is a matter of an hour, in the comfortable motor cars of the Yosemite Transportation system, one of the most spectacular hours in a lifetime, for the broad road leads through a panorama of cliffs and forests and waterfalls that has no superior anywhere in the world.

On this ride, the visitor passes through the famous "Gates of Yosemite," where El Capitan towers 3604 feet on the left, with Three Graces making a perfect background for Bridal Veil Falls on the right and Clouds' Rest and Half Dome loom up in the middle distance.

The rail journey from Merced to El Portal is only 78 miles, a trip of about four hours through famous placer mining country still scarred by the activities of '49. Detailed schedules and fares from all principal points in the State will be furnished later.

The Wawona road, 90 miles from Merced to Yosemite, paved or macadamized for 38 miles of that distance, probably will be the best road for the use of those who will go to the convention in their own machine, as the Big Oak Flat road sometimes does not open until later because of snow on the higher altitudes. However, road conditions depend on the season, and the weekly bulletin of the Superintendent of Yosemite National Park, distributed to all agencies of the California State Automobile Association and the

Automobile Club of Southern California, might well be consulted before starting the trip to ascertain just what roads are open.

A free road map, showing all routes and distances to Yosemite and also giving the automobile regulations of the park and other valuable information, may be had by addressing a postal card to the Yosemite National Park Co., 637 Pacific Building, San Francisco.

Arriving in Yosemite Valley, Sentinel Hotel and Yosemite Lodge will receive the visitors. The Sentinel is situated in the village, while the Lodge is across the river, less than one-half mile distant, in a grove of pines at the foot of Yosemite Falls. Both offer accommodations and service of the highest type, the Sentinel having its living quarters in rooms, with and without private bath, in a main and annexed buildings and the Lodge having the cabin plan of accommodations, individual houses, with and without private bath, grouped around an attractive community center.

Unobtrusive service and supremely good food have made the Sentinel favorably known to even the most jaded of globe trotters. It is one of the few hotels in the world electrically equipped throughout, all heating, lighting and cooking being done by hydro-electric power. It also is one of those rare hostelries which are operated on an "unlimited" policy in the kitchen, the chefs being unrestricted in their use of good things, so that the Sentinel justly claims the highest per capita consumption of cream, butter and eggs of any hotel on the Pacific Coast.

Rates at the Sentinel (American plan) are \$6 and \$7 a day per person in rooms without private bath, and \$9 a day per person in rooms with private bath. All rooms are outside rooms and nearly all rooms are equipped with twin beds.

The cabin type of resort, frequently encountered in the West, has reached its highest development in the American plan accommodations of Yosemite Lodge.

Redwood cabins with private baths, many of the cabins also having screened sleeping porches, may be had for \$7.50 per person per day, American plan. A generous porch gives entrance to a bedroom equipped with twin beds and other furniture of attractive design, and heated by 5000 Watt electric heaters. A dressing room or large closet provides ample space for hanging clothes. The bathrooms are equipped in spotless porcelain.

Redwood cabins without private bath make up the second group and are furnished similarly to those having baths, except that bowls and pitchers take the place of running water, and small stoves burning fragrant pine or cedar wood are used for heating. The American plan rate is \$5.50 per person per day.

Canvas cabins form the third group—and do not confuse the Lodge's canvas cabins with tents. Canvas cabins here are all that the name implies, houses with canvas for walls. They are floored, of course, and electrically lighted. Entrance is by a screen door and there are six screened windows with curtains and awnings. Furnishings are similar to those in redwood cabins without bath, and the charge is the same, \$5.50 per person per day, American plan.

Maid service in all classes of cabins assures plenty of clean towels and, in the cabins without baths, fresh water. Hot water for the morning toilet may be had without extra charge by those living in cabins without baths, if they will leave cabin number and hour desired with the Lodge office. Detached baths and sanitary, flush toilets are located conveniently.

Reading room, writing room, dining room, broad verandas, soda fountain and curio and news shops are included in the main building of Yosemite Lodge, with outdoor dancing pavilion and

theatre for evening entertainments just in front. Individual service at table is a feature of the Lodge's American plan dining room, where excellent food is appetizingly served.

Both the Sentinel and the Lodge are near the Village, the Government Pavilion, and other places where clinics and sections will meet, but for the benefit of those who do not wish to walk, a local service automobile will be operated over the floor of the Valley, following a regular route just like a street car, the fare being reduced to ten cents for the benefit of the Medical Society.

Inquiries regarding transportation to Yosemite, trips inside the park to Hetch Hetchy, the Big Trees and Glacier Point, and hotel accommodations, should be addressed to H. H. Hunkins, Traffic Manager, Yosemite National Park Co., 637 Pacific Building, San Francisco, who is acting as chairman of the Transportation and Hotel Committee for the convention.

One of the popular resorts in Yosemite Valley is Camp Curry, situated about one mile east of the village. All accommodations are on the American Plan, with accommodations in wooden bungalows with private bath for \$6 per person per day, electric stoves 50 cents per day extra, and in tents for \$4 per person per day. The resort is situated in a beautiful pine grove, with attractive central buildings and nightly camp fire and entertainment.

GENERAL SESSION AND SECTION OFFICERS FOR THE 1922 MEETING OF THE STATE SOCIETY

The list of the officers of the general sessions and the various sections of the State Society is published below, so that members desiring to contribute papers may have the names and addresses of the proper officers of the section in which they are interested. Members desiring to present papers should communicate without delay with the chairman and secretary of the appropriate section, because the program is getting well under way and will be closed and go to press the first week in February.

The Secretary of the State Society, as chairman of the General Program Committee, invites correspondence and suggestions regarding any phase of the 1922 program.

GENERAL SESSIONS

Chairman, Dr. John H. Graves, President of the Society, 977 Valencia Street, San Francisco.
Secretary, Dr. W. E. Musgrave, Chairman of the Program Committee, 912 Butler Building, San Francisco.

SECTION ON TECHNICAL SPECIALTIES

Chairman, Dr. Ray Lyman Wilbur, President Stanford University.
Secretary, Dr. Charles T. Sturgeon, Merritt Building, Los Angeles.

SECTION ON MEDICAL ECONOMICS, EDUCATION AND PUBLIC HEALTH

(League for the Conservation of Public Health)
Chairman, Dr. Dudley Smith (President League for the Conservation of Public Health), Thomson Building, Oakland.
Secretary, Dr. W. T. McArthur (Secretary League for the Conservation of Public Health), Security Building, Los Angeles.

SECTION ON INDUSTRIAL MEDICINE

AND SURGERY

Chairman, Dr. E. W. Cleary, 177 Post Street, San Francisco.
Secretary, Dr. Packard Thurber, 906 Black Building, Los Angeles.

SECTION ON RADIOLOGY

(Roentgenology and Radium Therapy)
Chairman, Dr. Albert Soiland, 527 West Seventh Street, Los Angeles.
Secretary, Dr. H. E. Ruggles, Butler Building, San Francisco.

SECTION ON PATHOLOGY

AND BACTERIOLOGY

Chairman, Dr. William Ophuls, Stanford University Medical School, San Francisco.
Secretary, Dr. Roy W. Hammack, Brockman Building, Los Angeles.

SECTION ON GENERAL MEDICINE

Chairman, Dr. Joseph M. King, Brockman Building, Los Angeles.
Secretary, Dr. E. S. Kilgore, 391 Sutter Street, San Francisco.

SECTION ON PEDIATRICS

Chairman, Dr. William Palmer Lucas, University Hospital, San Francisco.
Secretary, Dr. Hugh K. Berkley, Brockman Building, Los Angeles.

SECTION ON NEUROPSYCHIATRY

Chairman, Dr. Walter F. Schaller, 909 Hyde Street, San Francisco.
Secretary, Dr. W. B. Kern, Brockman Building, Los Angeles.

SECTION ON GENERAL SURGERY

Chairman, Dr. Charles D. Lockwood, 295 Markham Place, Pasadena.
Secretary, Dr. Edmund Butler, Butler Building, San Francisco.

SECTION ON EYE, EAR, NOSE AND THROAT

Chairman, Dr. Frank A. Burton, Watts Building, San Diego.
Secretary, Dr. Harvey McNaught, Butler Building, San Francisco.

SECTION ON UROLOGY

Chairman, Dr. George W. Hartman, 999 Sutter Street, San Francisco.
Secretary, Dr. Louis Clive Jacobs, 462 Flood Building, San Francisco.

SECTION ON ORTHOPEDIC SURGERY

Chairman, Dr. W. W. Richardson, Brockman Building, Los Angeles.
Secretary, Dr. G. J. McChesney, Flood Building, San Francisco.

SECTION ON ANESTHESIOLOGY

Chairman, Dr. Mary E. Botsford, 807 Francisco Street, San Francisco.
Secretary, Dr. Eleanor Seymour, 308 Consolidated Realty Building, Los Angeles.

SECTION ON GYNECOLOGY AND OBSTETRICS

Chairman, Dr. Harry M. Voorhees, Brockman Building, Los Angeles.
Secretary, Dr. L. A. Emge, Stanford University Hospital, San Francisco.

**SECOND SEMI-ANNUAL MEETING OF THE
COUNCIL OF THE STATE SOCIETY
AND THE OFFICERS OF CON-
STITUENT SOCIETIES**

The second semi-annual meeting of the State and constituent society officers was held in San Francisco on Saturday, September 24, 1921. The meeting was well attended by forty-one delegates, representing constituent societies from nearly every part of the State. Several of the local societies unfortunately were not represented.

It was a splendid meeting with a definite program which elicited much discussion and was carried out in a series of resolutions. Dr. John H. Graves, president of the State Society, presided, and short addresses were given by President Graves, Dr. Dudley Smith, president of the League for the Conservation of Public Health, Mr. Hartley F. Peart, general counsel for both the State Society and the League, and a number of other representatives. The importance and effectiveness of these semi-annual meetings of the Council and officers of the various societies is indicated by the following series of resolutions passed unanimously at this meeting:

1. Monthly Report of County Secretaries:

RESOLVED, That the Council of the State Medical Society and the officers of constituent societies meeting in joint session unanimously endorse and approve the program of monthly reports by secretaries of constituent societies to the State Society. It is to the best interest of medicine for the public and the profession that these reports be forwarded every month and made as complete as possible, regardless of whether the society holds a meeting or not.

2. Constituent Society Representation at the State Meeting:

RESOLVED, That the Council of the State Medical Society and the officers of constituent societies, meeting in joint session, unanimously endorse and approve the policy of the State Society's including in the program of annual meetings arrangements for one or two joint meetings between the council and the officers of constituent societies as part of the official program. It is understood that this will necessitate the presence at each State meeting of the officers of each constituent society in an official capacity;

(b) That care be used in the selection of delegates and alternates of constituent societies

to the State meetings, so that the House of Delegates may be truly representative; and that it be interpreted as a most important public duty for the delegates and alternates to attend the State meetings; and

(c) That, whenever the officially elected delegates and alternates fail to attend the State meeting for any legitimate reason, the president or secretary of the society, who will be present in another official capacity, may act as delegate.

3. Change of Officers:

RESOLVED, That this joint meeting go on record as unanimously in favor of a policy that will insure, as far as may be, a fair degree of permanency in the secretary's office of constituent societies. To this end, it is our opinion and our recommendation that constituent societies select their secretaries with the greatest care and that frequent changes in this office be avoided.

(b) In order further to secure consecutive policy in the constituent societies, we recommend that all constituent societies elect in addition to the secretary an assistant secretary, who shall be an understudy to the secretary and who for any legitimate reason shall assume the duties of secretary.

4. Training of Officers for Medical Organizational Purposes:

This body unanimously recommends that the State Society prepare an adequate outline of the duties of president, vice-president and secretary-treasurer of constituent societies, and that the State secretary be requested to present this program at the next meeting of this joint body for consideration.

(b) In order that officers of the State and constituent societies may serve their purpose in the most useful way, we recommend that it be part of the official duty of officers of constituent societies when in San Francisco to visit the State offices for the discussion of special problems peculiar to our organization.

5. Stated Meetings of the State and Constituent Society Officers:

RESOLVED, That this body unanimously endorses and approves the policy of definite meetings of State and constituent society officers as follows: One or two meetings at and during the annual meeting and one midyear meeting, to be held alternate years in Los Angeles and San Francisco.

6. Program Arrangements for Constituent Societies:**RESOLVED,**

(a) That each constituent society prepare and execute each year one special program; that this program be sent to the State secretary, who will give it publicity, with the hope that it will be taken in toto as the program of another society;

(b) That the program committee of the State Society be requested to prepare and issue to all societies one or more uniform programs, to be discussed at the same monthly meeting by every society in the State. These programs should relate to subjects of importance to all members of the profession;

(c) That it be understood to be a duty of the councilor for each councilor district to visit at least one meeting a year of each constituent society within his district; and that he, in the discharge of this duty, should arrange with the secretary of the society to be visited for the program for that particular meeting; provided, that each councilor report on the execution of this part of the program at the State meeting;

(d) That the policy of a certain number of open meetings for each constituent society is approved and recommended. In the opinion of this body each constituent society should hold not less than one nor more than three open

meetings a year, to which the general public shall be invited and which may or may not include speakers not medical men. In our opinion programs of this character should have the approval of the State program committee before being given;

(e) That the county program committees should seriously consider, at least in small counties, variations in the location of the meeting place, using different towns in the county for different meetings, and often in smaller places holding the meetings at the residences of individual members;

(f) Joint meeting of more than one society. This body approves as good policy an occasional joint meeting between small groups of constituent societies suitably located for this purpose. Programs at these meetings may be held either by one society, with the other societies as guests, or arrangements may be made for a combined program in which each of the societies of the group shall be interested;

(g) That the program committee of the State Society, under the chairmanship of the secretary, be used as a clearing house for all program work of constituent societies throughout the State; that it be interpreted to be a duty of the State and local secretaries to confer by correspondence or otherwise in making plans for advance programs; and that each constituent society have a list of programs as far as possible in advance of the meetings.

7. Extension Work of the State Society:

RESOLVED, That this body endorses and approves the idea of the State Society's developing and maintaining an extension program that will provide a list of available subjects and speakers, from which local program committees may select and extend invitations as they desire.

RESOLVED, That we urge and recommend that this extension program be expanded to include clinics, lectures, research work, etc., in the larger centers, this program to be arranged in short all-day courses of from one to four weeks each, beginning and ending upon definite dates.

8. County Editors:

RESOLVED, That this body recommend to the Council: that the present system of county associate editors for the State Journal be discontinued, and that instead the secretary of each constituent society ex-officio act as editor for his county or district.

The next semi-annual meeting of this official body will be held during the State Meeting in Yosemite next May.

The secretary of the State Society invites correspondence on matters which should be taken up at these meetings. Any local society that has a question it wishes discussed may refer it to the office of the State secretary, and it will be placed in the files for the next succeeding meeting:

COUNCIL OF THE STATE SOCIETY

(Abstract of the Minutes of the 127th and 128th Meetings)

Dr. Joseph Catton was sent by the Council to represent the California State Society at the Nevada State Society's annual meeting. The Nevada State Medical Society House of Delegates passed a resolution making the California State Journal of Medicine the official organ of the Nevada State Medical Society, and also passed a resolution appointing a small committee with power to act, further extending relations between the California and Nevada Societies.

Dr. Alfred C. Reed represented the California State Society at the annual meeting of the Utah State Society in Salt Lake. Dr. Reed received a most cordial reception in Utah, and the House of Delegates took actions which will be for the betterment of medicine in the western States.

Membership Card: The secretary presented a design for a membership card, which was adopted, and the secretary was instructed to furnish one of these cards to every new member and to every member annually as his dues are paid, this card to be considered the official notice of membership in good standing for the current year.

The Council approved the policy of requesting the League for the Conservation of Public Health to issue a uniform system of clinical and other record forms for hospitals throughout the State. Two forms, that of anesthesiology and operating-room record form, were specifically approved and recommended to the League for introduction into hospitals with the endorsement of the State Society.

Medical Histories of Various Counties of California: The Council endorsed a suggestion to various constituent societies that a profitable meeting devoted to discussion of the subject of the medical history of each county might be held during the coming year. It was suggested that discussion at this meeting should note by name and brief biographical history the medical men who have contributed to the advancement of medicine, public health and social betterment in the county and who have passed away; lives of living men, except those who have entirely retired from practice, not to be included in the biographies. The meeting should bring out the story of the progress of the practice of medicine and public health, social betterment and health influences in the advancement of civilization of the county from early days until the present. Facts brought out at these discussions might very well be written up and forwarded to the State secretary for compilation and use, at least in part, in some editorial way. The complete record ought to form part of the archives of the medical profession of this State. It is believed by the Council that a meeting of this character could be made both interesting and instructive to members of the medical profession and the public, each organization to decide for itself the advisability of having these open meetings and inviting the public to be present. It might be well to have on these programs certain prominent persons of the community interested in recording the medical and public health history of their communities and who themselves are not physicians.

Nursing Situation: The Council approved the suggestion that the secretary call the attention of various constituent societies to the importance of arousing interest in the nursing profession and in schools of nursing. It was suggested that one meeting, which should be an open meeting with the public invited, be arranged for discussing the nursing situation in each county of the State. That meeting should bring out the needs for applicants to fill the ranks of this profession, its advantages as a career for women, and it should be an appeal to young women prepared to do so to take up this profession.

Shepherd-Towner Bill: Correspondence and documents regarding the Shepherd-Towner bill having been brought to the attention of the Council, after due discussion the following resolution was unanimously passed:

RESOLVED, That the medical profession of California endorses the stand taken quite generally by the medical profession throughout the country with reference to the Shepherd-Towner bill. The need of better maternity opportunities, as well as the need for better medicine and better public health opportunities in general, is fully realized by the medical profession, who are duly sympathetic and vitally interested in bettering these conditions. However, they are most positively opposed to the method proposed or to any other method that is based upon varying forms of social health insurance, of which the Shepherd-Towner bill is one. Therefore, the publication of any literature endorsing this bill directly or indirectly does not meet with the approval of the Council;

RESOLVED FURTHER, That the editor of the Journal be instructed not only to refuse publication of any matter favoring health insurance or State medicine or similar activities, but whenever or wherever it may be done judiciously the editorial columns of the Journal are to be used against any or all such movements.

Provisions for Retirement: The following resolution was presented to the Council:

RESOLVED, That the State Society approves a policy of making provision in its constitution and by-laws for retired members:

RESOLVED FURTHER, That it be suggested to the Councils of the various constituent societies that they consider this matter for their own organizations. It is recommended that retirement be permitted for any physician who is no longer engaged in the practice of medicine or in income-producing effort in any medical or public health field, under such conditions as any local society may approve, the retired member to pay \$1.00 a year to his local organization and \$1.00 a year to the State organization: Provided, that such retired member has been continuously for the period of two years next preceding his retirement a member in good standing in his local society. For this small amount he is to be continued during life as a retired member in good standing, entitled to all of the privileges of active members, except legal defense, and subject to the same discipline.

The Council approved the policy laid down in this resolution and recommended that it be considered by the Councils of various constituent societies and submitted for their joint action at the meeting of the Council with the officers of constituent societies to be held in Yosemite next May.

About Advertising: The Council passed unanimously a resolution as follows:

RESOLVED, That no advertising matter from physicians offering their professional services shall be printed in the Journal except from a member or members of a State medical society in good standing, or one who has made application for membership and whose application is still pending.

Indemnity Defense Fund: Discussion was had as to the present condition of the Indemnity Defense Fund and as to what steps could be taken to bring the existence of the fund and the advantages of becoming a member to those doctors who have not already joined the same. Discussion also included consideration of the limited number of commercial companies now in this field and the advantages of perfecting the society's own defense without reference to any outside insurance. Pursuant to the desirability expressed above of increasing the membership in the Indemnity Defense Fund and bringing the advantages of becoming a member to all doctors who have not joined, it was voted that a one-half page of the advertising columns of the Journal be placed at the disposition of the Indemnity Defense Fund each month for such copy as the attorney should see fit to use in it.

Extension Work

Extension work of the State Society was discussed editorially in the August issue of the Journal. The subject was given consideration at the recent semi-annual meeting of state and county society officers. Those interested in the problem should read the resolutions published in the proceedings of this semi-annual meeting in the November issue of the Journal, page 448.

The following list of speakers and their subjects has been completed. Others will be added to the list and published from time to time.

Societies may invite any of these speakers directly or they may send their requests to the State Secretary.

Alfred C. Reed, M. D.,

350 Post Street, San Francisco.

1. Heart Disease in Everyday Practice.
2. Diagnosis and Treatment of Amebic Colitis.
3. Vitamins and Food Deficiency Diseases.

Eugene S. Kilgore, M. D.,

391 Sutter Street, San Francisco.

1. Irregularities of the Heart:

A brief discussion of the seven most common cardiac arrhythmias (sinus arrhythmia, heart block, extra-systoles, paroxysmal tachycardia, flutter, fibrillation, and alternating pulse). Special emphasis is placed upon the clinical bearing of these irregularities as they affect prognosis and treatment; also upon simple ways of recognizing them without special instruments.
2. The Treatment of Infections of the Heart and Aorta:

Bacterial infections are often insidious and overlooked during active stage, when rest and not digitalis is needed. Presence or absence of systolic murmurs often misleading. During healed or quiescent stage of endo-, myo- or pericarditis are problems, which vary greatly in different cases, of adjusting load to preserve compensation. During decompensation beware of reinfection. Means of lessening the heart's work and helping it meet minimal requirements. Newer suggestions in use of digitalis and quinidine. In syphilitic infections intensive and long-continued anti-luetic treatment is essential, but the greatest difficulty lies in sufficiently early diagnosis. Diversity of early symptoms. Aid from suitable X-rays.

3. The Handling of Hypertension Cases:

Prophylaxis involves heredity, infections, and strenuous living. Importance and difficulty of early recognition. Experience with college students. Futility of late eradication of focal infections.

Fully developed cases may, to slight extent, avoid the hazard of apoplexy, may be safeguarded somewhat against renal failure, but can accomplish most in prolonging circulatory efficiency. Disappointment in pressure-lowering drugs. Use of digitalis. Value of regimen and schooling, especially to avoid heart "bumping." Blood-letting. Treatment of acute decompensation.

H. Lisser, M. D.,

240 Stockton Street, San Francisco.

- 1—The More Important Diseases of Ductless Glands; Their Clinical Signs and Symptoms. (Illustrated by lantern slides.)
 - (a) Thyroid—
 - (1) Exophthalmic goiter.
 - (2) Toxic adenoma.
 - (3) Myxedema.
 - (4) Sporadic cretinism.
 - (b) Pituitary—
 - (1) Gigantism.
 - (2) Acromegaly.
 - (3) Infantilism.
 - (4) Dystrophia adiposa-genitalis.

11—The Less Well Known Diseases of Ductless Glands.

- (a) Parathyroid—
 - (1) Tetany.
- (b) Adrenal—
 - (1) Addison's disease.
 - (2) Pseudohermaphroditism.
 - (3) Precocious sexuality.
- (c) Pineal—
 - (1) Precocious sexual development.
- (d) Thymus—
 - (1) Status thymus-lymphaticus.
- (e) Testicles—
 - (1) Eunuchoidism.
- (f) Ovaries—
 - (1) Menstrual disturbances.

(2) Menopausal disturbances.

(3) Ovarian obesity.

(4) Precocious sexuality.

(g) Placenta, mammary, prostate, pancreas, spleen.

III—Hypopituitarism and Its Treatment. (Illustrated by lantern slides.)

(a) Levi Lorain infantilism.

(b) Froelich's dystrophy adipose-genitalis.

(c) Post-adolescent hypopituitarism.

(d) Pituitary obesity.

(e) Pituitary amenorrhoea.

(f) Pituitary headache.

(g) Pituitary epilepsy.

(h) Pituitary psychoses.

(i) Diabetes insipidus.

The clinical signs and symptoms, and the treatment of the above conditions.

IV—The Therapeutic Effects of Pituitary Extracts.

(a) Pressor effects on the circulatory, alimentary and urinary symptoms, the uterus and the spleen.

(b) Antagonistic effects in hyperplasia of other ductless glands.

(c) Supplementary effects in hypopituitarism.

(d) The different preparations of pituitary extract and methods of administration and dosage.

V. The Differential Diagnosis Between Exophthalmic Goiter and Toxic Adenoma; the treatment of each.

(a) Clinical course.

(b) Signs and symptoms.

(c) Prognosis.

(d) Medical treatment and results.

(e) X-ray and radium.

(f) Surgical procedures.

(g) Diagnostic tests.

(h) Basal metabolism as a help in diagnosis and as a guide in treatment.

VI—The General Principles That Should Govern the Treatment of Ductless Gland Disease.

(a) In hyperactivity—inhibitory agents. X-ray, radium, sedatives, surgery, antagonistic organ extracts.

(b) In hypoactivity—supplementary feeding.

(c) Monoglandular therapy; pluriglandular therapy; advantages and disadvantages of each.

(d) Properly controlled clinical observations as an essential feature of future progress.

Nelson W. Janney, M. D.,

Pacific Mutual Building, Los Angeles.

1. Relation of Basal Metabolic Studies to Clinical Medicine.

2. The Treatment of Diabetes Mellitus With Special Reference to Problems of the General Practitioner. (Illustrated with lantern slides.)

3. The Diagnosis and Treatment of Hypothyroidism. (Illustrated by lantern slides.)

Samuel H. Hurwitz, M. D.,

516 Sutter Street, San Francisco.

1. Modern Aspects of the Treatment of Diabetes.

2. High Blood Pressure; Its Significance and Management.

3. The Treatment of Asthma.

4. The Value of Certain Modern Laboratory Procedures in the Diagnosis, Prognosis and Treatment of Disease.

James T. Watkins, M. D.

Medical Building, San Francisco.

1. The Diagnosis and Treatment of Back Injuries.

2. The Latest Advances in Orthopedic Surgery.

Alson R. Kilgore, M. D.

391 Sutter Street, San Francisco.

I—The Question of Exploring Breast Tumors for Diagnosis.

Impossibility of absolute clinical diagnosis in early stage.

Experience shows that exploration followed by immediate operation for cancer is safe. Exploration with delay for pathological diagnosis almost 100 per cent fatal for certain types of cancer, because metastasis is stimulated.

Findings at exploration make it possible to tell even without frozen section whether tumor is benign or malignant in 90 per cent of cases.

Discussion of exploration appearances:

(a) Positive evidences of benignancy.

(b) Positive evidences of cancer.

(c) Borderline or doubtful group.

Lantern slides.

II—The Pre-cancerous Lesions of the Breast.

Not all breast lesions are likely to degenerate into cancer.

Importance of recognizing the pre-cancerous lesions, because of differences in extent of operative removal required.

Discussion of clinical and exploratory diagnosis and operative indications in each:

(a) Paget's eczema of the nipple.

(b) Residual of breast abscess (lactation mastitis).

(c) Galactocele or milk cyst.

(d) Single cyst containing papilloma.

(e) Multiple cysts with papillomas—cystic breast—Schimmelbusch's or Reclus' disease.

Lantern slides.

III—The Diagnosis of Bone Tumors, Clinically, by X-ray and at Exploration—Operative Indications of Each.

Classification of the various bone tumors.

Clinical significance of age of patient, location in skeleton, duration of symptoms, pain, pathological fracture.

Rules for interpretation of X-ray appearances. Diagnostic findings at exploration.

Indications for treatment in each type of tumor.

Demonstrations of Illustrative X-rays and photographs of specimens. Lantern slides.

IV—The Problems of Early Cancer.

Summary of statistical studies demonstrating permanent curability of early as apposed to late cancer.

Increasing difficulty of diagnosis as patients are educated to come early.

Necessity for establishing rules of procedure in the various types of early cancer:

(1) Lip cancer.

(2) Other mouth cancer.

(3) Skin cancer.

(4) Breast cancer.

(5) Uterus cancer.

(6) Bowel cancer.

(7) Internal cancer.

Relation of syphilis to cancer, with special reference to its bearing on anti-syphilitic treatment of doubtful lesions.

Present status of radium and X-ray in cancer treatment.

A. B. Cooke, M. D.,

Hollingsworth Building, Los Angeles.

1. The Nature and Management of Hyperthyroidism.

2. The Classification and Differential Diagnosis of Goiters.

3. Surgical Aspects of the Goiter Problem.

John Hunt Shepard, M. D.,

San Jose, California.

1. Our Knowledge of the Thyroid Gland.

Henry E. Dahleen, M. D.,

San Jose, California.

1. The Diagnosis of Urinary Lesions.

Joseph Catton, M. D., 209 Post St., San Francisco.

1. **The Injured Head.** What do its symptoms indicate after the first month?

Headache, vertigo, insomnia, irritability, memory defects, asthenia and other symptoms may characterize the case of head injury after the immediate symptoms have cleared away. The same symptoms may be present with definite brain lesions which are demonstrable by present clinical methods; with non-demonstrable organic lesions; or with functional brain derangement variously called traumatic, post-traumatic, or traumatized necroses. Discussion of methods of attack in determining the basis of the symptoms in a given case; present diagnostic limitations; treatment.

2. **Disease and Disability.** Their dissection into the facts, the functional and the feigned.

Dealing with the methods of differentiation of organic, functional and malingered conditions. The importance of such differentiation for proper treatment for patient; for equitable decision as regards liability by courts and commissions; to prevent the doctor being a party to fraudulent claims.

3. **The Doctor Before the Bench.** Considering the conduct of a doctor both before courts and commissions, and in making examinations and reports which find their way to judicial tribunals.

Consideration of the attitude towards patients and their representatives in cases with liability features; the attitude towards representatives of the other side of the case; the attitude towards other doctors who have examined the case. The differences between everyday reports and those in liability cases. The attitude as a witness, including examinations, reports and testimony in industrial accident cases.

4. **Psychoanalysis.** Considered as a "Fringe of Medicine."

Brief story of its development and history. Description of the psychoanalytic method. Its uses. Its abuses. Consideration of its exploitation by laymen, and the resultant danger to public morals, public health and public safety. Its place in medicine in the hands of the neuro-psychiatrist; in the hands of the general practitioner. Its place outside medicine as a sister-cult with Eddyism, adjustmentism, pressureism and the rest. Consideration of the attitude of neglect of use of well-founded scientific mental therapeutic methods, by the medical profession. How the latter leads to the development by and for the members of what Munsterberg has aptly termed "The Intellectual Underworld"—of unscientific practices aimed at the cure of disease, and in many instances more particularly at the accumulation of finance.

Book Reviews

"Modern Italian Surgery and Old Universities of Italy," by Dr. Paolo De Vecchi, 43 Fifth avenue, New York City, N. Y. Published by Paul B. Hoeber, New York.

The many friends of Dr. De Vecchi, formerly a prominent and much beloved physician of San Francisco, will read with pleasure the volume which he has recently published.

At the close of the war, Dr. De Vecchi spent more than a year in Italy for the purpose of collating the medical history of the Italian campaigns. The results of his inquiry he has recorded in the first hundred pages of this volume, thereby making a notable contribution to the literature of war surgery and sanitation. The last half of the work is devoted to a brief account of the educational institutions of Italy.

Dr. De Vecchi's long residence in Italy, his native country, and his deep interest in all that

pertains to the Italians, has given him peculiar facility for this undertaking. T. W. H.

General Pathology. By Horst Oertel. An Introduction to the Study of Medicine. New York: Paul B. Hoeber, 1921.

This treatise on General Pathology by the Strathcona Professor of Pathology of McGill University is interesting in many respects. The absence of all illustrations in a text on pathology is one striking feature. In this connection, Professor Oertel states that "the emphasis has been put on discussion of the nature and development of pathological processes, and it is assumed that laboratory experience will supplement the use of the book."

To the writer of this review it has always been questionable whether in a general pathology the profuse illustrations now so commonly introduced are really necessary or even desirable, because they distract the student's attention from the text and sometimes give rise to erroneous impressions. They certainly can replace in no way the actual handling of the material in the laboratory.

Book one on etiology consists very largely of a brief description of various pathogenic bacteria. This to my mind is the least satisfactory part of the book, because it contains too much bacteriological detail and too little that is of interest of the point of view of general pathology. The emphasis placed on matters historical is commendable and the parts dealing with this side of the subject might be amplified. If the portion dealing with bacteriology were reduced to proper proportions, space would be gained for a fuller presentation of the subjects dealt with in book two—on pathological anatomy, histology and pathogenesis—which in places is so brief as to be confusing, especially to beginners.

On the whole, the book is an interesting attempt to present an old subject in a new way. W. O.

Edgar A. Poe—A Study. By John W. Robertson, M. D. Printed in San Francisco, Cal., by Bruce Brough, 1921.

Of all the studies of the life of Edgar A. Poe, this which was undertaken by Dr. John W. Robertson is the most unique, because it is an analysis of the underlying psychopathic basis of Poe's dramatic life. Other men have compiled his writings and elaborated biographies. However, they are most unfortunately based upon a premise of error. In nearly every instance they take their fundamental misinformation from a biography by Griswold.

This man, immediately upon the death of Poe, through underhanded methods gained possession of all his writings and compiled a most scurrilous biography defaming the name of one of the greatest literary men of the age. Griswold had a deep-seated jealousy of Edgar A. Poe, and after the death of the poet he spent his venom upon the name. It is largely owing to the writings of this detractor that we consider Poe a drunkard and a degenerate. He was belied.

Poe was essentially a psycho-neurotic, a morbid genius, a hypersensitive soul, a man of fine dreams and most tender sentiments. He was loyal and loving to his wife and mother-in-law and to those who were fortunate enough to be his intimate friends. He was, however, cursed with periodic alcoholism. This study made by Dr. Robertson shows very clearly that the man was abnormally sensitive to alcohol and that a small amount brought on a pathological state which was often taken for gross intoxication.

It is clearly shown also that drugs in no way entered into the life of this great poet. He was not, as has been claimed, ever under the influence of opium and other hypnotics. His death, undoubtedly influenced to some extent by alcoholism, was clearly one resulting from pneumonia and terminal meningitis, and not the base, inglorious exit de-

scribed by his malignant biographer Griswold. Unfortunately, it was on this biography that Lauvrière based his psychopathic study of Poe, and his statement as to the effect of alcohol and opium in the genesis of much that Poe wrote has proved more injurious to his memory even than Griswold's prejudiced memoirs. Probably the greatest service Dr. Robertson has rendered is in the complete annihilation of Lauvrière psychopathic deductions.

Dr. Robertson has collected and has in his possession practically the entire writings of Edgar A. Poe. For more than thirty years he has made a study of his life and literature. That portion of his book which deals with the bibliography is most fascinating. The physician alone is capable of understanding and interpreting the basic emotions which governed the career of this unfortunate poet. This book will become a standard by which a true estimate of Poe can be obtained.

Saxton Pope.

County Societies

Alameda County Medical Association (reported by Dr. Pauline S. Nusbaumer, secretary)—The September meeting of the association was held at Oakland Health Center, September 19, with about 100 members present.

Dr. M. L. Emerson's subject was "Falciform Ligament Tug, Causing Intra-abdominal Distress." He reported seven patients in which operation showed bands of organized areola tissue originating in the fold of the falciform ligament of the liver, perforating the transversalis fascia and linea alba, causing a resistant tug on the falciform ligament and symptoms of abdominal distress. In accordance with Moskovitz's studies these would all have been classed as epigastric hernia. Emerson considers the operative technique a minor procedure which should be performed through a small incision, if possible, in order not to make it appear that the patient has had an extensive abdominal operation. He believes the term "epigastric hernia" to be a misnomer.

Dr. C. A. Dukes's subject was "Cysts of the Long Bones, with Report of Two Cases." The first patient, a boy of eleven years, was operated by Dr. Dukes in 1908. The diagnosis was spontaneous fracture of the neck of the right femur, due to a large bone cyst. An incision was made over the swollen area and the cyst curetted. A Lane plate was placed for the purpose of maintaining position. Uneventful recovery followed and X-rays taken recently show the plate in perfect position, and there was normal functioning of the leg without shortening. Dukes's second patient, seen in 1918, was a boy seven years of age, with a fracture of the right humerus at the neck. X-ray showed a large bone cyst with swelling of the shoulder. Incision was made and the cyst curetted. The arm was maintained in position by a splint. The patient made a satisfactory recovery with no deformity or loss of function. Dukes calls attention to the rarity of true bone cysts, and also to the fact that a metal plate may be retained in position indefinitely.

Dr. S. H. Buteau's subject was "A Plea for More Frequent Consultations and for the Practice of Group Medicine." Buteau considers that the science and art of medicine have grown beyond a masterly comprehension by any one individual. The surgeon and the internist who have reached more than mediocre success are representative of two distinctly opposite types of mind—the surgeon, the objective type; the internist, the subjective type. These two types are rarely blended in one, hence specialism is more than selective, it is largely physiological. If we accept the above statements, more frequent consultations, or, better still, the practice

of group medicine, becomes imperative for the best interests of the sick.

A number of case histories were presented to the meeting and a number of members took part in the discussion on the subjects comprising the program.

Dr. Belle Ellingsen Merrill, Dr. Clyde T. Wetmore, Dr. Waldron A. Gregory and Dr. Isabelle Armstrong were elected members of the association.

At the October meeting of the staff of the Merritt Hospital, Dr. W. A. Clark was elected chief of the gynecological staff. The program was as follows: The Preparation of the Surgical Patient, by Dr. W. E. Mitchell; Heart Block, by Dr. A. A. Alexander; Councilmania Infection, by Prof. C. A. Kofoid.

Imperial County (reported by Dr. H. W. Owen, secretary)—The first meeting of the county society following the hot season will be held on the second Thursday in November.

Dr. Owen has submitted some advertising matter from a chiropractor who makes unusual claims even for that particular cult. This fellow claims that tonsillitis is caused by subluxation of the lower cervical vertebrae, and he apparently does not appreciate the fact that the nerves that supply the tonsils are cranial nerves and not spinal nerves at all.

Merced County (reported by Dr. Brett Davis, secretary)—The October meeting was held in the office of the secretary with eight members present and twelve absent. Dr. A. R. Kilgore of San Francisco was present and discussed the subject of "Bone Tumors." His lecture was illustrated by lantern slides. Doctors Fountain, Davis, Zirker, Lilley, Parker, Mudd, Cotton and Williams took part in the discussion.

Placer County (reported by Dr. Robert A. Peers, secretary)—The Placer County Medical Society held its regular meeting in the Masonic Temple, in Auburn, Saturday evening, October 8, 1921. In the absence of the president, Dr. Charles J. Durand, the vice-president presided. Dr. John A. Russell, of Auburn, was elected a member of the Society. The secretary presented to the members of the Society a resumé of the work which has been done by the League for the Conservation of Public Health and set forth, in addition, some of the problems with which the League would be confronted in the future. He made an appeal for the support of each individual member of the Society to the end that the work which the League is carrying out should be as uniformly successful in the future as in the past. Doctors E. H. Falconer and J. H. Woolsey, of San Francisco, also spoke briefly on the same subject.

The literary program consisted of two very excellent addresses, one by Dr. J. H. Woolsey, Instructor in Surgery, of the University of California, on Tumors of the Thyroid with Especial Reference to Adenoma, and the other by Dr. E. H. Falconer, Assistant Clinical Professor of Medicine, of the University of California, on Practical Application and Uses of Blood Transfusion.

The next meeting of the Society will be held in Auburn, early in December.

San Bernardino County (reported by Dr. Eyttinge, secretary)—The October meeting was held at the San Bernardino County Hospital with forty-five members and fifteen guests present and fifteen members absent. Dr. C. F. Whitmer reported on the semi-annual meeting of the State and constituent society officers recently held in San Francisco. Mr. Celestine J. Sullivan, executive secretary of the League for the Conservation of Public Health, and Dr. W. T. McArthur of Los Angeles, made an appeal for support of the League and its work by

members throughout the State. The response on the part of the members of San Bernadino County was generous and prompt.

It being the annual meeting of the society, Dr. L. M. Coy, San Bernardino, was elected president; W. D. Lenker, San Bernardino, first vice-president; J. H. Shreck, Redlands, second vice-president, and E. J. Eytunge of Redlands, secretary.

Doctors V. G. Alderson, Chino, D. C. Mock, Redlands, and A. S. Leven, Arrowhead Springs, were elected new members of the society.

San Diego County (reported by Dr. Robert Pollock)—The County Hospital has engaged the services of a full-time dietitian. They are looking for a laboratory technician and for a full-time house physician, preferably a young man recently graduated. The hospital has thirty-three pupil nurses, which is an increase of sixteen over last year. A few more can be accommodated at the beginning of the new term, December 1.

The hospital school of nursing had a booth at the recently held county fair which attracted considerable attention. There were three nurses in attendance demonstrating a practical hospital bed and hospital appliances, giving bedside demonstrations of practical nursing and distributing information pertaining to the school of nursing. The school has instituted self-government, making its own rules and regulations.

The Vauclain Home for the Tuberculous has been redecorated and has increased its nursing staff.

The September meeting of the Medical Society was held in the auditorium at St. Joseph's Hospital. Dr. A. B. Wessel's paper on the "Complications in Adenoid Operations" was discussed by Drs. Burton, Brown and Doig.

Dr. R. K. Barry's paper on the "Relation of the Cardiac Arrhythmias to Cardiac Disease" was discussed by Dr. Churchill.

The October meeting of the society will be a clinic at the County Hospital.

At a meeting of the medical staff of St. Joseph's Hospital, held on Tuesday, September 27, the report of the hospital service for the months of June, July and August was read. Constructive criticism was offered by a number of the members, tending to make these reports more distinctly valuable. The questions of greater efficiency and economy of time in the operating room and the laboratory were discussed.

The board of directors of the Medical Library Association held their last meeting for 1921. The library is nearing the close of its seventh year of successful service.

Dr. Louis Strahlmann of San Diego has recently been appointed County Health Officer, vice Dr. Geo. B. Worthington, resigned.

San Francisco County (reported by Le Roy Briggs, secretary)—During the month of September, 1921, the following meetings were held:

Tuesday, September 13—General Meeting

1. Blood transfusion, practical points in the selection of donors. E. C. Dickson.
2. Technique of transfusion, comparison of methods. Harold Brunn.
3. Indications for and results of transfusion in surgical cases. Leo Eloesser.
4. Indications for and results of transfusion in medical cases. W. F. Cheney.

Tuesday, September 20—Section on Surgery

1. Accidental hemorrhage during pregnancy. K. L. Schaupp.
2. Severe hemorrhage in pregnant women due to tumors of fetal tissue. F. W. Lynch.
3. Vaginal drainage with presentation of new instrument. F. R. Girard.

Tuesday, September 27—Section on Eye, Ear,

Nose and Throat

1. Toti-Mosher external and internal tear sac operation; case of tubercular dacryocystitis. A. C. Gibson.
2. Demonstration of eye cases. Hans Barkan.
3. Demonstration of cases and new methods.

San Francisco County—November program:

Section on Surgery

Tuesday, November 15, 1921—8:30 p. m.

1. Pyelitis in pregnancy with report of an unusual case. J. A. Sperry and Sidney Olsen.
2. Fractures in transplanted bone. S. L. Haas.

Eye, Ear, Nose and Throat Section

Tuesday, November 22, 1921—8 p. m.

1. Demonstration of cases.
2. Study of bacterial cultures of the nose and throat of children during health and sickness. W. F. Lucas.
3. Three cases of radical mastoid with sinus complications. H. J. Cohn.
4. Remarks on work in European clinics. H. B. Graham.

San Joaquin County Medical Society (reported by Dr. Dewey R. Powell, secretary)—The regular meeting of the San Joaquin County Medical Society was held Friday evening, September 16. Vice-president Linwood Dozier presiding. Those present were: Drs. L. Dozier, H. Smythe, E. A. Arthur, H. E. Sanderson, B. F. Walker, F. J. Conzelman, F. J. O'Donnell, J. V. Craviotto, B. J. Powell, R. T. McGurk, H. C. Peterson, J. D. Dameron, H. S. Chapman, H. C. Price, F. S. Marnell, L. Haight, W. J. Young, J. W. Barnes, G. J. Vischi, Minerva Goodman, D. R. Powell; and Drs. E. C. Fleischner, Eugene Kilgore and K. F. Meyer of San Francisco as guests of the evening.

Dr. Eugene Kilgore of San Francisco spoke on "Some Modern Conceptions of Treatment of Circulatory Disorders." He divided the heart infections into bacterial infections, syphilitic infections and miscellaneous infections. In the treatment of the bacterial infections he spoke of the importance of early recognition; the elimination of focal infections; the regulation of the life of the patient to avoid decompensation, and when decompensation does take place to avoid reinfection. He emphasized the importance of rest in bed under these conditions, the importance of the position in bed and the control of the diet and fluid intake. The drug most used in these cases is tincture of digitalis in large doses. He also spoke of the good results obtained from quinidin.

In the treatment of the syphilitic conditions he emphasized the importance of the case history and the early recognition of the disease, the X-ray of the arch of the aorta was particularly important. The treatment preferred was a preliminary series of mercury for ten days and then small and increasing doses of salvarsan alternating with mercury, also supplementary treatment with potassium iodide.

In the miscellaneous cases of heart trouble he spoke of hypertension and the sclerotic types. The first thing here was to increase rest, prevent undue exercise and overloading of stomach and to teach the patients how to adjust themselves to their condition. Kilgore's subject was discussed by Dr. E. A. Arthur, Dr. J. D. Dameron and Dr. R. T. McGurk.

Dr. C. E. Fleischner of San Francisco spoke on the treatment of Diphtheria. The important contribution of Schick in 1913, when he introduced the intra-cutaneous test bearing his name for the determination of the susceptibility of immunity to diphtheria, was emphasized. This test has proven quite accurate in many thousands of cases and has given us the statistical information that in the first six months of life 80 per cent of the children are

immune. From six to twenty-four months there is a decrease in the percentage of immunity, so that at two years there is practically only 20 per cent immune and 80 per cent susceptible. From two to twelve years the percentage of immunity again arises, so that at twelve years of age about 80 per cent are again immune. By the use of toxin-antitoxin mixture the patients found to be susceptible can be rendered immune by three subcutaneous injections one week apart. After the first injection 80 per cent are immune, after the second 90 per cent, and after the third 97 per cent. In treating cases of diphtheria Fleischner emphasized the importance of the earliest possible administration of the antitoxin and the necessity of giving an ample dose at the first injection and then no more; also, he emphasized that the intravenous method was by far the most efficient, stating that 10,000 units intravenously was equivalent to 40,000 intramuscularly. The speaker felt that, with the methods now at our disposal, diphtheria could be absolutely controlled and that in a few years' time should be stamped out.

Dr. K. F. Meyer, of the University of California Hospital staff, spoke on Bacillary Dysentery. He spoke of the large number of carriers who were harmless during the winter but dangerous during the summer time, and particularly when out in camp. He emphasized the importance of the proper method of stool examination in order to determine the presence of the bacilli. The serum treatment has proven quite efficient, provided adequate dose is given to start with. The speaker then told of the work done by a committee of three, of which he was a member, appointed by the State Board of Health to study botulism. Since 1910 there have been 138 cases in California with 81 deaths, 323 cases in the United States with 260 deaths, a mortality of 63 per cent. In California the principal causes were home-canned string beans, asparagus, peaches, pears, apricots and commercially canned spinach. The botulinus bacillus is always present in dirt and can be isolated from most any virgin soil specimen. The organism is very resistant to heat and requires long-continued cooking at a high temperature to insure its elimination. The commission has formulated very rigid rules to be carried out by canners, and prevention of the recurrence of infections from this source is practically controlled, but there will remain danger from inadequate cooking of home-prepared vegetables and fruits.

The three visitors were given a unanimous vote of thanks for giving to the members of the society one of the most profitable evenings ever enjoyed.

William James Young. Died September 26, 1921. Monday morning, September 26, the community at large and the medical world in particular was shocked to learn of the sudden death from heart failure, while at his morning bath, of Dr. William James Young. Dr. Young had been in active practice in the City of Stockton since 1898, and during the past twenty-three years had made for himself an enviable position in medical circles and in the eyes of his fellow citizens. His opinion was widely sought and greatly valued as a consultant, and his frankness, honesty and sincerity brought him legions of friends. While Dr. Young knew full well of his heart condition, nevertheless it was hoped that he would have many years of useful activity ahead of him. His place will be hard to fill in the community and his life will serve as an inspiration to guide younger medical men. (Reported by Dewey R. Powell, secretary and assistant editor, San Joaquin County Society.)

Santa Barbara County (reported by Dr. H. L. Schurmeier, secretary)—The September meeting was held at the Cottage Hospital with twenty members present and thirty-six absent. Dr. H. M. Shaw of Los Angeles presented a paper on "Re-

sults in the Interposition Operation in Prolapse and Proctidentia." Dr. Henry Profant discussed "The Vestibular Apparatus," and Dr. Blatherwick "High Fat Diets in Diabetes."

Doctors Ullman, N. H. Brush and Schmitt were elected to membership.

The October meeting was held at the Cottage Hospital with twenty-five members and five visitors present.

Dr. Albert Soiland of Los Angeles, in discussing the "Effects of Radiation upon Hypertrophied Tonsillar and Lymphoid Structures," urged co-operation between the surgeon and the radiologist in this character of work. Dr. Charles L. Lowman of Los Angeles discussed the subject of "Spastic Paralysis in Children."

Dr. Farman was elected a new member.

Santa Clara, San Mateo, San Benito, Monterey and Santa Cruz County Medical Societies met in joint session at Gilroy during the latter part of September. The local arrangements for this very splendid meeting were in the hands of Dr. Jonas Clark of Gilroy. The meeting opened with a banquet at which seventy-five society members and guests were present. Dr. Raymond Wayland, president of the Santa Clara County Society, presided.

The meeting was opened by an address of welcome by Mayor Princevalle of Gilroy. Papers were read by Dr. W. B. Coffey of San Francisco, Dr. A. R. Kilgore of San Francisco, Dr. Carl Hoag of San Francisco and Dr. Dudley Smith of Oakland. Short addresses were also delivered by Dr. P. T. Phillips of Santa Cruz, Dr. J. G. Null of San Carlos and Dr. T. C. Edwards of Salinas, the latter being a member of the Council of the State Medical Society.

Sonoma County (reported by Dr. N. Juell, secretary)—The October meeting was held at the Eldridge State Home, October 14, with nine members and four visitors present and twenty-four members absent. Dr. Butler had prepared a mixed program of social and scientific entertainment.

Dr. A. G. Lumsden of Petaluma and Dr. E. F. Roth of Geyserville were elected new members.

Tulare County (reported by Dr. Elmo R. Zumwalt, secretary, and Dr. J. Tracy Melvin)—The September meeting of the society was held at the Hotel Johnson, Visalia. There were ten members and three visitors present and twenty-five members absent.

President Preston reviewed the work of the League for the Conservation of Public Health and urged all members to respond to its suggestions. Dr. Alson R. Kilgore of San Francisco presented a paper on the "Precancerous Lesion of the Breast."

Dr. Sherman Rogers of Tulare was elected to membership in the society.

Things Every Physician Should Read

Go Home and Organize. (Editorial, Medical Standard, October, 1921, page 11.) A brief but pertinent discussion on organization, in which a New York State Senator gives the following advice to a physician who was in Albany in the interest of better medicine:

"You doctors are the dearest people on earth and we love every hair in your heads—as individuals, but as a class, you are pitiable; you spend your time, money and energy for the advancement of science and the betterment of mankind, and you don't know the first thing about self-preservation. The propagandists are organized; you are not, and you are not even well informed. You are wasting your time at the Capitol. Go home and organize."

The practical value of the Senator's advice is daily demonstrated in California. Our doctors anticipated this advice three years and a half ago by organizing the League for the Conservation of Public Health and are carrying forward a constructive program which is producing better medicine, better hospitals and better health. It is a distinguishing mark of an ethical doctor who is progressing and at the same time practical, that he is an active League member.

Malpractice Insurance and Its Costs. (Folonie, Ill., Med. Journal, August, 1921, page 92.) Articles upon this subject are appearing from time to time in various journals. Physicians ought to be interested, and it is not a loss of time to read everything that appears upon the subject.

Trailing the Robin Hoods of Medicine. (Editorial, The Century Magazine, October, pages 953-960.) The editor takes the Johns Hopkins Hospital ruling on medical and surgical fees as a text to write a most amazing article on the socialization and nationalization of medicine. The author displays a remarkable lack of knowledge of the ideals, methods and purposes of the medical profession, and he proposes the same old remedies, for what he considers medical failure, that have been proposed so many times before and which are used today as propaganda for nationalization of medicine. The importance of this article lies in the fact that it has editorial prominence in an influential magazine. Paternalism and politics are endeavoring to subject medical science to political process. That way danger lies.

Openings in U. S. Public Health Service

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held November 14, 1921, at Washington, D. C., Chicago, Illinois, and San Francisco, California.

Candidates must be between twenty-two and thirty-two years of age, and graduates of a reputable medical school. They must pass satisfactorily oral, written and clinical tests before a board of medical officers.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

California Association of Physiotherapists (reported by Miss Hazel E. Furchgott, president)—At the October meeting Dr. George J. McChesney discussed the subject of Flat Feet and the part played by physiotherapy in the treatment.

At previous unreported meetings, Dr. W. F. Schaller discussed the subject of Electrotherapy; Dr. C. L. Tranter, Physiotherapy and Peripheral Nerve Lesions; Dr. H. C. Naffziger, Physiotherapy and Hemiplegics, and Miss Hogue, superintendent of Stanford University School of Nursing, discussed the subject of Ethics.

The next meeting of the Physiotherapy Association will be held in the rooms of the County Medical Society on November 9, 1921. Dr. Carl Hoag will talk on "Physiotherapy in Treatment of Fractures."

New Members

Charles R. Brenner, San Diego; Fred H. Linthicum, Los Angeles; John F. Chapman, Pasadena; Leo M. Schulman, Nevin D. Pontius, H. L. McCarthy, L. P. Kaull, G. Glass Davitt, Wm. W. Burson, Herbert I. Bloch, Los Angeles; Sherman Rogers, Tulare; Lloyd D. Mottram, Walter A. Smith, John A. Cooper, Modesto; John S. Hogshead, Covelo; C. Latimer Callander, Walter G. Harder, San Francisco; Edwin F. Hagedorn, Oakdale; John A. Russell, Auburn.

Deaths

Jackson, Edward R. Died in Los Angeles, August 30, 1921, age 73. Was a graduate of the Hahnemann Medical College and Hospital, Philadelphia, 1881. Licensed in California, 1915.

Jones, John Leland. Died in Los Angeles, September 30, 1921. Age, 71. Was a graduate of Louisville, Ky., 1872. Licensed in California, 1899.

Scott, Alfred J. (Sr.) Died in Sacramento, Cal., October 16, 1921. A graduate of University of Michigan, 1882. Licensed in California, 1904. Was a member of the Medical Society, State of California, also a member of the State Board of Medical Examiners.

Toner, M. F. Died in Berkeley, Cal. Was a graduate of Jefferson Medical College, 1892. Licensed in California, 1893. Was a member of the Medical Society, State of California.

Young, W. J. Died in Stockton, Cal., September 28, 1921. Was a graduate of Cooper Medical College, Cal., 1897. Licensed in California, 1898. Was a member of the Medical Society, State of California.

MORE ABOUT THE YOSEMITE
VALLEY MEETING

FIRST EDITORIAL THIS ISSUE

REMEMBER THE DATES OF THE
STATE MEETING

MAY 15, 16, 17, 18, 1922

YOSEMITE VALLEY

PATRONIZE THE CALIFORNIA
STATE JOURNAL ADVERTISERS
THEY HELP TO SUPPORT YOUR
JOURNAL

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

BUTLER BUILDING, 135 STOCKTON STREET, SAN FRANCISCO

Editor and Secretary : : : : : W. E. MUSGRAVE, M. D.
Managing Editor : : : : : CELESTINE J. SULLIVAN

VOL. XIX

DECEMBER, 1921

No. 12

THE USE OF QUINIDIN IN CARDIAC ARRHYTHMIAS

The past two decades have witnessed decided advances in our knowledge of cardiac action, both physiological and pathological. The criticism has been offered, however, that a corresponding increase in therapeutic management of heart disease has not been made. Recent reports of the control of certain cardiac arrhythmias, more particularly auricular fibrillation, indicate that this side of the subject has not been neglected.

Wenchebach, in 1914, seems to have been the first to suggest a possible control of fibrillation by quinine. Frey, in 1918, reported a study of the action of various cinchona derivatives on auricular fibrillation and found that the most effective of these was quinidin, which is a dextrorotatory stereo-isomer of quinine.

Subsequent reports have tended to confirm Frey's conclusions. Records of well over a hundred cases of auricular fibrillation treated with quinidin are now available, and of these over 50 per cent have resumed a normal sinus rhythm. The duration of regularity varies; there seems to be a distinct tendency to return to fibrillation. The most susceptible cases are those of recent origin, such as the types developing after an operation of an acute infection like pneumonia. The longer the fibrillation has lasted the more refractive it is. The fibrillation associated with hyperthyroidism seems especially unresponsive. In the presence of decompensation only half as many cases become regular as among those compensated. Frey recommends preliminary improvement of the circulation by means of rest and digitalis.

Recommendations of dosage vary among the different observers. Some advise 0.2 gm. five times a day; others give 0.4 gm. three times a day, and a few give even larger doses. Resumption of the normal rhythm is apt to come on the second or third day after starting treatment, though it has taken as much as 15. gms. to attain success. Toxic symptoms are quite similar to those of quinine: nausea, vomiting, headache, ringing in the ears, or even some disturbance of vision. In two cases alarming symptoms of temporary suspension of respiration and collapse were noted; however, there seems little danger when less than 3 gms. per day are given.

Pharmacologically, the action of quinidin seems to be wholly on the heart muscle. There is a decrease in the rate and amplitude of contraction.

The chief effect seems to be in a progressive reduction of irritability, as shown by the fact that larger induction currents are necessary to incite extra systoles, and in a heart well under the influence of quinidin, fibrillation cannot be induced in this way.

While the effect of quinidin on auricular fibrillation has excited most interest, the drug is often very useful in abolishing extra systoles and for its general quieting effect in irritable hearts. It would seem that a decided addition has been made to our therapeutic management of cardiac diseases.

ON ADVERTISING IN LAY PUBLICATIONS

A considerable number of our members from different parts of the State have been writing to the secretary's office, enclosing clippings from newspapers of public advertising by individual physicians. Some of these advertisements are more or less extensive and read like an advertisement for a new patent medicine. There seems to be in the minds of some of our members a question as to whether or not such procedure is or is not ethical. The answer is very clear and not susceptible to misinterpretation. Chapter II, Sec. 4 of the Principles of Medical Ethics covers the situation:

SEC. 4.—Solicitation of patients by circulars or advertisements, or by personal communications or interviews, not warranted by personal relations, is unprofessional. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not *per se* improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

Under this ruling, in communities where the majority of physicians desire to do so, it is not unethical to carry simple announcement cards in the public press.

Original Articles

RETURN TO WORK AFTER INJURY*

By MORTON R. GIBBONS, M. D., San Francisco.

My hope in reading a paper with this title is to direct attention to the prevailing attitude which exists toward work, which workmen's compensation produces, and to enlist support of propaganda for alteration of this attitude.

Many writers and speakers have noted this attitude especially with respect to neurological results.

Is it logical to expect a reward for getting hurt? No one ever thought of reward until industrial accident compensation or War Risk Insurance came. With the soldiers, to be sure, it is natural enough, but for workmen to assume the attitude is irrational.

Why is it that a physician will suffer a Pott's fracture and with crutch and cast, resume the routine of his calling, including automobile driving, in nine days? The surgeon is lucky if he gets a compensation case on his feet in nine weeks. Why is it that in one factory an amputated finger case is at work in his place in ten days? The average time is six weeks. Because, in the first instance, there is incentive, and in the other there is compulsion. Why not, then, provide some combination of incentive and compulsion?

Why is it that the injured is generally subjected to a radical change of environment and habit? Public sentiment contributed somewhat to the treatment, but do not the doctors provide a most artificial environment in their hospitals? Do they not contribute the most to the destruction of normal routine? Work-treatment is known to be valuable. Occupational therapy is a generally accepted treatment. Normal habitat, habits and routine, make for health of body and especially of mind. Our treatment of the injured should involve as slight departure from normal in habits and environment as is compatible with proper technical treatment.

No one is morally entitled to idleness because he has been hurt. It may be best for him to be perfectly idle. That is all right, then it should be so. But morally, when he may do any work without harm to himself, he should work. Steady work and routine are moral, beneficial, normal. Idleness in any walk of life is demoralizing, harmful and abnormal. The normal animal works that

it may live. If it cannot work, it ceases to exist. Humanity is the only barrier between destruction and survival of the injured in industry. Compensation is *too* human. If it were to stop short of demoralizing, it would be far more enlightened, more civilized and do more good than it does. What I am getting at is that given equally efficient treatment, the workman is rehabilitated quicker from the same injury when he hustles for himself. My processes in arriving at this conclusion need not be analyzed here. Anyone with experience in these matters will bear me out.

We cannot go back to the old order of things. The product must pay for its production, and production costs lives and limbs. So the product must take care of the injured, and the injured workman must be taken care of by one other than himself. We must neutralize this disadvantage to attain the greatest good.

The Bureau of War Risk Insurance has a very serious handicap in this feeling of right to idleness. The feeling neutralizes much of the effort toward rehabilitation. Unfortunately public sentiment and the American Legion sentiment fosters this spirit. But public sentiment gets things mixed sometimes, and the proper and laudable desire to get the best for the disabled succeeds sometimes in getting not the best by any means.

It may sound harsh to say that were public sentiment and the American Legion sentiment to say, "You have a duty to perform yourself in your rehabilitation, the doctors can help you just this much, but without your co-operation and effort, even at the cost of pain, you are not doing right by yourself or us." If the spirit is not right, the body cannot be made right.

All of the things which work-treatment involves have already been tried out successfully somewhere. It is no new thing. In each instance it has been an individual effort and plan, and not the product of public sentiment. It has been all the more difficult of accomplishment. Colonel Harry Mock of Sears Roebuck & Company has followed such a plan for years. The Goodyear Rubber Company places its injured operative back at the job compatible with his condition as early as possible. The American Can Company sends the injured worker to the doctor and the doctor sends him back to work after such minor injuries as amputated fingers and fractures. He goes to work at once with one hand. It is no fanciful estimate that convalescence is shortened 50 per cent. As I understand it, the injured worker of each of these organizations receives full pay. Very many other important plants follow variations of work-treatment.

A corollary to my statement that no injured person is morally entitled to idleness, is that every injured person is morally entitled to earn whatever he can with whatever function he possesses. "No one is disabled whose spirit is not disabled." Some independent souls will find work in spite of vast handicaps. A man called a few days ago asking about a disability rating. A year before he had suffered a fracture of several vertebral processes. He wears a body cast. He had been

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

working since three months after his injury. He had needed the money for his family. He had earned more than before his injury! We do not encounter many such refreshing incidents because few men have the requisite extraordinary initiative, fortitude and fortune. Withal, this man is in better physical condition than the average case is, in such interval of time after injury. There are many obstacles to such occurrences. Some of them, to enumerate, are: (1) Public sentiment against work when at all incapacitated and the reflected personal attitude; (2) Lowered pay; (3) Inability of the average working man to secure positions for himself because of handicap; (4) Satisfaction with compensation and lodge benefits, often totaling more than the wages; (5) Timidity, neurosis, lack of fortitude to bear the pain entailed in work; (6) Aversion to attempting work of a kind not followed when hurt; (7) Disinclination of employers to experiment with cripples; (8) Hostility of bosses and fellow-workmen; (9) Union opposition as against union principles; (10) Inertia of employers or of insurance companies in finding suitable occupation; (11) No tangible pecuniary advantage to any one.

I imagine that this last statement is the crux of the whole matter. But, is there no tangible pecuniary advantage? I cannot state which of the larger and best organized companies in the country follow a plan of work-treatment, but I can state that a large number of them do follow a system of rehabilitation through work, and that they find it economical, both as to time and as to money. Inability to see the tangible pecuniary advantage may be more exactly characterized as lack of education, or lack of self-interest. The insurance companies charge a premium which more than covers costs as they are. Why should they worry or bother with work-treatment?

The work-treatment after injury can be ideally carried on in a large industrial plant which supports its own dispensary and medical department on the ground. The surgeon can make inspection of the work environment of the injured under his treatment, and can actually prescribe work, being familiar with the situation himself, and see that it is carried out without abuse.

This needs the practical co-operation of bosses, but that has been obtained satisfactorily in many plants.

The vast number of those injured in small plants, however, are not susceptible of such easy disposition.

However, the insurance companies could, by a system of merit rating, or some system akin to that, arrange for work for the convalescent in the industrial plants, in which they were hurt. The alternative for this is, workshops connected with hospitals. This presents many difficulties, not the least among them being the disposal of a product if the injured man is to be paid for his work. Pay for work is essential, I think. The injured must receive his full wage.

*I visited one time a tuberculosis sanitarium in England which carried out a work-treatment. Patients there were gradually strengthened, until such time as the director thought them sufficiently strong to be discharged. Before discharge, however, he required each one to work for two weeks at his own trade without deterioration. Work was under service conditions as nearly as could be simulated. The product of the work was sold by private enterprise. The English people appear to co-operate more willingly in such matters than do ours.

Some of the hardest problems we meet are involved in the cases of partly disabled men who have dependents. They cannot exist upon the compensation which they receive, are not able to find employment for themselves and employment is not furnished. Without any doubt, many of these cases are hampered in their progress toward recovery, and sometimes are permanently disabled because of the futility of any effort they can make on their own account and the anxiety and depression incident thereto.

I see a large number of cases which I am positive would have recovered normally and in a reasonable time had they been able to work. They have been willing to work, anxious to work, but unable to because of the barriers in the way. Work must be furnished! We used to tell the partly disabled to get light work and we would cut off part of his compensation. The average worker simply can't find it.

All of this subject of work is going to require re-education of the public and of the injured. It has become a habit of thought that an injury entails idleness. This habit of thought will have to be overcome, partly by rational consideration, and partly by the example of a class large enough and with sufficiently good discipline to reverse the present system. It will also require the co-operation of the unions. I believe that the unions will co-operate as soon as the rationality of the work-treatment appeals to them; and as soon as they are assured that the injured worker will receive as much pay for his time as he did before he was injured.

Discipline will be another urgently required factor. It will never do to have certain groups of men idle during their convalescence and to have others required to work. The change in public sentiment will take care of the discipline, however. The Industrial Accident Commission administers the law in this particular in a manner helpful to the belief expressed here.

The points which I am endeavoring to make are:

That injury is not to entail idleness.

Work is to be provided with full pay.

Work in the plant where injured, under supervision of the plant physician, is best.

Work in plant where injured, reporting as need be to physician, is good.

Work provided by hospital, school, farm, etc., is preferable to idleness.

Pay must be the same as when injured.

INSURANCE RATES A GUIDE TO HYGIENIC CONDITIONS SURROUNDING DIFFERENT OCCUPATIONS *

By MILBANK JOHNSON, M. D., Los Angeles.

Industrial Hygiene has been a theme of increasing interest for many years. The physician working with the industrial population was the first to recognize that much could be done for suffering humanity by improving the conditions under which it worked in the different industries. But years passed before employers appreciated that improved working conditions meant increased personal profits. No substantial progress was made until this fact was thoroughly demonstrated, except such improvements as were caused by the forced enactment of laws governing working conditions. These included the abolition of sweat shops, child labor and other extreme abuses.

You are all familiar with the steps taken by the legislatures of the different states. Proper ventilation, proper lighting facilities, in certain trades, proper bathing facilities, convenient sanitary and toilet arrangements conducive to the health and happiness of the worker are now a general requirement.

Certain occupations like the dusty trades, namely, cutlery making, file making, steel grinding and coal mining in general, as well as marble cutting, were responsible for a long train of pulmonary troubles among workers. These were actually considered necessary evils coincident upon the work involved. Many other occupations had a large death rate and were attended by certain accidents and diseases on account of special dangers and hazards which many thought necessary, if these particular types of work were to be performed.

Then came the National Safety Council which, through study and education has reduced tremendously the number of accidents in the various occupations. Large employers have greatly appreciated the work of these agencies. They realize that the improvement in working conditions and prevention of accidents and the safeguarding of the health and happiness of their employes has resulted in a lessened number of strikes, reduced the labor turnover, and increased greatly the efficiency of the individual worker.

During the last steel strike the writer asked the president of one of the largest mills, which employed over 24,000 workmen, why there were no strikers in his mill, while in every other steel mill in the district the furnaces were cold. He replied that he believed that the policy pursued in the past by his company for the prevention of accidents and the general improvement of working conditions among the people was responsible for the degree of loyalty demonstrated in this crisis. He felt that this one experience repaid them for the money and time expended by the company in the past in this humanitarian work.

Accident Insurance companies base their premium charges on what it costs to provide a given amount of money for disabilities resulting from accidents and disease. Therefore, their classifications which are the result of the actual

experiences of the company based upon years of observations, should be a correct measure for time lost by men in each of the occupations.

The great mass of data obtained by the insurance companies has not been available in the past to the hygienists who are studying this question. Much has been said and written upon the question of Compulsory Accident and Health Insurance, in fact many of the states have laws requiring the indemnity of the employes who are injured while engaged in their work. These do not, however, provide for illness benefits.

Most of these laws have been the result of general altruistic sentimentality rather than the result of careful study based upon large experience. It is not the purpose of this paper to go into the merits or demerits of workingmen's compensation insurance nor is it the purpose to discuss in detail actual rates and classification of the various companies.

For many years insurance companies have adhered strictly to the insurance business; writing policies upon the lives and health of individuals. For given sums of money, they have paid weekly and monthly indemnities as well as principal sums, these depending on whether the policyholders are injured or actually killed. They have believed that this was the whole function of insurance.

Insurance officials lately have realized that insurance, like other growing things, is a great economic measure capable of larger and wider functions than the simple payment of indemnities to the injured or money to the beneficiaries. They have recognized that in order to fulfill its greatest degree of usefulness, it must enter the field of prevention. This viewpoint has resulted in a sincere desire of the insurance companies to help humanity to bring accident and disease to an irreducible minimum. Many companies are interested in this problem and are helping to support the great movements tending in this direction.

I need hardly call your attention to the work done by the Metropolitan Life Insurance Company in the last few years and the vast amount of good resulting therefrom. Take for example the Framingham Demonstration where that company has assumed the expense and management of the entire health department of a city of over 16,000 inhabitants. They have demonstrated conclusively that wise administration of health matters may be undertaken and carried to successful conclusion, thereby enormously reducing the death rate of these cities, particularly in diseases like tuberculosis and other communicable or preventable illnesses.

The sanitary survey of the city of New Orleans, financed entirely by this same company, has resulted already in such great changes in health administration throughout the South as to substantially reduce the mortality there.

The Prudential Life Insurance Company, while attacking the problems from a different angle, has through its publications and dissemination of information spread throughout the land made propa-

* Read before the Section on Industrial Hygiene at the meeting of the State Medical Society of California at San Diego, May, 1921.

ganda for health betterment of untold value to our people.

The presence of the representatives of insurance companies at this convention and the financial support by the companies of our League for the Conservation of Public Health demonstrate their sincerity in wishing to take an active part in the whole health conservation movement.

In 1907 the Association of Life Insurance Medical Directors, which was later joined by the Actuarial Association of America, began a systematic investigation of the records of about forty-three of the largest and most important life insurance companies in North America. This investigation resulted in the issuance of the joint Medico-Actuarial report and is included in about ten volumes of highly technical and special reports. It forms most authoritative data since it gathers together the collective experiences of many life insurance companies extending over a long period of years.

Many valuable and startling facts were developed in the investigation. From it, medical directors and actuaries are now able to rate many people who were before this time considered un-insurable and unsafe risks.

From this has been developed by Dr. Rogers of the New York Life Insurance Company a system of classifying sub-standard risks by advancing the actual age of individuals suffering from different impairments. This advanced age, based upon the Medico-Actuarial report and more detailed study of the New York Life Insurance Company itself, has resulted in insuring thousands of individuals engaged in more or less hazardous and injurious occupations, thereby extending the benefit of insurance to many heretofore deprived of it.

While this form of "rating up," as it is called, a certain number of years for various occupations may be arbitrary, still it is actually based upon losses in these occupations. It, therefore, points to the necessity of active prevention in certain occupations as well as suggests the direction which the effort should take; namely, in those occupations most heavily penalized.

It is the purpose of this paper to call attention to the enormously valuable data in the hands of insurance companies and to urge health officers to consider this new source of information to the end that practical improvement may be made in the prevention of accidents and diseases in the several communities.

OCCUPATIONAL DISEASES OF THE SKIN AND HANDS IN CALIFORNIA INDUSTRY*

By ROBERT T. LEGGE, M. D., F. A. C. S., University of California, Berkeley, Cal.

Industrial physicians and dermatologists have observed that industrial processes have long been responsible for many dermatoses, principally of the eczematoid type, varying from the erythema and desquamative forms to a vesicular and bullous state of the skin. Since many of our states

are including occupational diseases as compensable under the workmen's compensation laws, it naturally follows that prevention and the more careful study of these occupational dermatoses is attracting attention. The various itch found on worker's hands are usually eczematous lesions, mainly the result of external irritation on account of the constant exposure to certain dusts, chemicals and oils. Moisture, cold and heat aggravate the condition, and often the lesions become infected by scratching and the inoculation of a staphylococcus pyogenes aureus. Flour, soot, cement and sugar are typical examples and factors in simple dust irritants of the skin, while anilin and wood alcohol produce desquamative types, and machine and chlorine gas are examples of the group that result with pustules.

In California, along the coast ranges and foothill roads and farm lands, rhus diversiloba grows commonly and is responsible for a dermatitis which is familiar to us all. When farmers, road builders and railroad section-men contract poison oak, it must be classed as an occupational risk. At the University of California, for the past six years, the incidence of this one malady has kept constant at 6 per cent of the entire student body, and offers a general idea of the prevalence of this common dermatitis.

McNair, of the University of California, after spending two years in research, has discovered and isolated an active principle of the fresh sap emulsion that is capable of producing a dermatitis which he has called lobinol. However, with all the experimental work performed, this investigator has not been able to offer any means of immunization or improvement on the present established methods of therapy. The desensitization of persons against rhus and ivy poisoning is now in the process of perfection, and for the present the preventive measures practical are the use of strong soap and water, alkalis or alcohol, used directly after contact with the plant.

My attention was recently called, by two large manufacturers of tile and electric lamps, to a peculiar condition that their packers were suffering from; an itching of the hands and legs, probably due to straw which they submitted for investigation. After studying and classifying the botanical nature of the straw, it was discovered to be infested with an arachnida known as the pediculoides ventricossus, described so ably by Schamberg and Goldberger. During the warmer weather these mites can be found on straw and grain where they feed, and where the straw is handled by the harvester or packer. These mites, hardly visible to the eye, attach themselves to the skin by means of sucking disks and claws. They do not burrow into the skin as the sarcoptes scabiei characteristically does, but while attempting to obtain nutriment injects into the skin a toxic substance which provides the local phenomena. The worker complains of constant itching, and exhibits on the exposed parts of hands, arms and legs punctate lesions, later an urticaria of various sizes which contains a small vesicle in the center of the wheals that shortly

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

becomes pustular. This blood-sucking parasite, when puncturing the skin of the hands, is easily rubbed off, and for this reason more lesions are found on the arms and legs.

In Schamberg's cases the lesions were universal on account of the patients being infected from sleeping on infested straw mattresses. The varicelloid vesicles, interspersed with the wheals, presented lesions on the back which resembled chicken pox, and had slight constitutional manifestations. The curative treatment recommended was a sulphur and balsam Peru ointment, which has proved efficacious.

One of these firms, a tile manufacturer, desired advice as to the best means of preventing further infections from the huge stock of infested straw already on hand. My advice was to fumigate the loose straw with sulphur, which is cheap and yet fatal to the mite. It is, however, not applicable if the straw so treated is to pack certain metal goods, on account of the resultant tarnishing. Formaldehyde fumigation in this case, followed by a thorough drying in the sunshine, is a satisfactory procedure.

The second occupational disease of the hand investigated was a peculiar manifestation found among dried fig packers. These operators, in twisting and "pulling figs" during the packing season, exhibit a lesion on their fingers and hands resembling a simple dermatitis which gradually spreads and later involves the deeper tissues. The skin soon becomes fissured and infected, and the areas much indurated and phegmonous. It was observed that these workers who return to the packing-houses, each year suffered from the same condition. Promologists and horticulturists have noticed for years that pickers of ripe figs have experienced an acute irritation of the skin, first believed to be due to the tiny spicules on the fruit or those on the rough leaves of either the edible or capri figs. The superficial effects from picking capri figs with bare hands, is a smarting and itching sensation which persists for some time after the hands are washed. As there is very little leaf surface on the trees in the early part of the season, attention was stimulated to investigating the latex or milky secretion. Strasburger, a botanist, mentions that the latex cells secrete in the milky exudate a poisonous alkaloid, calcium malate and proteid granules. This milky substance is found not only in the stems and epidermis of the fruit, but in the latex tubes of the branches, as it has been observed that workers in budding fig trees experience the same stinging sensations and dermatitis that is found in pickers and packers.

Among the fresh fruit pickers, in some cases, the symptoms appear in three or four hours, producing a stinging sensation and even blistering, and causing sanguineous oozing. In the dried fig packers the symptoms are slower in developing, undoubtedly due to the drying by causing a destructive action of the enzyme, which is found normally in the latex of the *ficus carica*. The abrasive action on the cuticle of the hands of the operators when pulling open the dried figs permits directly this protein enzyme to produce a

digestive and dissolving action of the tissues, and is the etiology that is responsible for the lesions. This is the hypothesis I offer.

My conclusion reached from the result of laboratory experiment is that the latex, when added to coagulated egg albumen produced by the enzyme proteolytic, changes. Naturally, the lesions produced invite secondary infection, particularly of the staphylococcus group, as can be determined by culture methods.

Further investigation will be continued in the study and prevention of this seasonal occupation. The preventive measures offered are the use of cotton gloves, or anointing the hands with a high grade mineral oil, such as the lighter automobile lubricants.

THE DEVELOPMENT OF A MODERN MEDICAL SERVICE FOR THE INDUSTRIAL INJURED AND SICK AT THE HAHNEMANN HOSPITAL OF THE UNIVERSITY OF CALIFORNIA*

By EDGAR L. GILCREEST, M. D., San Francisco, Cal.

This is an industrial era—a day of organization and of group thought and effort in medicine. The time demands the establishment in every large city of an Industrial or Reconstruction Hospital for the rehabilitation of workers, suffering from industrial injuries or occupational diseases, by the application of methods developed in the World War. Whatever has contributed to the safe and expeditious handling of our war cripples and to their earliest and most complete possible restoration to service, should become a part of the equipment of the industrial hospital.

That great strides have been made in recent years in the East in the care of the industrial sick and injured was brought forcibly to my attention in the fall of 1919, when I attended an industrial session in New York and was so impressed with the possibilities in this field that I decided to visit some of the larger centers. Accordingly I went to the Bethlehem Steel Works in Pennsylvania, then to the Goodyear Rubber Company in Akron, Ohio, and to various industries in Toledo, then to Sears-Roebuck in Chicago. To one who has not followed the progress in this new branch of medicine, it is simply amazing the development that has occurred in medical organization alone.

Universities are fast realizing the necessity of incorporating in their curriculum, courses in industrial surgery, medicine and hygiene. Harvard, Cincinnati and Chicago deserve especial mention, as well as the University of California. The American Medical Association has organized an Industrial Section. Industrial medicine of a high type has come to stay.

It is estimated that annually 250,000 workers are thrown out of employment through accident in the United States alone. This army of industrial injured is about three times the number of men in our national army before the World War. As we gave consideration to our men from

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

the firing line, so should we give consideration to these men from the working line. The scientific care of the industrial injured is a worthy problem, at once interesting and appealing.

A well-organized and equipped industrial hospital reacts to the great good of the entire community. The enactment by employers' liability legislation, together with a realization of responsibility by progressive and humane employers, has brought about a demand for industrial hospitals.

With the advent of industrial hospitals there have been developed industrial surgeons—men who have shown their fitness and ability, not only as surgeons, but often as executives with a broad and far-seeing vision. The delay in recognizing and including surgeons in industrial organizations in the past was in part due to the lack of training and sympathy of most of the medical profession. Until very recently, surgeons associated with an industry or an industrial hospital were considered by many of their colleagues to be basking in the twilight zone of professionalism.

At present the great mass of the injured are treated in general hospitals. The patient is seen by the visiting surgeon or by the plant doctor, but often the treatment is entrusted to less experienced men. Often the attending surgeon is a general surgeon who has had little interest in and given little time to traumatic surgery and to the great development made in it during the past five years, and cares nothing at all about industrial relations. The injured, who is entitled to the best scientific treatment of the day, not infrequently finds that he is not in the most skilled hands, and that as an industrial case he is regarded in the hospital as a nuisance. Even if he is fortunate enough to fall into skilled hands and the immediate treatment or operation is performed properly and well, what often follows? For weeks, and not infrequently months, the patient is left to his own devices. Lying there in idleness, with worry and melancholy his chief companions, is it any wonder that traumatic neuroses develop? Satisfied with a good surgical end result, very little thought is given to the injured's future economic usefulness.

The University of California in its industrial hospital, the Hahnemann Hospital, is attempting to furnish a complete service for the industrial injured. As executive medical officer of this hospital I shall enumerate briefly the departments which we are maintaining.

I

Physiotherapeutic Department—No other recent development in the treatment of the injured has meant such an economic gain and relief of physical suffering and disability as the scientific application under this department of moist and radiant heat, massage, electro- and hydro-therapy, therapeutic exercises, etc. Nine specially trained technicians treat daily in this department about seventy cases. Emphasis is laid upon the operation of trained attendants rather than upon the use of elaborate machines. This is in keeping with the idea of the reconstruction department of the United States Army. All patients are treated under the supervision of a physician,

and efforts are made to familiarize the doctors who send patients to physiotherapy, with the function of the department by requiring that patients be treated only upon the prescription from the attending physician, and that the attending physician see each case in conference with the physiotherapy worker at frequent intervals. Several of the physicians hold regular clinic hours in the physiotherapy department, and regular classes of the technicians are held for the further study of physiotherapy. In the choice of the technicians it is very important that they should have attractive personalities, should be sympathetic and encouraging. As Burlingame says, this is "one of the points in the art of the practice of medicine as distinctive from the science of practice."

This functional re-education is best carried out in a clinic. The psychic effect upon the patient of receiving treatment together with others suffering from similar disabilities is excellent. On commencing treatment, the injured sees others who are nearly ready for discharge, and he learns at first hand of the splendid results obtained. This makes it easier for him to devote his time seriously to the often necessarily long and tedious course of treatment. Every surgeon, who is required to deal with the casualties of industry, should be thoroughly informed upon the subject of vocational re-education and should, by his service to employer and employee encourage this humanitarian movement to salvage the industrial cripple.

II

Occupational Therapy—This department covers the function of bedside occupation and light occupation for the average convalescent. Few people can be idle successfully. Necessarily deprived of many natural activities, the patient stands in special need of the work cure as the only means of bringing him back to a normal way of living. At first anything which diverts the mind from unhealthy thoughts is good. Depression often leads to despair, and despair to chronic failure. Work, rightly used, has been proven an efficient remedy. Occupational therapy is of value to both the patient's mind and body, and is of great assistance to both the physician and the nurse. The value of occupational therapy will never in any case be a measurable quantity and, therefore, the importance of it is often not appreciated.

Occupational work may be divided into four groups:

1. *Amusements*—Pastimes which lessen hours given to discouragement, complaints, etc.

2. *Light Crafts*—Which (a) occupy the man more seriously than amusements and give him the added pleasure and satisfaction of making useful articles; (b) and give the necessary exercise which is recommended by the doctor. A man often profits by the exercise gained in this way when he has failed to respond to gymnasium work. Involuntary muscular action is very beneficial. These crafts consist largely of reed work, hand weaving, etc.

3. *More Serious Crafts and Shop Work*—These have all the advantages of the light crafts, and in addition are a preparation and a transi-

tion for future vocations. They consist of loom-weaving of rugs and mats; copper work, such as trays, lamps, and book-ends; chair caning; wood carving.

4. *Educational Work*—Americanization, English, history, mechanical drawing, lettering, supervised reading.

Difficulties in Occupational Therapy are:

1. The adult mind does not learn easily, especially after long years of mental inactivity.

2. Getting started with the patient is in many cases a slow process requiring much tact and patience.

3. It is not easy for him to realize the therapeutic value of work.

4. The ambitionless type is difficult to stimulate.

III

Social Service Department—Social work is now universally accepted as a necessary adjunct to medicine, just as medicine has become indispensable to industry. An industrial hospital is a great social institution, and is incomplete without an active social department. To have someone look after his personal needs or affairs, which may be causing him anxiety, is not infrequently a very important aid to the injured's recovery. One of the most important phases of industrial rehabilitation lies in aiding the disabled workman to believe in himself and in his own ability to again become industrially independent. Much depends upon the man's own attitude.

One of the first steps toward assisting the patients to help themselves is embodied in the out-patient department of our hospital. This is especially beneficial to men who have been convalescing in the hospital for a long time and are still in need of physiotherapy. These patients are placed in supervised homes within a radius of one, two or three blocks from the hospital as soon as they can safely leave the hospital. They return to the hospital for their meals, where a special dining-room is set aside for them. This arrangement is productive of good in several ways. It removes many cases from the hospital during their convalescent period before they get thoroughly hospitalized and dependent; and it keeps most of these men off the streets and out of the bars, where many of them would loiter most of the day if they picked their rooms wherever they chose. The necessity of keeping these men in a healthy atmosphere away from shyster lawyers, Bolsheviks and malicious advisers is of paramount importance. They are made to feel welcome around an industrial hospital, and encouraged to spend their time profitably. A number of these men attend night classes at the Commercial High School. Others take special courses arranged by the Industrial Accident Commission.

Diagnostic Group for Conference Cases—A group of various specialists on the Staff makes this hospital especially able to work out difficult conference cases. Often as many as seven or eight specialists will be called to give a report on an injured man as to whether he is suffering from an organic lesion or a functional disturbance, and if so, what is the extent of his disability. Each

one sees the case separately and writes his findings; then at a luncheon-conference the case is thoroughly discussed and a diagnosis reached. The advantages of a group working together in this way are thoroughly covered in a paper by Doctor Cleary before this society.

Much of our industrial surgery has been more or less revolutionized as a result of the World War. We are living in an age of conservation. Limbs are now saved from amputation, and lives are saved that formerly would have been lost. Believing so thoroughly in the efficacy of the Carrel-Dakin method for the treatment of wounds and infections, if it is properly carried out, we have set aside special wards for its use, and nurses are specially trained in the care of these cases. We have a workshop for the making of our splints and a competent mechanic, who is able to turn out a splint in a few hours.

We have tried to develop an "esprit de corps" throughout our whole institution, and make the injured feel that his recovery is our chief aim. The general result of these efforts to develop an adequate and coherent service is to send the patients away satisfied, with an abiding interest in and appreciation of the hospital. This is manifested by many of them returning after their discharge. The foregoing, I hope, will give some idea of the extent and directness of attack which we are making in the problem of the salvage of human waste resulting from injury. To its solution we are exerting our best efforts.

Bibliography

- Sherman, Wm. O.: *Mod. Med.*, 1921, III, 29.
Carr, A. Moncrieff: *Mod. Med.*, 1920, II, 426.
Burlingame, C. C.: *Jour. Ind. Med.*, 1921, II, 368.

THE SERVICE OF NEUROPSYCHIATRY TO INDUSTRIAL MEDICINE*

By HAROLD W. WRIGHT, M. D., San Francisco, Cal.

The expense and trouble connected with the operation of any large industry employing a considerable number of people is chiefly due to labor turnover.

Reports of labor investigation commissions, when analyzed and read between the lines, show that the causes of labor turnover are those which have to do essentially (at least in times of comparative prosperity) with a faulty adjustment of the individual employe to his environment and to the suggestibility of the individual to outside influence or influence within the plant which disturbs his adjustment to things as they are. For example, the English commission, which investigated this problem in 1919, concluded that "The great majority have their root in certain psychological conditions." And not long ago, under the direction of the late Dr. Southard of Boston, the Engineering Foundation made an investigation of the causes of removal from payroll, and the following very significant reasons are reported:

- Did not like supervision.
- Refused to be transferred.
- Resented criticisms.
- Did not like working conditions.
- Work too hard.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

Agitator.
 Carelessness.
 Dishonesty.
 Drinking.
 Fighting.
 Indifference.
 Insubordination.
 Too slow.

It is apparent that all of the above causes are definitely related to some abnormality or disorder of the personality, and, hence, of the nervous system. If we stop to think a bit deeply about social and industrial life we cannot escape the conclusion that discontent, reduced production, unemployment and frequent labor turnover are essentially products of faulty adjustment to the environment on the part of individuals who are either constitutionally defective, psychopathic, psychoneurotic, or physically sick. The normal person will adapt himself to any conditions of employment or living so long as he is obliged to do so for his bread and butter, or so long as he is keenly interested in the work at hand, and will not "jump from the frying pan into the fire," but will patiently endure and deliberately plan to ameliorate his situation.

The economic and personal consequences of industrial discontent and maladaptability are only too apparent, and may be referred to in terms of WASTE. There is waste of time and energy on both sides; waste of materials; waste of human life or health due to accident and injury while training for a new job. Even when failure is not absolute in spite of faulty placement the worker is without hope of real success, is out of harmony with his surroundings and superiors, is filled with discontent and sullen resentment, and if he is ignorant or neuropathic he becomes the ready soil for the propaganda of agitators.

Hence, such problems as labor unrest and turnover are problems of personality, and much more attention needs to be paid to the individual worker as an organic unit by those who come in contact with him as medical advisers. This means that the physician or consultant of an industrial plant needs to have had a broad general training, much broader than that of the average physician or surgeon. Of course, physical injury or disease of special organs can play a part in causing a fatigued nervous system and a faulty adjustment to the environment, and no well-trained or experienced neuropsychiatrist can or would neglect to have all the general medical data before him when interviewing his patient—data obtained from the general medical service of the plant and to some degree from a careful examination by the neuropsychiatrist himself. It is a prevalent notion with both the laity and the general medical man that a neuropsychiatrist is neither interested or equipped to make a good physical examination or interpret one made by a colleague. I take issue with such an opinion. I have not found it to be so among the neuropsychiatrists I have worked with. On the contrary anyone trained in a modern psychiatric clinic or hospital knows that the method of physical and mental examination employed is much more thorough and orderly than

any method he has seen employed in a general medical clinic. The training of the man who becomes a neuropsychiatrist has been the same as that of the physician in his college and internehip period, and the very nature of the disorders, which he later on studies and attempts to deal with, so manifold in their symptoms and so full of possibilities as to their causation and so interwoven with every phase of human life, compels him to be on the lookout for all forms of physical disease; and more than this—puts him in a position to properly judge of the relationship of all the medical information at hand to the individual who is before him.

It happens, not infrequently, that a patient is sent to the neuropsychiatrist by the general medical man with a diagnosis of "neurasthenia" or "psychopathic state" or "hysteria," and the examination does not reveal signs or symptoms such as to permit of these diagnoses being verified. When the case does not run true to form, the neuropsychiatrist is either obliged to pass the patient back to his confrere or to make a thorough physical examination for his own satisfaction, and then properly evaluate the more typical nervous symptoms. For example, during the past two years the writer has been examiner in neuropsychiatry for the twelfth district of the Federal Board of Vocational Training of disabled soldiers of the late war. At least a hundred men have been sent to him because they were either considered unfit for training, or because they were not doing as well as the average in their studies or employment. Of this number about half have been found to have neurological or psychiatric disorders, which alone were responsible for their maladjustments. Of the other fifty per cent about half have been found to be infected with intestinal amœbæ with resulting toxæmia. The other twenty-five per cent have been about equally divided between tuberculosis and organic heart disease with resulting fatigue syndromes.

Neuropsychiatry may be said to be a specialty, but in the writer's opinion its most special character consists in its broadness and the fact that its practitioners are obliged to review the whole human organism. Other departments of medicine are given to analysis and the separation of the individual into organs and the treatment of an organ per se. Neuropsychiatry, on the other hand, is synthetic, and the neuropsychiatrist, after due consideration of special symptoms relative to special organs and organic functions, acts as a synthesist and considers the personality as a whole with all its physical and psychological faults of adjustment. And if the psychiatrist or general medical man is to do effective work in an industrial plant, he must consider things outside of the plant as well as those influences which are present within it and within the patient's body. For example, among other items he must consider the effect upon working-day behavior of insufficient sleep, food and play, and the disturbances of the emotional life due to home conditions, or those emotional disturbances due to past experiences of a painful nature and about which the patient has never before been encouraged to speak.

We do not always realize that the nervous system is the main spring of an efficient human organism. The world war should have impressed that upon us, and indeed it has done much to enhance the appreciation of neuropsychiatry as something more than a hopeless phase of the chronic and incurable ills of humanity. In the American Expeditionary forces the neuropsychiatrist was on duty from the front line to the port of embarkation, and of the large number of those soldiers acutely affected with war neurosis, sixty-five per cent were returned to active duty of some kind, either at the front or in the safer areas, within three weeks and without having to be sent more than thirty miles from the front line while hostilities were still going on. This was the result of a splendid organization of this work by Dr. Thomas Salmon. Now, we all know what war neurosis is, and most of us are familiar with traumatic neurosis as seen in industrial life, and we appreciate that both are the result of the same essential factors—namely, a conflict between the instinctive tendency to withdraw from danger or discomfort to seek safety or ease and the less primitive and, therefore, weaker tendency to stand by the social group and carry on with one's duties or burdens of life. And yet the results we are getting with traumatic neurosis in industrial life are deplorable! And this is because there is no well organized effort to diagnose it early and treat it early before the fixation of its symptoms.

In what definite ways, then, may the neuropsychiatrist be of sufficient service to justify his active or consultative service in the field of industrial medicine? At first thought many employers might be inclined to say that he is needed chiefly or only for the purpose of eliminating the unfit from the application office or payroll altogether. But while this is important in relation to criminally inclined defectives and beginning psychoses, it is not the main phase of his usefulness. It is much more important that the neuropsychiatrist help the employer of labor to retain his employes and fit them to the work they are best adapted to, to bring about a better understanding between employer or foreman and the employe, and to help the neurotic adapt himself to difficulties through a better self-understanding. Consequently, his larger field of usefulness will always be in dealing with border-line nervous and mental disorders and differentiating them from organic and unremediable conditions; in other words the neuropsychiatrist is needed chiefly as a counsellor and guide for handicapped personalities, and will be the last resort when others have failed to understand or adjust a peculiar individual. The various types of conditions which the neuropsychiatrist should handle in the industrial world may be summarized as follows:

1. The detection of the unemployable for any kind of permanent employment. This means the detection of extreme types of mental deficiency who are better off in an institution; the detection of the beginning phases of progressive dementia, e. g., dementia præcox; the recognition of the early signs of manic-depres-

sive psychosis and the differentiating of these from constitutional hypomanic or hypodepressive mental states which are not institutional cases and which can always be employed in some capacity and often have to have their type of work changed to keep them contented and efficient. Also the detection in the earlier stages of neuro-syphilis so that proper treatment may bring the patient back to normal efficiency.

2. The proper placement of those who, though handicapped by nervous or mental defects, can nevertheless be permanently employed, e. g., the placement of the feeble-minded at simple automatic tasks where the margin of safety is wide, and releasing thereby the more gifted for tasks more interesting to them. Also, the placement of those having special abilities or peculiarities in jobs that will satisfy their individual needs and talents, and thus keep them contented and productive.
3. The bringing about of a better understanding and, therefore, a better feeling on the part of foremen and employers toward peculiar individuals who have mental episodes of a temporary nature which, if borne with tactfully, do not greatly interfere with productiveness, making allowances for the type of temperament which requires frequent change or rest periods to combat the strain of monotony, and the treatment of such cases by psychological analysis and psychotherapy.
4. The early diagnosis and therapy of traumatic neurosis and the proper estimation of the relative part which trauma has played in bringing about a chronic nervous disease of organic nature.

In all of this work the aid of the laboratory psychologist and intelligence tester will be very valuable, but such a helper must work in conjunction and also in subordination to the neuropsychiatrist, because the latter's knowledge of the broad field of medicine and his own specialty is essential as a check upon the interpretations of the psychologist.

METHODS OF EXAMINATION

The most important part of the examination is the first and general interview held in a friendly, tactful manner, as informally as possible, and by the neuropsychiatrist alone. In this way the main features of the case and those requiring further investigation with the help of a psychologist, social worker and internist will be discovered by the interviewer and the program outlined for further investigation.

At the end of this interview a careful general physical and neurological examination would be made and necessary laboratory tests ordered, and at an early subsequent interview all other data obtained from sources outside of the immediate observation of the neuropsychiatrist would be assembled and correlated. By this method the neuropsychiatric patient, who more often than not is a very suggestible individual with a functional disorder, will look to only one doctor for advice and decision, and will not have his confidence impaired or his doubts and fears aggravated by com-

ing in contact with a variety of opinions and therapeutic measures.

Are there any difficulties in the way of using a neuropsychiatrist in an industrial plant?

The only difficulties are those which apply as well to the physical examination of applicants for employment or periodic physical examinations of employes. Such examinations are now a custom in many plants and have been found so valuable to the workers themselves that the original objections and suspicions aroused have been dispelled. Surely a neuro-mental examination is just as important as a purely physical survey to the worker as well as to the employer.

It should always be made clear that the examination is primarily for the benefit of the employe and not for the purpose of getting rid of him. Furthermore, the confidence revealed by the worker to the doctor who examines him should be held as sacred as those of a private patient, and he should be made to feel that the examination has been made for the purpose of helping him to find himself and to do his best work in the best possible situation that can be obtained for him—in brief, that the doctor is primarily interested in his welfare, is honestly trying to serve him and to bring about good feeling on his part toward his problems and his environment. In so doing the physician is doing the best for all that concerns the industrial plant.

Here follows an example of a method of making a routine examination of the mental condition, which should be used in full when a psychosis is present, and may be used only in parts where a border-line condition is involved.

Needless to say a very thorough physical survey should precede the mental examination and particular attention given to searching for organic nervous disease, chronic disease of the heart or lungs, acute or chronic infectious foci, the personal hygiene, home hygiene and the mental hygiene of the home environment. All this implies the aid of a tactful social worker and co-operation with other branches of medicine.

OUTLINE FOR THE ROUTINE EXAMINATION OF THE MENTAL STATUS

The Anamnesis:

(To be obtained from those likely to be best informed as to the patient's early life and antecedents.)

- (a) Family History: Should include that of two previous generations when possible, and the collateral relatives. Inquire not only as to actual insanity, but also as to eccentricities, epilepsy, alcoholism, drug addiction, criminality, feeble-mindedness, one-sided genius, functional nervous disorders, premature senility, and also the condition and the ages of parents when patient was conceived.
- (b) Personal History: (Previous to psychosis.) Diseases of infancy and childhood; injuries; early home environment, both economic and mental; changes of personality at puberty or later; schooling and progress in it. Also questions to bring out the general type of personality, the social instincts and capacities and special interests, with the degree of proficiency therein.
- (c) Onset of Psychosis: Apparent exciting causes; the first symptom noticed; the chronological development of symptoms

with detailed description of them sufficient to make them clear as to hallucinations, dangerous tendencies, etc. Give actual quotations of peculiar remarks or incidents. Avoid throughout the acceptance of the informant's interpretation of any of the above items.

MENTAL EXAMINATION

Appearance and Behavior:

- (a) Neat or negligent.
Calm, apathetic or indifferent.
Sad, anxious, fearful or shy.
Happy, exalted, silly.
Fully conscious or confused.
- (b) Slow or energetic in reactions.
Quiet or restless.
Reacting to hallucinations or illusions.
Distracted easily by environment, i. e., attentive or not.
Co-operative and responsive or evasive and repelling.
(Distinguish between true delirium and confusion or temporary hallucinosis.)
- (c) Any peculiar mannerisms or stereotype behavior or rapid alterations in behavior.
All of the above can be mentally and literally noted during the subsequent examinations and later recorded.

Spontaneous Talk:

Coherent or disjointed; affected by the distraction of things seen or heard; unduly influenced by association of ideas or by word and sound associations, i. e., "flighty." Note any absurdities in the use of words, note also general mental trend of ideas revealed, and any evidence of blocking of thought or of difficulty in concentrated and sustained thinking, i. e., mental fatigue. Note any evidence of aphasia. What is revealed during the spontaneous conversation will serve in part for the basis of specific questions later.

Mental Attitude: (To be determined by specific questions.)

- (a) Trend of ideas.
Inquire tactfully into personal affairs and interests, going into early history to bring out evidence as to the type of personality and note any change that has occurred therein. Note the nature of any special conflicts with the environment in the past or recently, and determine whether on the basis of faulty adjustment to average difficulties or unusual situations, or whether due to misinterpretations and definite delusions, based on the habits of thought the patient has acquired.
Determine what influence hallucinations or illusions of the senses or physical conditions and subjective symptoms may have had in distorting the patient's logical faculty or bringing about conflicts or giving rise to definite delusions. Note the influence of the present environment on the replies.
Note any evidence of falling away in efficiency or habits, and determine the source of this, whether psychic or physiological.
- (b) Emotional tone:
Is the emotional reaction to the present condition and to past difficulties of normal type?
Or is it inadequate or excessive? If depressed and pessimistic for what reasons—for instance, sense of inadequacy, self-reproach or poor judgment of the situation? Is the mood superficial, inconsistent, exalted, vindictive or litigious?
N. B.—Inquire in all cases into the sex life to determine whether it is naturally or unhealthfully and imperfectly satisfied, that is

to say, whether there is either physical or psychic sex tension, unrelieved and unexpressed.

- (c) Insight and judgment:
Has the patient any degree of correct appreciation of his difficulties? Is he open to argument or blindly prejudiced? Aware of the nature of his trouble?
What are the present and future plans? Are they absurd or reasonable? Are they consistent with past experience and capacities, and present condition.

Orientation and Memory:

- (a) Orientation: Appreciation of present and most recent events; present date and location; nature of the interview; note any tendency to fabrication.
- (b) Memory for recent events: Deal with those occurring within the past few days or past year, for instance, current news, account of activities during the past twenty-four hours or longer.
- (c) Memory for remote affairs: This should include the grasp on general and school knowledge and personal data, for instance, dates of marriage, births of relatives and other domestic events.
- (d) Special tests for the retentive faculties:
(Be careful to distinguish between disorder of the attention and failure of retention).
- (1) Recalling of names (after one minute and day later).
 - (2) Repetition of numbers (up to those of seven digits).
 - (3) Reproduction of short story or news items told or read. (Immediately and twenty-four hours later.)

Special Intelligence Tests:*

These are to be used when feeble-mindedness or organic brain disease is suspected.

- (a) The Binet-Simon Scale g. v.
- (b) Healy's modification of Binet-Simon Scale g. v.
(Psychological Monograph No. 54. Princeton, March, 1911.
- (c) Ziehen's tests (of value in all ages above six years for determining special defects, for instance, in retention, abstraction, generalization, definition, differentiation, exemplification and combinative activity. g. v. (Berlin, Karger, 1909). Terman's "Measurement of Intelligence" (Stanford Revision of Binet-Simon test).

Diagnostic Summary:

This should include the physical and neurological findings first of all. Then in order of development mention the striking facts relative to symptoms of mental disorder as shown by the anamnesis, their duration and progression. Then note the positive mental findings under the various headings of the mental examination, and in the order given.

* See also: Franz' "Handbook of Mental Examination Methods." Jour. Nervous and Mental Disease, Mon. No. 10, 1912.

See also: Hoch & Amsdan, "A Guide to the Descriptive Study of Personality," in Review of Neurology and Psychiatry, Nov., 1913.

POST-TRAUMATIC NEUROSES: THEIR MECHANISM*

By JOSEPH CATTON, M. D., San Francisco, Cal.
From the Department of Neurology and Psychiatry of Stanford University Medical School.

Following physical trauma, patients may present mental and nervous symptoms and signs, which in the present stage of our knowledge of neurological localization, cannot be definitely related to any specific portion of the nervous system. In ex-

planation of the basic mechanism of these disturbances, three schools of thought have developed. The first holds that there is a definite organic basis for the phenomena; the second that the disease pictures rest on a psychogenic and non-organic basis; and the third school is made up of investigators who have varying opinions including organic and psychogenic features.

Since the time of "railway spine," medical men have tended to place themselves either in the organic or psychogenic school rather than taking the less final, less extreme position, which admits of the operation of both sets of factors.

With the advent of war, its shell explosions, burials and other physical traumata; and with the coming of compensation for industrial injuries; the two diametrically opposed schools have found expression in different forms of treatment for the neuroses in the military, and in the handling of the so-called post-traumatic neuroses following industrial accidents. When identical symptoms have meant to one observer a psychogenic condition and to another an organic syndrome, and when neither observer will admit the position of the other as tenable, then military efficiency must have suffered by the therapy of one school or the other. Similarly if Dr. A reports that a given set of symptoms following a head injury received in industry, rests on a psychogenic basis and should be terminated at once with cash settlement; and Dr. B finds that an identical case rests on an organic basis and calls for prolonged treatment and compensation; and if a Commission carries out the respective recommendations of Drs. A and B, then a grave error has been made in one case or the other.

There should be a more clear definition of traumatic neuroses. It is because of the lack of such definition that there is marked difference of opinion as to the frequency of these conditions both in war and peace. While it would be more scientific to consider these neuroses in a restricted sense, nevertheless it is more practical to consider these conditions in an inclusive sense, the sense of more common usage. However one must not make the extreme use of the term which is inaccurate, unscientific and useless and which would include even such gross organic conditions as psychoses, cerebrospinal syphilis and other conditions, which have not been recognized, and the symptoms of which have simulated neurosis pictures. It would seem that the average medical man would consider the following to define a post-traumatic neurosis: The term, post-traumatic neurosis, traumatic neurosis or traumatized neurosis, is applied to conditions manifested by certain psychasthenic, neurasthenic, hypochondriacal and hysteric phenomena, either alone, or in any combination—which phenomena appear to be the results of physical trauma—and accompanying which one is unable to demonstrate the clinical signs of known organic neurological disease. It is with this set of conditions that this communication concerns itself.

Given then, such a picture, what is its basic mechanism? The first step in any case should be an exhaustive investigation for organic findings. The laboratory and the specialties should reinforce

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

complete routine examinations. More commonly than might be supposed, slight signs of psychoses, cerebrospinal pathologies of various sorts, and other neurological conditions escape notice, and a case is wrongly termed a traumatic neurosis, because the symptoms commonly assigned to the latter are in the ascendancy.

THE PSYCHOGENIC MECHANISM

No signs of organic localization having been found, let the psychological phase of the case be considered. In the war studies were made of this aspect of individual cases, and of the whole subject of neuroses as well. The majority of observers seem, as a result of these studies to incline to the view that the neuroses are psychogenic in origin. It was demonstrated how in the wake of battle, and in the presence of exposure, exhaustion and the rest, instinctive processes related to self-preservation were set in motion, and how were developed the sub-conscious strata on which various neurotic pictures developed to the end that the soldier found himself removed from the field of battle. It was shown how responsibilities, and ethical standards and various psychological phenomena determined that officers developed neuroses more often than their men; that prisoners exposed to the same shell fire as troops, developed neuroses with much less incidence; that great injuries to the nervous system were not accompanied by these pictures; that the neurotic conditions attributed by some to the physical traumata of war, were in fact no different in appearance nor in mechanism than those of non-traumatic nature, seen in peace; how the preponderating number of such cases could be cured very quickly by psychotherapy. Further it was pointed out that many men were exposed equally to shell concussion and that only certain of them developed the symptoms; it has been reported that in a group exposed to shell fire sleeping soldiers escaped while those in the waking state became victims of neuroses. There were more cases developed in the hospitals farther from the front and nearer to the home.

Likewise the exclusively psychic nature of these cases has been advanced in civilian life by the study of similar psychological processes to those mentioned as accruing in war; the unconscious tendency to escape disagreeable situations; the ideas developing around compensation for industrial accidents and suits for damage for personal injury; these and other factors have been found a part of a basic psychological mechanism. Numerous observers report that their experiences have demonstrated that settlement on a cash basis, with closure of the case, has actually terminated the traumatic neurosis picture. (Bailey, Boon, Diller, Dercum, Dye, Morselli, Naegeli, et al.) Attention has been directed to the frequency of head injuries in football players and the infrequency of the subsequent development of traumatic neuroses in these persons. Someone has stated that following railroad wrecks, the neuroses develop in the litigation type of passengers and not in the crew.

THE ORGANIC MECHANISM

These exclusively psychogenic factors are not sufficient explanation according to the organic school. They state that definite damage to the

central nervous system may follow physical trauma and that there may be no signs of external injury, nor signs of localizable organic neurological pathology. They state that cases exposed to shell concussion may develop both frank organic neurological pictures, with or without so-called neurotic pictures without localizable neurological findings. Those cases which have died, and death has occurred repeatedly without evidences of external physical injury, have shown nervous system pathology. Macroscopically there have been small hemorrhages scattered throughout the central nervous system: brain substance, meninges, medulla, and spinal cord have shared in the distribution; frank hematomyelias have been found. Microscopically there has been degeneration of certain brain and cord cells; the Purkinje cells of the cerebellum have shown a disappearance of Nissl bodies and a tendency to take acid rather than basic stains; and certain cells, *e. g.*, those of the vagus-accessory group tend to show changes in a more marked degree. During the period of clinical activity these concussed cases have at times shown changes in spinal fluid, namely increased pressure, increase in albumin and lymphocytes, and presence of blood. Retinal hemorrhages have been seen with the ophthalmoscope. The distance men have been blown, the rupture of the ear drum, the damage of middle and inner ear structures, which have resulted from shell explosions are mentioned to show that the transmission of so great a pressure through the spinal fluid would account for the changes seen post mortem. These evidences of the effects on the nervous system of concussion by air, would indicate far greater effects from physical trauma of solid objects both in war and peace. One observer of 74 men suffering as the result of shell concussion, reports that in the first 24 hours, 67 showed localizable organic neurological lesions; later the signs disappeared; if all the neurosis cases were given early thorough observation it would seem that similar findings would be present. Cases of organic paralyses have followed concussion and subsequently cleared up. It is well known that lightning or electric shocks may cause neurological pathology or even death and yet the pathology in certain of these cases has not been determined with any more definiteness than has that of the neuroses. Various experimental observations would support the idea that physical trauma without external signs of injury may cause organic neurological changes. Rabbits have died as the result of shell concussion and postmortem has shown hemorrhage into the spinal cord and nerve roots and rupture of blood vessels in the cortical gray matter. Foci of degeneration in the spinal cord and changes in the axis cylinders have been found. Rabbits placed in a centrifuge and spun, have shown, postmortem, small hemorrhages into the central nervous system.

THE ORGANO-PSYCHOGENIC MECHANISM

The investigators who place themselves in a third school are interested in the possible roles of both factors. They listen with interest to the definite stands taken by the organic and psychogenic thinkers as outlined above. They hear the arguments when the members of these schools talk over their

respective viewpoints. The psychogenic school states that there has been no demonstrated pathology for commotion or concussion. They are answered by the statement of fact that the pathology of cerebral hemiplegia has not always been known; that years of research have been necessary to give today's knowledge of neurological localization; and attention is directed to the removal of great masses of symptomatology formerly though hysterical, from that class, by Babinski and others; and these data together with the organic changes found to have resulted from concussion by Mott and others, are sufficient, they state, to indicate that the definite organic basis will be demonstrated in due time. (The organic school say, consider how little is known today of neurological localization, when one thinks of the so-called "silent" brain areas and the sympathetic nervous system.)

The psychogenic school invite attention to the fact that persons of psychoneurotic disposition are more likely to develop neuroses, and that given the same concussion only certain persons, therefore, develop the neurotic pictures, *e. g.*, in shell explosion cases. The organic group denies that concussion from a given shell explosion could possibly act through the same lines of force on different individuals and further states that individuals themselves will have been in different positions at the time of the explosion, *e. g.*, prone, erect or sitting.

Babinski shows certain of the difficulties connected with these considerations when he says, "How is it possible to find the true cause of nervous symptoms, when their appearance is the same whether they are organic or functional." For such has appeared to be the case, *e. g.*, following head injury. The patient may present headache, vertigo, insomnia, irritability, memory defects, asthenia, etc., when there is gross organic pathology; when in the absence of localizing neurological signs, the psychogenic school would call the case functional; and again when in fact, no disease process whatever existed and the patient was simulating. As Cushing has said in effect, since cerebral injury can produce these symptoms, and since lack of ability to localize pathology doesn't mean there is no damage, how can it be arbitrarily stated that there is no organic basis? The organic school denies flatly that all cases presenting symptoms and signs that would lead to a diagnosis of traumatic neurosis, are amenable to psychotherapy and rapid cure: Attention is directed to the fact that even staunch members of the psychogenic group, must mention in their own writings, cases in which treatment has been necessary over long periods; statements are made that after hysterical elements have been disposed of, neurasthenic ones may persist indefinitely; while some cases may be settled with a bonus or flat sum, others require prolonged care; some patients are unable ever to return to their former occupations. Further without careful checking up it cannot be said with a finality that the "cash sum settled" industrial case has in reality lost all of his symptoms.

Those who attack the subject from the psychological angle are enabled through their questions

and answers, word associations, psychogalvanic reactions, hypnotism and psychoanalysis, to develop a more basic psychological mechanism for the neuroses, than that which is immediately apparent; they are enabled to interpret the symptomatology in the light of certain conscious and subconscious phenomena. They have simplified the psychological picture; have they, however, touched the basic pathogenesis? Is there not a pathological anatomy and physiology at the basis of the demonstrated pathological psychology? Even if there were no evidence of macroscopical or microscopical pathology, is it not probable that there is biochemical or other abnormal state? No one would declare that the acute intoxication of alcohol or of morphine rested on a psychogenic basis and yet the basic pathology of these intoxications need not be more gross than that of the neuroses. Fatigue, exposure, lack of food, overexertion, infection, all of these are recognized by the psychogenic proponent as contributing factors to the development of a neurosis. These factors are known to produce metabolic, vascular, endocrine and other disturbances, and certain biochemical changes of which we will know more and more as time goes on. Crile and others have taken a further step and described microscopical and staining alterations in various organic cells as the result of the action of similar etiological factors. If a physical concussion can, without signs of external violence, produce the gross changes in the central nervous system described by Mott and others, it seems reasonable to suppose that the changes of biochemical nature would be even more likely to be present. And, on the other hand, psychological factors can disturb more than psychological equilibrium; the work of Cannon and others has shown that fear and other emotions may indeed cause pathological change. The nausea induced in man at the sight of a horrible object, or the changing of his mood from a grouch to joy by a hearty meal, gives one much to think about as regards the relations of the organic and the so-called psychological.

The consideration of traumatic neuroses naturally carries one back to fundamentals; it necessitates a consideration of the relation of mind and brain, which naturally is not within the province of this paper. It would seem that in the last analysis one's attitude concerning these neuroses would depend on the following: If one can conceive a mind as apart from brain, then he may conceive a psychogenic neurosis in absolute independence of macroscopic, microscopic or biochemical change in the nervous system. If he sees in mental processes the expression of brain processes then he must necessarily join in the research which would find a basic organic change for the neuroses. Can the psychogenic student deny that hysteria may be due to a physico-chemical change capable of prompt return to normal? One should remember with Lugaro that "The examination of the hysterical person has so far been almost exclusively limited to the psychic and nervous manifestations, which veil the true disease under a mask of symptoms; and beneath this perhaps a more definite substratum of organic alteration, than is generally imagined may

lie hidden." Much has been written of vascular disequilibrium, and of endocrine disturbances, and others as a basis of neuroses. This would seem to be a fertile field for study. It has been possible in a series of cases at the Stanford clinics to demonstrate that while through the usual psychological modes of attack, interesting and more simple psychogenic mechanisms were developed, nevertheless it was only necessary to continue examinations along other lines to find that at the basis of the psychological pathology there appeared to be a definite endocrine dysfunction, and other morbid condition.

The practical side of a communication of this sort would be a consideration of certain of the data looking towards more uniformity in medical opinion, and certain of lines of future investigation.

Experience at the Stanford Clinics would seem to indicate that had more than perfunctory examination been made in many of the supposedly psychogenic disorders, certain physical pathology would have been found. How seldom, with the reports of cases treated and "cured" by psychotherapeutic means, has there been a report of the complete physical status? When the psychoanalyst has found a disturbed sexual psychology in the conscious or less conscious realms, as the basis for certain symptoms, he may need only go a step further and find thyroid or ovarian dystrophy or some other very definite pathology as the probable cause.

Differential symptomatology should be worked out as between the frank and less frank organic conditions, the latter of which have been termed functional.

Surveys should be made of the after-histories of accident cases thought to have been settled by the "lump sum closure method."

Early complete examinations should be made in order to detect localizing organic signs which may later disappear.

Experimental work on animals should be continued as regards injuries to the nervous system following physical trauma with or without external evidences of injury.

It has been the aim of this paper to be expository of attitudes rather than argumentative for one or another school. It has been read in the hope that the discussion may indicate lines of investigation which might lead to greater understanding among physicians as to the roles of organic and psychological factors and their interrelations.

CLINICAL EXPERIENCE AS TO THE SEVERAL KINDS OF PHYSIOTHERAPY EMPLOYED IN RECONSTRUCTION WORK *

[From the Orthopedic Department of the University of California Medical School]

By JAMES T. WATKINS, M. D., San Francisco

A witty Irishman once remarked to the writer that all surgery could be described in three words—"You find a thing and you cut it or tie it. Now, medicine," he continued, "is a much more difficult subject. It takes four words to describe all medicine. You dilate, you contract, you

modify nutrition." Now, without pausing to argue with our internal medicine friends, whether by means of their *materia medica* they can do *more* than dilate, contract and modify nutrition, we can assert with considerable certainty that this is a very fair definition of the fundamental workings of physiotherapy. By it, beyond a question of a doubt, you can dilate, you can contract, and you can modify nutrition. Or, to put it differently, you may say by physiotherapy you can stimulate, you can soothe, and you can augment metabolism.

We, as industrial surgeons, are interested in physiotherapy in its application toward improving the function of the motor apparatus. Now, function is essential to the well-being of our organs of locomotion; when for any reason they are put out of commission they suffer in all their parts—bones become demineralized, muscles atrophy, the venous and lymphatic systems become turgid, motor nerves lose in part their power of transmitting definite selective motor impulses.

But, in order to permit reparative processes to proceed, or at times because of actual damage to some factor essential to locomotion (and under this heading I would include the upper as well as the lower extremities and the supporting structures of the trunk), it happens that function has to be excluded.

Now, the purpose of physiotherapy is to maintain as nearly as possible that state of being in a disabled part which would be normally brought about by function, and later, after the immediate repair of injury, to restore lost function.

Physiotherapy, in one form or another, was employed by the ancients; witness *Thermae* of the Greeks, and even savages, who had not yet entered into that higher stage of social evolution which we designate barbarism, employ it; such, for example, were the massage methods of the Maories of New Zealand, and the hot sweats and contrast baths of the North American Indian. But among ourselves, while not unknown, it did not come into its own until the reconstruction problems of the war forced upon us its more general recognition. One reason for this delayed recognition lay in the fact that most of those among us who practiced it were persons too imperfectly educated in critical medicine to be able to differentiate pathological processes, or to record physical findings, had they been minded to make them—which, incidentally, they were not. Often they were honest enough, but possessed of that mystical order of mind typified in Wilde's character, who exclaimed, "I can believe anything so long as it is incredible."

Fortunately, for industrial surgery, the war sent practically the whole medical profession into the army, and concentrated the best medical thought of the age upon the problem of the reconstruction of the crippled soldier. Only then did the great value of treatment by physical means receive general recognition. And now, in the third year after the war, when no doctor's office seems complete without its therapeutic aid, one begins to wonder has not the pendulum swung back too far—are we not in danger of asking too much of physiotherapy?

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

In saying this I would not for an instant be classed with that group of congenital reactionaries who will have none of it, because physiotherapy is not yet upon what they are pleased to term a "scientific footing." According to these intellectual negations, physiotherapy is in the same stage of development that obtained with the poly drug therapy of fifty years ago. When it attains to the scientific accuracy of the mono-drug therapy of today, should it ever do so, then they will embrace it.

Now, all this reasoning is defective on two separate counts. First, the really efficient drug therapy is *specific*—clinically, we know that it acts on a given diseased tissue in a certain way, but we do not know *why* nor *how* it acts.

Aconite would appear to be a specific for simple inflammations of the pharynx, the metal antimony a specific for simple catarrhal inflammations of the larynx, which is two inches away, and ipecac, a specific for simple catarrhal inflammations of the bronchi, which are two inches lower down still. Mercury is a specific for a special type of small, round cell degenerative inflammation, which we designate as gumma. But *how* or *why* these specifics act as they do, *where* they do we *simply do not know*. On the other hand, I can say with equal certainty that a hot pack followed by appropriate massage is just as much a specific for a lame back, consequent upon excessive muscular effort, as is the best of them for its special disorder. And I can put forward a much more likely hypothesis—a much more nearly scientific reason, in other words—as to why and how it accomplishes its result.

Second. Scientific knowledge is, as a rule, not the result of pure reason—the outcome of an intellectual tour de force. It does not spring like Minerva, fully armed from the head of Jove. On the contrary, oftener than not, objective phenomena are accurately observed, and then by deduction the fundamental laws which activate them are uncovered. Sir Isaac Newton achieved immortality by defining the mighty laws of gravitation; but, if we are to accept tradition, what started him thinking was the humble, objective, clinical observation of an apple falling out of a tree.

Physiotherapy is a treatment department only. Its sphere of action is to supplement the technic of the surgeon, the materia medica of the physician, the appliances of the orthopedist. It is the applied physics of the healing art, and includes massage, manipulation, curative exercises, hydrothermo-photo-electro and mechano-therapy, and occupational therapy. And each separate type when differently administered may produce opposite effects.

It is not enough to prescribe electricity, for example, or even a type of electricity, such as galvanism or diathermy. Its intelligent prescription implies a knowledge of the indicated volume or amperage under what pressure or voltage for what period of time as applied to each individual case—and along with it a clear-cut note recording what it is intended to do, and frequent comments in the case history as to whether or not the anticipated result is being accomplished.

In entering upon a discussion of physiotherapy as it is applied to industrial surgery, we must recognize at the outset, *first*, that thus far we use only a few of the remedial measures which can properly be included under this grouping, and *secondly*, that we possess very little knowledge of the *actual* workings of those few measures that we do use.

It is fairly certain that at times some of them we misuse, a fact which is equally true of drug therapy. The future of physiotherapy lies in the care with which we watch our cases, the accuracy with which we record our results, both good and bad, the thoroughness with which we divest our minds of prejudice—either pro or con.

I am sure you will appreciate that in the few minutes allotted to any one paper by the program committee, there is time only for the briefest possible review of what we believe to be the facts regarding the more generally employed physical therapeutic agents. Did I attempt more, our tyrannical chairman would stop me.

And First of Massage.—Generally administered massage, probably through its influence on the vaso-motor apparatus, causes a dilatation of the blood vessels, certainly near the surface and possibly deeper in the body, thereby taking a load off the heart. It empties waste products of metabolism into the general circulation, and thereby augments their elimination through the organs of excretion.

It very greatly diminishes the excitability of the end of corpuscles of superficial sensation.

Locally, massage empties the venous and lymphatic circulations, stimulates skin elimination, and empties the ducts of the skin glands, supports local metabolism, loosens adhesions and the products of inflammation.

Manipulation.—This potentially dangerous but useful modality (passive movements) should be employed with extraordinary care to prevent muscle shrinkage from constant relaxation, to prevent the organization into fibrous structures of inflammatory infiltration into the tissues and to overcome limitation of motion at a joint when caused by these conditions.

Passive movements should *not* be employed before union had been established in the long bones or in such a way as to disturb the relations of fragments of bone in the neighborhood of joints.

When the limitation of motion is present in a joint of a traumatized limb, forced passive movements, cautiously graded, may be employed to overcome the functional defect. Here it should be noted that when swelling, induced by manipulation, persists for more than twenty-four hours, the limb should be given further rest, and when manipulations are resumed they should be milder in character than those previously resorted to.

Hydrotherapy.—Hydrotherapy may be used in a variety of ways. 1. In instituting a weak motion. We know Archimedes law that when submerged a body loses weight corresponding with the weight of the volume of water it displaces. Naturally, motions can be carried out under such conditions through a much less expenditure of effort than would otherwise be the case.

When submerged the limb is subjected to the surface pressure of water, which is estimated at 62½ pounds to the square inch, whereas at the sea level atmospheric pressure is but fifteen pounds to the square inch.

Cold limbs previously submerged in water at a temperature of 95 to 102 degrees Fahrenheit for twenty minutes, sustain a dilatation of their capillaries, which obtains for several hours and must aid in improving the nutrition of the parts.

Generally speaking, the action of hydrotherapy may be either stimulating or soothing; because it offers the best means of applying, in an absolutely controlled dosage, heat and cold to the body surface. It may be sedative when employed in the so-called sedative pool bath, which may, in neurasthenics, be protracted for hours and combined with massage and passive movements. Or, it may be employed in the form of the whirlpool bath to parts too sensitive for massage. Here it combines heat and a form of very gentle frictional massage. It exerts an admirable influence upon sluggish wounds, and often prepares the way for more formal massage treatments.

Thermotherapy.—Heat is either convective, conductive, or conversive.

Convective Heat.—It is contended by some writers that radiant light and heat has advantages over simple convective heat, in that light penetrates into the tissues much further than simple heat, and is there transformed into heat, as is all arrested energy.

This may be so, particularly when the quartz lamp is used, but in our experience at the Hahnemann Hospital, moist heat in the form of the hot pack, as a preliminary to massage or to relieve pain following manipulation, has been unquestionably more efficacious.

Because opinions on this point differ, a critical study of results by a series of observers will have to be made before a definite conclusion can be come at.

Conductive Heat.—E. g., by hot water bottles, etc., has little or no place in physiotherapy.

Conversive Heat.—Conversive heat may be generated in the tissues themselves by the passage through them of a relatively large volume of current (amperage) under low pressure or intensity, that is voltage, obtained from the primary windings of a Tesla transformer in a high frequency machine. Heat so generated is known to us as the direct d'Arsonval current or diathermy or thermal infiltration or thermal penetration. They all mean the same thing.

It is a law of physics that energy opposed is converted into heat. So when this current of large volume low-pressure electricity is passed through anything, it naturally generates heat in proportion as it encounters resistance in passing from one electrode to the other; and, while the amount of current is absolutely under the control of the operator, the greatest heat is generated at the site where the current encounters the most resistance. Therefore, more heat is developed in bone callus or dense adhesions than in the soft parts of a limb. Properly used it is painless except in the presence of a foreign body in the tissue or a corroded spark gap.

Electrotherapy.—In physiotherapy the effects of electricity may be said to be chemical, mechanical, thermal and electronic. The galvanic current or galvanism, is a direct continuous current, the effects of which are chemical, the negative pole which most interests us is stimulant, attracts hydrogen, and is, therefore, alkaline in reaction, is a vaso-dilator. The positive pole is the reverse of the negative pole. In industrial surgery, galvanism is best used to soften scars by forcing the chlorine ion of sodium chloride into the tissues. The slow galvanic sinusoidal current is employed to cause muscle stimulation after paralysis. It is simply a galvanic current mechanically made into a wave form.

While the galvanic current obtains chemical effects, the static and induced currents exert their influence mechanically. They cause a muscle to contract, and thus mechanically can exert a therapeutic effect.

High Frequency Currents.—To understand the physics of high frequency currents, one writer (Sampson) uses the following simile: Imagine a stream of water six inches in diameter, with a thousand pounds to the inch pressure. This would correspond to a high amperage, high voltage electrical current.

Such a stream of water would kill a man instantly, or tear great holes in rocky mountainsides. But if such a stream of water could be put through a nebulizer so as to be converted into a fine mist that would float in the air, it could be used to moisten the most delicate flowers.

In like manner a high amperage high voltage electrical current, many times greater than sufficient to kill, when passed through a high frequency apparatus can be made safe for human beings, and can be employed with beneficent results.

I imagine this is a fairly good simile. I know that in my own experience, a high frequency machine, which had been employed for years without mishap, sustained a breakdown of the insulation between the primary and secondary of the transformer, with the result that when there was an accidental contact made with one of the binding posts, the operator was instantly electrocuted.

With regard to its indications, I have repeatedly been surprised at the way in which indefinite pains about joints cleared up under "high frequency."

Ultra Violet Ray.—The ultra violet ray we know less about still. We have seen it abate superficial infective processes, like carbuncles, and apparently cure neuritis.

Static.—Static is said to do the same thing for sciatics. I have no personal experience of it, however.

Mechano-therapy.—A Swede named Zander, first devised a system of resistance apparatus designed to afford resistance exercises for all possible motions of the extremities and trunk. Herz, of Berlin, produced a refinement of the Zander group by determining the power curve of each muscle group, and making his resistance force follow this curve. That is your resistance, weak at the beginning of a motion, gradually increased to the point where maximum force could be exerted

in a given motion, and then diminished again as the power itself decreased.

The advantage of these types of mechano-therapeutic apparatus lies in the fact that the dose, so to speak, can be accurately prescribed, and is constant. Resistance exercises administered by an individual vary with the momentary physical condition of the person giving them.

Another type of apparatus is the Kruckenberg pendulum group. Here a limb is strapped to the apparatus in such a way that the axis of joint motion is identical with the axis of a weighted pendulum. When the latter is set in motion it carries the limb with it, thereby gradually increasing its arc of motion.

I worked a good deal with these several types of apparatus during my student-years in Europe. They are expensive, get easily out of order, and the work with them soon becomes monotonous to both patient and director.

And now, when I have scarcely touched on one part of my subject, and upon the rest of it not at all, my time is already over-stepped.

In closing, I would leave with you this thought, which not only includes the gist of my argument, but was the real reason for my writing this paper.

To no man, who seeks it humbly, is the truth ever wholly hid. And so, if we observe and record, without prejudice and without favor, our experiences in physiotherapy, in time from the mass of our clinical findings, the real principles of physical treatment, its indications and its limitations will become progressively clearer to us, till, from the anxious or credulous empiricism of the past shall emerge the exact science of tomorrow.

909 Hyde Street.

FRACTURED FEMURS *

By C. E. EARLY, M. D., Los Angeles

The literature regarding fractured femurs is very extensive. Nevertheless, the review of certain basic principles, especially in their application to industrial surgery, will perhaps not be amiss, especially when one remembers that the treatment of a fractured femur is one of the MAJOR PROBLEMS OF SURGERY.

From a purely statistical viewpoint, how much more serious than many other surgical conditions is the fractured femur. A simple appendectomy heals in seven to ten days, a suppurative one in six to ten weeks; a cholecystectomy is cured in six weeks, or, if drained, in ten to twelve weeks at the utmost; intestinal anastomosis, or gastro-enteric-anastomosis are restored to function in three to six weeks, while a well-treated fractured femur requires six months before the patient may resume his occupation.

As Sir Robert Jones has said that "Fractured femurs were the great calamity of the war." They are also the great problem of industrial warfare.

Fractures of the femur can be classified in two general ways:

1. According to the extent of the lesion, as (a) Simple or (b) Compound.

* Read before the Fiftieth Annual Meeting of the Medical Society of the State of California, Coronado, May, 1921.

2. Anatomically as (a) of the upper third; (b) of the middle third; (c) of the lower third.

Certain essential objectives must be kept in view in the treatment of all of them. Briefly stated, they are:

1. The attainment of complete reduction, if possible.

2. Firm, bony union.

3. Keeping the correct relations of the anterior planes of the upper and lower fragments.

4. The prevention of shortening (a good result, according to the report of the Fracture Committee of the American Surgical Committee, should show no shortening of over one-eighth to one inch).

5. Prevention of lameness, due to knee stiffness or shortening.

6. The restoration of the patient to efficiency as a workman, in the minimum time commensurable with proper union. This can seldom be attained in less than six months.

As basic principles of treatment, to gain these results, the following two rules should be axiomatic:

1. The distal fragment is the mobile one and must, by one method or the other, be brought into axial relationship with the proximal fragment and maintained there.

2. The limb must be put into the posture of neutral muscle pull. There will then be less tendency to displacement.

Two other fundamental principles that are of tremendous importance should be recognized:

1. Frequent X-ray examination should be the rule. Fragments slip, traction is not sufficient; mal-formation is the result. The X-ray will readily demonstrate such a defect.

2. Whenever a fracture is put up in traction, such as obtained by a Thomas splint, daily inspection of the conditions present should be made. The mere application of a traction apparatus is only the beginning of the treatment. The painstaking subsequent after-care of these fractures is the only sure way of obtaining proper results.

At all times the surgeon should familiarize himself with the anatomy of the region involved in the fracture, and the various forces acting upon the fragment, and be ready to adapt new principles to bring about results. Certain definite facts are common to the treatment of each region, and it is from this viewpoint that the treatment of the individual fractures will be considered. This will explain certain apparent omissions of methods that have been effectual with other workers.

First-Aid Treatment:—The treatment should be begun as soon as possible after the injury. Proper emergency care means the prevention of deformity and bleeding into the muscles and fascial planes, with subsequent hematoma, myositis, or nerve injury. This is best effected by the early use of the Thomas splint, that is, prior to any attempt at transportation of the injured individual.

The splint should be applied over the clothing and immediate traction begun. This can be effected by one of two methods:

(a) By splitting laterally through the uppers

of the shoes at their junction with the sole, and then passing a bar of metal or wood transversely under the arch of the foot, through the shoe. This bar should rest upon the side pieces of the Thomas splint; to it, on each side, should be attached extension strips running to the V-shaped end of the Thomas splint and tied there. A posterior splint of some sort should then be applied and the whole limb bandaged from the ankle to the groin. The splint should be suspended so that the heel does not rest upon the stretcher.

(b) A second, but inferior, method of obtaining extension is by the use of a rope tied in a clove-hitch over the foot, with the Spanish windlass form of traction.

A number of special emergency extension devices have been invented, but, as a rule, these are not available at the time of fracture. We have found an Esmarch's tourniquet to be satisfactory. A piece of inner tubing from an auto tire will answer the purpose.

Hospitalization:—All cases of fracture should be placed in hospitals for treatment, as their care requires frequent examinations, adjustments and Roentgen pictures, which cannot be obtained at home. An X-ray examination should be made immediately in every case, both before and after the splint is applied. This will give the immediate pathology and aid in obtaining proper alignment of the fractured ends.

FRACTURES OF THE UPPER THIRD OF THE FEMUR

Of the Neck: Of the Intertrochanteric Type—These types of fractures can readily be developed into those of (a) the aged, or asthenic variety, and, (b) the adult or thenic variety. In industrial surgery, the former types are rare and we shall not discuss them here. The latter type can be properly managed by either the Whitman abduction method or the combination of the Cotton with the Whitman method. If impacted and not in proper position (remembering that we are dealing with the industrial type of case) the impaction should be broken up. This is best effected under anaesthesia, the patient being placed upon a Hawley or Albee table.

Stated briefly, the various steps in the Whitman method are the following:

1. Traction and extreme abduction of the leg.
2. Rotation of the leg inward, bringing the trochanter forward.
3. The elevation of the trochanter by pressure from behind.
4. The application of a plaster spica extending from the toes to the nipple line, the leg being held slightly inverted and strongly abducted. A "dinner pad" should be put over the stomach, and smaller pads, to prevent pressure, should be placed over the anterior-superior spines, the sacroiliac joints, the trochanters, the femoral condyles, and the malleoli.

The Cotton method simply adds to this the impaction of the lower fragment in proper position into the upper.

It might be well to mention here that we have found the Thomas splint is inefficient in this type of case, insofar as it is impossible to maintain proper abduction. As a rule, the patient slips

over in bed and lines the pelvis up with the abducted leg, entirely vitiating the attempt at abduction. This difficulty can be overcome by using two Thomas splints, one on each leg, thus preventing pelvic tilting, or by the use of the Crile modification of the splint, consisting of the addition of a pelvic band which prevents pelvic movement. This method is utilized in Canada and Great Britain, but the splint is difficult to obtain in this country. The Whitman method gives by far the best results, however, and as it is so simple of application, is probably the best method of treatment of this type of case.

Fractures of the Greater Trochanter—These are best treated by abduction and flexion of the thigh. If the fragments are widely separated, open operation should be instituted and the fragments held in place by some form of bone fixation, the autogenous bone peg being most effective and scientific.

Fractures of the Lesser Trochanter—These should be treated in sharp flexion with a mild degree of abduction; probably the best way of attaining this position is by having the patient sit up in bed. In this way the traction of the psoas muscle is released and the fragments allowed to approximate. No special form of splint is required.

Fractures of the Shaft—The treatment of this type of fracture can be summed up in the proper use of the Thomas splint. All other forms of fixation, open operation, plating or wiring, can be relegated into the discard heap of surgical procedure, for if properly employed, the Thomas splint insures good results. However, certain definite points must always be borne in mind, else failure may ensue.

1. A large ringed Thomas splint should be utilized.

2. The ring must be held firmly below the tuberosity of the ischium. If this is not done, pressure sores result, as well as tilting of the pelvis. Besides this, the ring is not held clear of the anus and rectal function is interfered with. To maintain the proper position of the ring, a suspension cord is run upward to a pulley on the Balkan frame, and passes backward through a second pulley to behind the head of the bed. To it are attached weights (seven to ten pounds, as a rule, are adequate). This pull holds the ring snugly against the ischial tuberosity, even when patient is moved or rises in bed.

3. Whenever possible, a knee flexion splint should be employed. This consists of the lower half of the Thomas splint attached to the sides of the main splint by a hinged attachment allowing of movement up and down, and giving free extension and flexion at the knee. A suspension rope passes from the end of the splint upward to a series of pulleys. The proximal end of the rope is attached to the ring of the Thomas splint. The patient can then, by pulling on the suspension rope, move the knee up and down at will. The maintenance of this free mobility at the knee is of extreme importance, as one of the commonest permanent deformities ensuing from fracture of the femur is stiffness at this joint, and should always

be guarded against by massage and free movement.

4. The foot should be maintained at right angles to the limb. This position can be obtained by gluing the lower half of the sock to the plantar surface of the foot, or by means of a broad adhesive strip similarly applied. From this a suspension rope is run to an overhead pulley, to which is attached a light weight (two to three pounds are adequate). Never should the sock or the adhesive plaster be permitted to pull from the tendo-Achilles, as pressure sores are sure to result.

5. Suspension of the leg is effected by means of transverse straps of bandage or flannel, four inches wide, fastened securely to the sides of the Thomas splint by paper clips. The first strap, known as the "master strap" should be placed directly under the site of the fracture and should never be removed. It should be just tense enough to allow the soft parts to ride at a level with the side bars of the splint. The remaining suspension straps should be adjusted snugly to the limb. If properly applied, as a rule, backward bowing of the femur is prevented.

6. Lateral bowing, or displacement of the fragments, is prevented by means of pressure pads attached to the sides of the Thomas splint, made adjustable by set screws, which allow the application of the pressure wherever desired. The discs of these pressure pads should be made of wood, so as to allow the taking of X-rays without their removal. In the case of marked anterior or posterior bowing, similar adjustable pads can be attached to the Thomas splint by means of metal arches attached to the side bars of the splint and to which the pressure discs are attached, and pressure from either the front or behind obtained.

7. Traction. This is of two types, either skeletal or indirect. By skeletal traction is meant traction directly from the displaced distal fragment of bone. Numerous methods have been advocated, but all resolve themselves into modifications of the Steinman nail traction or the ice-tong or caliper traction. Best results are probably obtained by some form of the ice-tong variety of traction. Certain specific precautions should be observed with this form of treatment.

(a) Strict asepsis must be observed.

(b) The synovial membranes and sacks about the knee must be avoided.

(c) The thinner parts of the condyle of the femur must be avoided by fixing the points of the caliper at the denser part of the bone at the level of the adductor tubercle.

(d) The tongs should be provided with guards to prevent their penetration of the bone and the meeting of their points.

Indirect traction is the type of traction obtained by the application of adhesive bands or by means of cloth strips glued to the leg with some form of glue—Sinclair's, Huessner's, or the one preferred by the British, consisting of five per cent celluloid dissolved in commercial acetone (the latter can be readily prepared from old X-ray films from which the emulsion has been removed. Its sole objection is that it frequently causes localized blisters at the point of attachment of the traction strips.

These strips should always be applied well above the site of fracture to relax the entire muscle bundle about the fracture. Never should traction be made below the knee-joint, for, in our experience, this has invariably produced troublesome relaxations of the ligaments about the knee and localized the stiffness.

Whenever traction is applied, it should be maximum at the beginning and it should be continuous. The day after application an X-ray should be taken to show the position of the fractured ends, and, if found in proper alignment, some of the weights may be removed. A great many workers, however, prefer to have an excess pull so that when the traction is removed and the patient allowed to walk, that shortening may not be produced by the retraction that usually occurs in soft callus. As a rule, I believe it is a good point to remember, although "caliper walking" should also obviate this difficulty.

Fractures of the Lower Third of the Femur—In this condition it is essential to place the ice-tong higher up than usual, because the lower fragment is carried backward into the popliteal space by the gastrocnemius muscle. With super-condylar fractures the limb should be put up in flexion in order to obtain neutral muscle pull. This allows free movement at the knee and prevents stiffness of this important joint. These conditions, essential for treatment, can be best obtained by means of a large ringed Thomas splint elevated at its lower end and secured at the foot of the bed, while caliper traction is made from the condyles. The lower end of the bed can be elevated about twelve inches, after the Hodgkin's method. Should there be any tendency to lateral rotation, it can be effectually controlled by the Sinclair skid.

Fractures Through the Condyles—Poor results are obtained by skeletal traction in these cases, for, in our experience, there is a tendency for the tongs to separate the fragments. The best method of treatment we have found to be the attachment of adhesive or gauze strips glued to the limb in a V-shaped manner, the apex upward and anterior, bringing the strips laterally over the condyles, the knee being kept in flexion, and exerting traction from below. This forces the fragments together and maintains a proper pull downward.

If by this method reduction is not complete in one week, open operation should be instituted to properly approximate the fragments. This is especially true whenever the fracture line extends through the articular cartilages. Should the knee-joint be opened during this procedure, we have found that the split patellar approach offers best results.

After Treatment—This consists of careful observation and adjustments guided by X-ray examination. Massage and electric treatment of the muscles should be instituted on the first day and carried on to the complete rehabilitation to normal. The master band should never be removed. This form of treatment should be continued until bony union has occurred and should be judged chiefly by radiograms, although it is well to remember that it is not safe to bear any weight upon the

limb until localized tenderness has disappeared in the callus at the point of fracture. Backward bowing at the site of fracture should be carefully guarded against at all times, as this displacement, throwing the muscles out of the normal plane of action, causes serious after-derangement of the knee-joint. The ring of the Thomas splint should be observed daily and no over-riding of the tuberosity of the ischium be permitted.

Complications—With the advent of the Whitman method and the proper use of the Thomas splint, complications are few. At the point of entrance of the caliper there may develop a low-grade osteitis. This as a rule, however, takes care of itself when traction is discontinued. Nerve injuries, although occurring in twelve to twenty per cent of all cases during the war, are rare in industrial cases. They should, however, be watched for at all times and treated adequately. The same point applies to injuries to blood vessels, especially of the popliteal artery.

Caliper Walking—The fracture having united, the patient should not be permitted to bear his weight upon the limb until bony union is firm, otherwise, bowing ensues with shortening, and the results of weeks of careful attention are destroyed. The caliper walking splint allows the patient freedom of movement commensurate with his condition, and will be found a valuable and necessary adjunct to the treatment.

SUMMARY

We have attempted to outline in the brief period allowed us, the essential points of treatment of fractures of the femur. Many smaller details have been omitted because we feel each worker will find that certain smaller changes will, if necessary, give him results in individual cases, but there are certain basic facts which we wish to reiterate before closing.

1. Fracture of the femur is a serious process, both in its immediate aspect and its possibility of permanent impairment of the artisan's function.

2. The Whitman and Thomas splint methods bring almost perfect results if properly applied. The medical profession was slow to take them up but the great war and later experiences in industrial surgery proved their efficiency.

3. Every case should be painstakingly watched. Daily inspection and frequent X-ray examinations are as essential as the proper application of the method chosen for treatment.

4. The mobility of the knee should be carefully guarded both by free, passive, and active movements and massage.

I have purposely not entered into the discussion of compounded fractures of this bone, because the essentials of treatment are the same as in uncomplicated cases, save for the proper management of the soft parts and any ensuing infection. This would open up the field of the treatment of wounds and infections and would really not in any way be tantamount to the essential process considered here—the treatment of fractured femurs.

EFFICIENT RECORD MAKING IN THE TREATMENT OF INDUSTRIAL DISABILITIES

By HARRY LESLIE LANGNECKER, M. D.,
San Francisco

In the consideration of records concerning injuries of an industrial nature, simplicity, including complete details and progress toward recovery, is essential. Furthermore standardization of certain methods available to every physician is most important.

With this point in view, record making, which would accord with and contain necessary data, utilized in the medical consideration of the disability by the Industrial Accident Commission, was evolved, and in such a manner the disability cases referred to the Stanford University Hospital, Physiotherapy Department, have been recorded.

In order to conform to the efficient methods now being used, frequent conferences with Dr. F. E. Raynes, of the Industrial Accident Commission, were held. Many suggestions and certain measuring devices have been adopted and found most useful. To Dr. Raynes, therefore, much credit is due for stimulating and furthering the systematic use of simple, accurate measures, which might be considered a basis for a standardized record form to be used in the treatment of these cases. The adoption of such measures will prove of great value both in exhibiting medical efforts and in clarifying questionable conditions which so frequently have to be considered—at a later date—by the Industrial Accident Commission.

When an industrial case is referred for treatment to the Physiotherapy Department, a record is made by the methods about to be described. Observations are made frequently during the progress of treatment, and finally at the termination of treatment. A detailed account of how to use the recording paraphernalia would seem unnecessary in this paper, as the illustrations and forms readily explain themselves.

RECORD OF DISABILITY CASE

Name Age Weight Height
 Address Occupation
 Employer Insurance carrier
 Insurance status
 Case referred by
 Past history
 Physicians who have attended case
 Date of injury Region affected
 Diagnosis
 How accident occurred
 Synopsis of treatment already received
 Date examined when referred Ambulatory?
 Orthopaedic status
 Cardinal facts in case
 Further treatment advised
 Selected employment Work preference
 Impression
 Remarks

SPECIAL RECORD FOR HAND DISABILITY

Name Date
 Wrist Radial flexion
 Major Ulnar flexion
 Minor Forearm
 Dorsal flexion Supination
 Palmar flexion Pronation

 Fingers Tip fails
 Flexion of to reach
 Major Proximal Middle Distal palm, thenar By
 Minor phalanx phalanx phalanx or hypothenar inches
 eminence

In disabilities involving the feet, much may be determined by taking impressions of the plantar surface while weight-bearing. Spreading of heel, as in os calcis injuries, lowered arches, abnormal shapes, callosities, etc., are graphically recorded, as shown in figure 9. The apparatus necessary consists of finger-print ink, a mixing surface and a rubber ink-roller for applying and equally distributing the ink on the sole of the foot. The impression is obtained on any ordinary paper.

SUMMARY

Better record making in the treatment of industrial disabilities is essential.

Methods must be simple, definite and include every available detail, and conform with the examination made by the Industrial Accident Commission.

Such methods should be uniform and standardized, so as to be readily adapted and utilized by any physician.

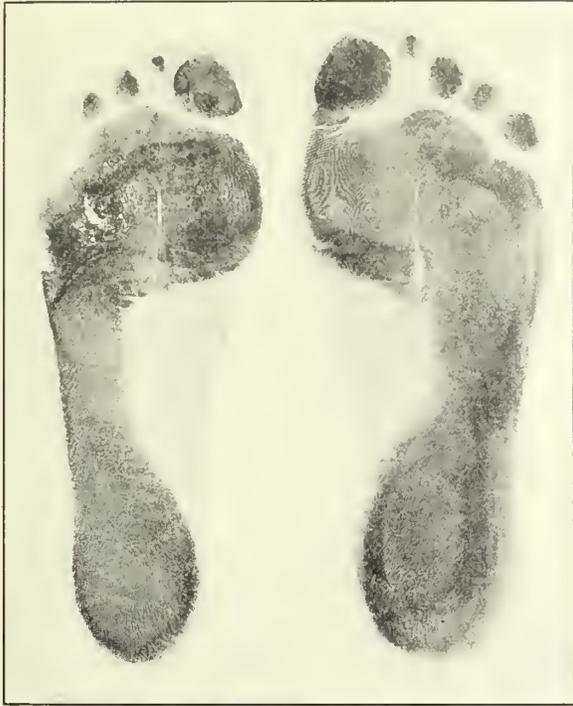


Figure 9

The employment of photographs to record bodily conditions resulting from industrial injuries, greatly enhances the value of any record. Stereoscopic views preferably, but even single views taken to clearly reflect the deforming or abnormal state, such as faulty posture, statics, cumbersome appliances, limited movement of an extremity or spinal column, can be adequately acquired at the first examination in the examining room by using a stereoscopic kodak on an adjustable stand, as shown in figure 10.

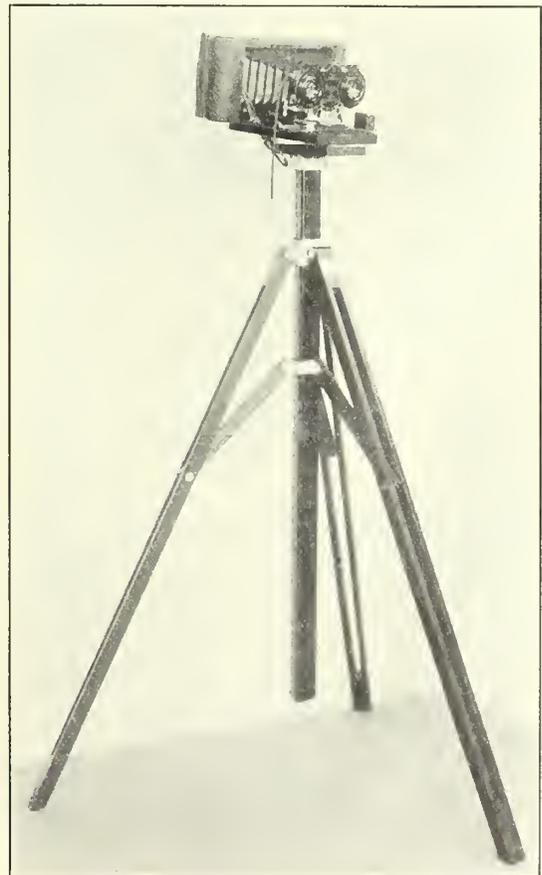


Figure 10

EXAMINATION OF APPLICANTS FOR LIFE INSURANCE

By THOS. G. DABNEY, M. D., San Francisco

It is a matter for comment that so little is written in our medical journals on the subject of life insurance examinations and the relation of the examiner to the medical department of his company. Especially is this true when we reflect upon the large number of examinations made each day by the physicians of this country and the large part such work plays in the practice of many physicians, both as to the time devoted to the work, and the income derived therefrom. That more information has not been published on this subject is perhaps due to the fact that, until recent years, the examination of an applicant for life insurance has, in a large measure, been regarded very much in the same light as an examination made for diagnosis and treatment of a patient. In the past few years, however, the more exact and scientific methods of classifying risks adopted by the medical directors of many life insurance companies has made necessary greater accuracy, both in taking the applicant's history and in the actual physical examination.

Under the system of rating now employed, it is found that some risks which were formerly considered insurable at standard rates, must have imposed an increase in premium. Likewise, it is found that many risks which were formerly considered uninsurable on any plan can safely be granted substandard insurance—i. e., an addition to the premium sufficient to compensate for the increased mortality found to occur in that particular class. Medical directors are now able to classify, with a remarkable degree of accuracy, the different impairments, with regard to mortality results. But in order to be able to decide in what class a risk must be placed, they are very largely dependent upon the picture presented to them on the examination paper, and herein lies the importance for the examining physician to have a correct understanding of the necessity of presenting on the paper which he sends in, an accurate picture of the applicant and of any impairment that he may have, as brought out either in his history or on the physical examination. The efficiency of the examiner depends entirely upon his ability to obtain from his examination of the applicant and convey to the medical directors this picture in a concise thorough manner. Some physicians seem to possess this faculty to a greater degree than others, but there is no reason why any physician of intelligence should not be able to make a satisfactory examination.

The most serious and annoying feature with which medical directors have to contend is that many physicians will insist on making examinations for life insurance in a purely perfunctory manner, and do not give the care and attention to each individual case, without which accurate and dependable examinations cannot be made. The experienced examiner making a large number of examinations finds some of his biggest surprises in subjects that, upon presentation, appear to be first-class risks in every regard, and probably would be passed as such on a perfunctory examination.

but in whom, upon careful examination, impairments are developed which may make the subject uninsurable or acceptable only for substandard insurance. It is assumed that any physician of ordinary intelligence and training can make a satisfactory physical examination, as called for on the life insurance blank, and it is not in this part of the examination that the deficiency of the examiner most frequently lies.

It is first and most important in his failure to obtain from the applicant an existing history of some condition which may have an important bearing on the applicant's longevity. By no means are all of the early death claims a result of impairments presenting objective symptoms, such as kidney, heart, and pulmonary lesions, which the examiner failed to detect, but a large number of these claims are due to impairments, a history of which the examiner failed to obtain. The words "examiner failed to obtain" are used advisedly, for the records show that the careful, painstaking examiners have few, if any, early deaths charged against their records on this account. Many physicians, in making insurance examinations, permit the actual physical examination, the examination of the heart, lungs, urine, etc., to overshadow in importance the accurate taking of the applicant's history. They fail to realize that the insurance applicant, unlike the patient who desires to give the physician a detailed account of his impairments, while he may not be aggressively secretive, is often, at least, passive when it comes to giving his clinical history, and that in these cases skill and finesse are required to get from the applicant histories of affections which can only be brought out in this manner.

Second in importance is the examiner's failure to record a history which he may obtain, deciding in his own mind that it is not of sufficient importance to have any bearing on the risk. This is an exceedingly dangerous action for the examiner to take, for in the light of present day methods employed by the medical directors it is not, as a rule, possible for the examiner to know what impairments are too trivial to have some bearing, or at least to require further investigation before a decision can be made as to their importance. Too frequently an examiner accepts a statement from the applicant, given lightly, as being of no significance, when by careful questioning it is found that a condition may be developed which will have marked bearing on the risk.

As an illustration of this point, a rather common example may be cited. An applicant is presented for examination and is asked if he has ever had stomach trouble, to which he replies, either indifferently or jocosely, "Oh, an occasional bilious attack when I eat too much." "How often do you have these bilious attacks?" "Maybe once a week, sometimes not for two or three months." "What are your symptoms when you have these attacks?" "Oh, a little gas." "Have any vomiting?" "No." "Any blood in stools?" "No." "Any pain?" "Well, sometimes a few gas pains." "Ever consult a physician about these bilious attacks?" "Well, yes, I did consult Dr. Blank a few months ago." "What did he do for you?"

"Told me to be a little careful about my diet."
 "Did Dr. Blank have an X-ray made?" "Yes, come to think of it, he did." "What did the X-ray show?" "Well, Dr. Blank said there was a little cloud on it." "Did Dr. Blank suspect that you might have an ulcer of the stomach?" "Well, yes, he said if I wasn't careful I might have an ulcer."

The average physician, unversed in life insurance mortality, would be surprised to know what a large number of early death claims have been presented in the cases of applicants who, on examination, gave histories of apparently trivial gastric or intestinal disorders and have later developed ulcer, appendicitis, carcinoma, etc.

The third point in which examiners are sometimes deficient is not so important from a mortality aspect, but is exceedingly annoying to the medical directors, causing many delays and much correspondence and frequently the loss of business. This is the failure of the examiner to give a complete and comprehensive description of an impairment or the history of an impairment which he may bring out on the examination. This point may best be illustrated by citing one or two examples taken from actual examinations.

On a recent paper the examiner records the applicant's reply to the question, "Have you ever had any nervous affection?" "Had a fright when three years old, and have been nervous ever since." What does this convey to the medical directors of that company? Nothing. It might mean anything from the simple act of blushing to paralysis agitans. Upon writing back to the examiner for further information, it was developed that this applicant stammered when he became excited for any reason, and that there had never been any other manifestation of any nervous affection. This could have been stated by the examiner in the first instance in very few words, and would have saved delay and unnecessary correspondence. Another examiner reports that the applicant has had dizzy spells, without giving the cause, duration, severity, etc. It is, of course, impossible for the medical directors to take primary action on cases of this kind.

The failure of the examiner to make correct and comprehensive examinations is seldom due to lack of ability, but usually to a failure to comprehend what is required on the examination, and frequently to an assumption on the part of the examiner that the medical directors possess some occult power of determining from indefinite and incomplete statements the picture which the examiner desires to convey to them. If the examining physician, after the completion of his paper, would mentally place himself in the position of the medical director, who of course has not had the benefit of impressions gained from personal contact with the applicant, and then seriously consider whether the history or the description of an impairment, as set forth, is so definite that he would be able to form a correct picture of the applicant, there would rarely be any necessity for additional correspondence for the purpose of clearing up indefinite and incomplete statements.

It is not intended to minimize the importance

of a thorough physical examination and a careful description of any abnormality discovered, but to emphasize the fact that the most frequent deficiency of examiners lies in their failure to obtain and properly record existing histories of impairments.

San Francisco, California, September 13, 1921.

GENERAL SESSION AND SECTION OFFICERS FOR THE 1922 MEETING OF THE STATE SOCIETY

The list of the officers of the general sessions and the various sections of the State Society is published below, so that members desiring to contribute papers may have the names and addresses of the proper officers of the section in which they are interested. Members desiring to present papers should communicate without delay with the chairman and secretary of the appropriate section, because the program is getting well under way and will be closed and go to press the first week in February.

The Secretary of the State Society, as chairman of the General Program Committee, invites correspondence and suggestions regarding any phase of the 1922 program.

GENERAL SESSIONS

Chairman, Dr. John H. Graves, President of the Society, 977 Valencia Street, San Francisco.
 Secretary, Dr. W. E. Musgrave, Chairman of the Program Committee, 912 Butler Building, San Francisco.

SECTION ON TECHNICAL SPECIALTIES

Chairman, Dr. Ray Lyman Wilbur, President Stanford University.
 Secretary, Dr. Charles T. Sturgeon, Merritt Building, Los Angeles.

SECTION ON MEDICAL ECONOMICS, EDUCATION AND PUBLIC HEALTH

(League for the Conservation of Public Health)
 Chairman, Dr. Dudley Smith (President League for the Conservation of Public Health), Thomson Building, Oakland.
 Secretary, Dr. W. T. McArthur (Secretary League for the Conservation of Public Health), Security Building, Los Angeles.

SECTION ON INDUSTRIAL MEDICINE AND SURGERY

Chairman, Dr. E. W. Cleary, 177 Post Street, San Francisco.
 Secretary, Dr. Packard Thurber, 906 Black Building, Los Angeles.

SECTION ON RADIOLOGY

(Roentgenology and Radium Therapy)
 Chairman, Dr. Albert Soiland, 527 West Seventh Street, Los Angeles.
 Secretary, Dr. H. E. Ruggles, Butler Building, San Francisco.

SECTION ON PATHOLOGY AND BACTERIOLOGY

Chairman, Dr. William Ophuls, Stanford University Medical School, San Francisco.
 Secretary, Dr. Roy W. Hammack, Brockman Building, Los Angeles.

SECTION ON GENERAL MEDICINE

Chairman, Dr. Joseph M. King, Brockman Building, Los Angeles.
 Secretary, Dr. E. S. Kilgore, 391 Sutter Street, San Francisco.

SECTION ON PEDIATRICS

Chairman, Dr. William Palmer Lucas, University Hospital, San Francisco.
 Secretary, Dr. Hugh K. Berkley, Brockman Building, Los Angeles.

SECTION ON NEUROPSYCHIATRY

Chairman, Dr. Walter F. Schaller, 909 Hyde Street, San Francisco.
 Secretary, Dr. W. B. Kern, Brockman Building, Los Angeles.

SECTION ON GENERAL SURGERY

Chairman, Dr. Charles D. Lockwood, 295 Markham Place, Pasadena.
 Secretary, Dr. Edmund Butler, Butler Building, San Francisco.

SECTION ON EYE, EAR, NOSE AND THROAT

Chairman, Dr. Frank A. Burton, Watts Building, San Diego.
 Secretary, Dr. Harvard McNaught, Butler Building, San Francisco.

SECTION ON UROLOGY

Chairman, Dr. George W. Hartman, 999 Sutter Street, San Francisco.
 Secretary, Dr. Louis Clive Jacobs, 462 Flood Building, San Francisco.

SECTION ON ORTHOPEDIC SURGERY

Chairman, Dr. W. W. Richardson, Brockman Building, Los Angeles.
 Secretary, Dr. G. J. McChesney, Flood Building, San Francisco.

SECTION ON ANESTHESIOLOGY

Chairman, Dr. Mary E. Botsford, 807 Francisco Street, San Francisco.
Secretary, Dr. Eleanor Seymour, 308 Consolidated Realty Building, Los Angeles.

SECTION ON GYNECOLOGY AND OBSTETRICS

Chairman, Dr. Harry M. Voorhees, Brockman Building, Los Angeles.
Secretary, Dr. L. A. Emge, Stanford University Hospital, San Francisco.

**INDEX AND CONTENTS
OF
THE CALIFORNIA STATE
JOURNAL OF MEDICINE
FOR 1921**

A

Accident and Injury, Stiffness in the Extremities Followed by—A. L. Fisher, M. D. 100
Airplane Waits 212
Alderson, H. E., M. D.—Poison Oak Dermatitis 189
Allen, C. L., M. D.—The Psychopathology of Somatic Disease 377
Allen, Chas. L., M. D.—Episodic Mental States and Border-Line Conditions in Psychiatry 150
Ameba-Like Leucocytes in Normal Blood and Its Pus—Herbert Gunn, M. D. 198
Amoebic Abscess of the Liver—P. K. Gilman, M. D. 239
Amoebic Gall Bladder Infections With Operation—Herbert Gunn, M. D. 41
American Congress on Internal Medicine 91
Amoebic Abscess of Liver With Pulmonary Sequelae—Rexwald Brown, M. D. 282
Anesthetists, Pacific Coast of 302
Ante and Post-Operative Treatment—C. L. Lowman, M. D. 195
Arthritis, Chronic, The Great Second Type of—Further Studies—L. W. Ely, M. D. 415
Arthritis, Chronic—Samuel J. Hunkin, M. D. 334
Arthritis, A Group Study of 300 Cases—Maynard C. Harding, M. D. 26
Asthma, Bronchial Etiology of 150 Cases of—George Piness, M. D. 29
Asthma, Bronchial, A Study of Nasal Conditions Occurring in—Simon Jesberg, M. D. 33
Asthma, "Neurotic"—F. F. Gundrum, M. D. 258
Atraumatic Technique, An Essential in Reconstructive Surgery—Sterling Bunnell, M. D. 204

B

Barrett, G. M., M. D.—The Industrial Surgeon—What He Is—What He Can Be—What He Should Be 68
Barrow, John V., M. D.—The Incidence and Clinical Significance of Flagellate Infection in Certain Chronic Diseases 395
Bartlett, E. L., M. D.—Chronic Lesions of the Lower Lip 405
Benzyl Benzoate Therapy, Biological Facts—Ludwig A. Emge, M. D. 374
Bilateral Nephrolithiasis—G. W. Hartman, M. D. 59
Bladder Tumors by Radiation and Fulguration, Treatment of—R. L. Rigdon, M. D. 243
Blood Studies, The Value of—W. P. Lucas, M. D. 441
Board of Medical Examiners, State Tax \$2. 91
Board of Medical Examiners 422
Botsford, Mary E., M. D., and Dorothy A. Wood, M. D.—A Preliminary Report of An Investigation Into the Oxygen Percentages of Nitrous Oxide Oxygen Anesthesia 354
Brain Injuries, Acute—Thos O. Burger, M. D. 207
Breitinger, Edna B.—Pet Alredale Undergoes Serious Operation. Twilight Sleep Administered While Dog's Spinal Column Is Stretched 156
Brown, Philip King, M. D.—Public Health and Medical Welfare 425
Brown, Rexwald, M. D.—Amoebic Abscess of Liver With Pulmonary Sequelae 282
Brunn, Harold, M. D., and Lionel Prince—Uncomplicated Fractures of the Pelvic Ring 392
Bunnell Sterling, M. D.—An Essential in Reconstructive Surgery, Atraumatic Technique 204
Bunnell, Sterling, M. D.—Practical Points in Using Thomas Splints 13
Bursitis, Chronic Trochanteric—J. K. Swindt, M. D. 326
Business Methods, Advance in—Chairman's Address—P. A. Jordan, M. D. 84
Burger, Thos. O., M. D.—Acute Brain Injuries 207
Butler, Edmund, M. D.—Improved Incision for the Fredet Rammstedt Operation 17
Butler, Edmund, M. D.—Indications for Infusion of Blood Substitutes and Transfusion of Blood in Cases of Traumatic Hemorrhage and Shock 145
Butler, Edmund, M. D.—Some Observations in Cases of Fractured Skulls Seen in the San Francisco Emergency Hospitals 289

C

California Academy of Medicine 490
California Association of Medical Social Workers' Preamble and Constitution 381
California Association of Radiographers, Preamble and Constitution of 382

California Sanatorium, New Club House 421
Cancer Problem, California's—A. R. Kilgore, M. D. 403
Cancer of the Cervix, The Early Diagnosis and Treatment of—R. E. Skeel, M. D. 438
Cardiac Irregularities—Drs. W. J. Kerr and H. E. Ruggles 386
Catton, Joseph, M. D.—Trauma, Its Relation to Nervous Diseases of Undetermined Pathology 202
Catton, Joseph, M. D.—Post-Traumatic Neuroses: Their Mechanism 463
Cecil, A. E., M. D.—One Hundred Consecutive Perineal Prostatectomies: A Critical Review 287
Chest, Surgery of the—Chas. D. Lockwood, M. D. 105
Chiropractic Thrust, New Obesity Cures for Old or the—Lulu Hunt Peters, M. D. 237
Chiropractically Speaking 38
Chiro, The Graceless 257
Clark, W. A., M. D.—Another Problem in Surgery 223
Cleary, E. W., M. D.—Organized Medicine for the Masses a Feature of Present Day Medical Practice Clinical Department 41, 91, 136, 177, 258
Circulation, A New Theory—A. H. White, M. D. 257
Cornea, An Anatomical Study of Eight Cases of Degeneration of the—Charles Magby, M. D. 424
Correction, A 38, 176, 216
Correspondence 38, 86, 173, 212, 257
Council of the State Society and the Officers of Constituent Societies 448
Council of the State Society—Abstract of the Minutes of the 127-128 Meetings 449
Creamer, Michael, M. D.—The Reveries of a General Practitioner 143
Crippled Children, Better Treatment for—H. L. Langnecker, M. D. 152
Cummings, Roland, M. D.—Climacteric Hypertension 116

D

Dabney, Thos. G., M. D.—Life Insurance, Examination of Applicants 480
Davidson, Anstruther, M. D.—The Endocrines and Their Influence on the Skin 248
Day, Robt. B., M. D.—Ureteral Transplants for Obstruction of the Lower Ureter 21
D'Arsonval Method of Coagulation Necrosis for the Removal of Immense Intravascular Outgrowths of the Prostate, Simple or Malignant—Granville MacGowan, M. D. 351
Deaths 92, 180, 260, 302, 346, 386, 422, 456, 492
Decayed Teeth and Children's Diseases 343
Deformities, Restoration of Function in Acquired Hand—Drs. Gottlieb and L. I. Newman 365
Deformities of the Hand Acquired After Accidents—A. Gottlieb, M. D. 72
Department of Pharmacy and Chemistry—Edited by Felix Lengfeld, Ph. D. 176, 300, 491
De Puy, E. Spence, M. D.—Success As Applied to Urology 98
Dignan, H. H., M. D.—Fractured Femur 147
Dillon, James R., M. D.—Urinary Incontinence and Its Operative Repair 61
Diseases of the Skin and Hands in California Industry—R. T. Legge, M. D. 461
Doctor Moffitt Honored 340
Dukes, Chas. A., M. D.—Examination of Employees in Industry 74
Duncan, Rex, M. D.—Recent Developments in Radium Therapy 102
Duodenum, Chronic Dilatation of the—Harlan Shoemaker, M. D. 292
Duodenal Ulcer, Acute Perforation of—Frank J. Gundry, M. D. 178

E

Early, C. E., M. D.—Fractured Femurs 476
Eaton, George Lee, M. D.—The Influence of Adrenalin on Nephritis and Its Complications by Infection Into the Kidneys 233
Ebright, George E., M. D.—The Etiology of Parenchymatous Nephritis (Concluded from page 369, September Journal 1921.) 401
Ebright, George E., M. D.—Medical Aspects of Visceroptosis 221
Ebright, G. E., M. D.—The Etiology of Parenchymatous Nephritis 369
Editorial Comment 97
El Retiro, The New School for Girls—Miriam Van Waters, Superintendent 37
Ely, L. W., M. D.—The Great Second Type of Chronic Arthritis—Further Studies 415
Emge, L. A., M. D.—Biological Facts About Benzyl Benzoate Therapy 374
Employees in Industry, Examination of—Chas. A. Dukes, M. D. 74
Endocrines and Their Influence on the Skin, The—Anstruther Davidson, M. D. 248
Enloe, N. T., M. D.—Plaster Cast Immobilization of Fractures Prior to Open Operation for Reduction of Same 199
Epidemic Encephalitis—H. C. Moffitt, M. D. 305
Epilepsy, Meningitic—C. E. Reynolds, M. D. 329
Examining and Treatment Table, A New 386
Extension Work 450
Eye, Ear, Nose and Throat—Publ. Year Book Publishers 131

EDITORIALS

Abortifacients on the Run 5
Advertising, Ethics of 304
Advertising in Lay Publications 457
Advertising Medicine 349
Anesthesia, The Growing Recognition of 182

Anesthesiology Situation in California, The..... 351
 Annual Meeting in San Diego..... 47
 Annual Tax..... 1
 Anthropology and Americanism..... 142
 Arspenamine, Silver..... 301
 Assembly Bill 72..... 94
 Autopsies, Conduct and Value of..... 183
 Autopsies, The Need For..... 94
 Board of Medical Examiners Abolished by Assembly Bill 347..... 49
 Call of Service..... 220
 Cancer Situation..... 388
 Chinese Herbalists Vie With Chiropractors in Breaking the Laws..... 5
 Chiropractic Open Season Ends..... 4
 Choice of Physician? Should the Patient Have the Right of..... 347
 Commercial Vitamin Preparations..... 219
 Crippled Children, A Commitment of the..... 141
 Crippled Children, Care of..... 141
 Death Notice Incorrect..... 219
 Diet and Health With Key to the Calories..... 220
 Diphtheria, Artificial Immunity in..... 182
 Due Process of Law—What the Culver Decision Means..... 59
 Editorial Comment..... 52, 186
 Editorial Policy..... 217
 Eddiansignopracors..... 97
 "Evangelists" of Sorts..... 424
 Fee Splitting..... 423
 Fiftieth Annual Meeting of the State Medical Society..... 181
 Fulton's Compounds..... 52
 Group Medicine..... 304
 Health Advisers, Doctors as..... 97
 Hospitals, Attention!..... 141
 Hospitals, Stock Selling..... 388
 Ipecac—The Panacea and Cure-All..... 51
 Legislature, The..... 1
 League Luncheon at Coronado, May, 1921..... 218
 Medical Education..... 348
 Medical Freedom..... 2
 Medical Society, State of California, Extension Work..... 304
 Miners' Consumption..... 219
 Monkey Testicles and "Lost Manhood"..... 424
 Narcotic Law Instructions..... 220
 New Secretary..... 140
 Newspaper Medicine..... 184
 Nutrition, Fundamentals of..... 3
 Oath of Hippocrates..... 47
 Oral Radiology..... 348
 Orthodiagraphy..... 303
 Pacific Coast Medicine..... 218
 Public Health, A Battleship for..... 96
 Public Health..... 96
 Physician and Social Agencies..... 185
 Quindin in Cardiac Arrhythmias..... 457
 Radiology is a Medical Specialty..... 149
 Register by July, 1921..... 220
 Radiographers, The California Association of..... 350
 Relationship Between the State and the Physician in England, The..... 349
 Salvaging of Civilization..... 181
 San Diego, All Aboard..... 140
 Senator and Assemblyman, Interview Your..... 48
 Smallpox Epidemic..... 96
 Social Program, San Diego..... 149
 Social Workers, Medical, The California Association of..... 350
 State Medical Society? What Do You Get Out of the State Society, A Strong..... 93
 State Society, A Strong..... 181
 State Society, Semi-Centennial of the..... 217
 State Lecture Bureau..... 218
 Surgeon's Fee, Fixing the..... 388
 The 1922 Meeting of the State Society, Yosemite Valley, May, 1922..... 387
 Tithes "Render Unto Caesar," Etc..... 1
 Vanitas Vanitatum..... 2
 Vivisection, \$100,000 to Fight..... 3
 Tuberculosis, The Influence of Climate on..... 349
 Tuberculosis Program, Municipal..... 95
 Yosemite Valley Meeting, More About..... 423

F

Feeding Infants, The Modern Methods of..... 418
 Femur, Fractured—H. H. Dignan, M. D..... 147
 Fever, Further Studies on the Nature of—Drs. E. C. Schmitt and W. D. Sansum..... 371
 Filariasis—Irs. N. G. Hale and F. F. Gundrum..... 177
 Flagellate Infection in Certain Chronic Diseases, The Incidence and Clinical Significance of—John V. Barrow, M. D..... 395
 Foetus, Post-Maturity of the—Norman H. Williams, M. D..... 111
 Fracture, A Plea for Better Results—George J. McChesney, M. D..... 11
 Fractured Femurs—C. E. Early, M. D..... 476
 Fractured Skulls Seen in the San Francisco Emergency Hospitals, Some Observations in Cases of—Edmund Butler M. D..... 289
 Fredet Rammstedt Operation, Improved Incision for the—Edmund Butler, M. D..... 17

G

Gall Bladder Focalization and Its Non-Surgical Treatment..... 136
 General Practitioner, The Reveries of a—Michael Creamer, M. D..... 143
 General Surgery—Pubrs., Yearbook Publishers..... 131
 Genito-Urinary Tract, Associated with Active Pulmonary Tuberculosis, Involvement of the—Anders Peterson, M. D..... 18

Gibbons, Morion R., M. D.—How Can Medical Service Be Improved?..... 56
 Gibbons, M. R., M. D.—Return to Work After Injury..... 458
 Gilcreest, E. L., M. D.—Industrial Injured and Sick at the Hahnemann Hospital of the University of California—The Development of a Modern Medical Service for the..... 462
 Gilman, P. K., M. D.—Acute Suppurative Thyroiditis..... 294
 Gilman, P. K., M. D.—Amebic Abscess of the Liver..... 259
 Gilbert, Wm. G., M. D.—Low Haemoglobin in Our Surgical Cases..... 113
 Goitre, Exophthalmic, Skin Rashes in—F. F. Gundrum, M. D..... 339
 Gottlieb, A., M. D.—Deformities of the Hand Acquired After Accidents..... 72
 Gottlieb, A., M. D., and L. I. Newman, M. D.—Restoration of Function in Acquired Hand Deformities..... 365
 Gunn, Herbert, M. D.—Amebic Gall Bladder Infections With Operation..... 41
 Gunn, Herbert, M. D.—Ameba-Like Leucocytes in Normal..... 198
 Gundrum, F. F., M. D.—Filariasis..... 177
 Gundrum, F. F., M. D.—"Neurotic" Asthma..... 258
 Gundrum, F. F., M. D.—Skin Rashes in Exophthalmic Goitre..... 339
 Gundry, Frank J., M. D.—Acute Perforation of Duodenal Ulcer..... 178

H

Haemoglobin in Our Surgical Cases, Low—Wm. H. Gilbert, M. D..... 113
 Hale, N. G., M. D.—Filariasis..... 177
 Hale, N. G., M. D., and Chas. E. Von Geldern, M. D.—Ureteral Diverticula..... 284
 Hanna, W. J., M. D.—Smallpox a Quarantinable Disease..... 187
 Harding, Maynard C., M. D.—A Group Study of 300 Cases of Arthritis..... 26
 Hartman, George W., M. D.—Bilateral Nephrolithiasis..... 59
 Healing Art—Certificates to Practice the..... 302
 Hickok, Galen R., The People of the State vs..... 43
 Homeopathic Medical Society, California State..... 344
 Hospital Betterment in California..... 261
 Hospital Conference, Annual..... 221
 Hospital Conference, The 1922..... 385
 House of Delegates, Personnel of the, for 1921..... 172
 Hurkin, Samuel J., M. D.—Chronic Arthritis..... 334
 Hurwitz, Samuel H., M. D.—Some Aspects of Pernicious Anemia and Its Treatment..... 275
 Hypertension, Climacteric—Roland Cummings, M. D..... 116
 Hypothyroidism, The Diagnosis of—N. W. Janney, M. D..... 313

I

Immunity..... 214
 Index and Contents of the California State Journal of Medicine, 1921..... 483
 Industrial Accident Practice in California, Conditions of—T. C. Myers, M. D..... 357
 Industrial Disabilities, Efficient Record Making—H. L. Langnecker, M. D..... 477
 Industrial Injured and Sick—The Development of a Modern Medical Service for the—E. L. Gilcreest, M. D..... 462
 Industrial Medicine—Robt. T. Legge, M. D..... 64
 Industrial Surgeon—What He is—What He Can Be—What He Should Be The—G. M. Barrett, M. D..... 68
 Infantile Atrophy—Joseph Robinson, M. D..... 436
 Infantile Paralysis, Increasing..... 305
 Inman, T. G., M. D.—Neurological Findings in One Thousand Group Study Cases..... 428
 Inman, Thos. G., M. D.—The Neurological Aspects of Viscerptosis..... 209
 Insurance Rates a Guide to Hygienic Conditions Surrounding Different Occupations—Milbank Johnson, M. D..... 460
 Internal Revenue—John L. Flynn, Acting Collector..... 216
 Intestine, Small, Acute Mechanical Obstruction of the—Samuel Robinson, M. D..... 389

J

Jacobs, L. C., M. D.—Vesico-Intestinal Fistula..... 19
 Jacobs, L. C., M. D.—Manifestations of Lesions in the Posterior Urethra..... 370
 Janney, N. W., M. D.—The Diagnosis of Hypothyroidism..... 313
 Jesberg, Simon, M. D.—A Study of Nasal Conditions Occurring in Bronchial Asthma..... 33
 Johnson, Milbank, M. D.—Insurance Rates a Guide to Hygienic Conditions Surrounding Different Occupations..... 460
 Jordan, P. A., M. D.—Chairman's Address—Advance in Business Methods..... 84

K

Kilgore, A. R., M. D.—California's Cancer Problem..... 403
 King, John C., M. D.—Early Diagnosis of Pulmonary Tuberculosis..... 152
 Kinney, L. C., M. D.—Roentgen Treatment of Uterine Hemorrhage..... 76
 Kocher, R. A., M. D.—Metabolism Studies in Pulmonary Tuberculosis..... 430

L

Lane Medical Lectures..... 41, 490
 Langnecker, H. L., M. D.—For Better Treatment for Crippled Children..... 152
 Langnecker, H. L., M. D.—Treatment of Industrial Disabilities, Efficient Record..... 477

Pyelitis and Pyelonephritis, Some Observations from the Clinical and Laboratory Findings in—Leon J. Roth, M. D. 16
 Pyloric Stenosis, Congenital—Alanson Weeks, M. D. 290

Q

Qualifications for Membership 420

R

Radiographers, Association of 382
 Radiotherapy, Modern—Fred'k H. Rodenbaugh, M. D. 156
 Radium Therapy, Recent Developments in—Rex Duncan, M. D. 102
 Resigned 179
 Resignation of the Editor—A. C. Reed 173
 Return to Work After Injury—M. R. Gibbons, M. D. 458
 Reynolds, C. E., M. D.—Meningitic Epilepsy 329
 Rigdon, R. L., M. D.—Treatment of Bladder Tumors by Radiation and Fulguration 243
 Robinson, Joseph, M. D.—Infantile Atrophy 436
 Robinson, Samuel, M. D.—Acute Mechanical Obstruction of the 389
 Roblee, W. W., M. D.—The Present Nursing Situation 8
 Rodenbaugh, F. H., M. D.—Modern Radiotherapy 156
 Roentgen Diagnosis of Diseases of the Alimentary Canal—W. B. Saunders Co. 211
 Rosencranz, H. A., M. D.—Some Further Experiences in the Technic, Non-Operative, Pre-Operative, and Post-Operative Treatment of Suprapubic Prostatectomy Cases 107
 Roster of Members, 1921—Supplement to June, 1921, Journal —
 Rothschild, Max—The Treatment of Tuberculosis With Partigens (After Muchdeycke) 226
 Rowe, A. H., M. D., and Margaret Eakin, B. A.—Monthly Fluctuations in the Normal Metabolic Rates of Men and Women 320
 Ruggles, H. E., M. D., and W. J. Kerr, M. D.—Cardiac Irregularities 380
 Rules Governing Reading of Papers and Discussions at State Society Meeting 120

S

San Francisco County Medical Society (Industrial Medicine Section) 490
 Sansum, W. D., and E. C. Schmitt, M. D.—Further Studies on the Nature of Fever 371
 Scientific Medicine, Attacks Upon 261
 Section on Dermatology 173
 Section Officers for the 1922 Meeting of the State Society—General Session 419
 Section Officers for the 1922 Meeting of the State Society 447, 481
 Soiland, Albert, M. D.—The Rationale of Radiation in the Female Pelvis 434
 Shoemaker, Harlan, M. D.—Chronic Dilatation of the Duodenum 292
 Size of Women, Concerning the—Preliminary Note With Special Reference to Height—Clelia Duell Mosher, M. D. 53
 Skeel, R. E., M. D.—The Early Diagnosis and the Treatment of the Cervix 438
 Sleep Requirements of Children 418
 Smallpox a Quarantinable Disease—W. J. Hanna, M. D. 187
 Some Observations From the Clinical and Laboratory Findings in Pyelitis and Pyelonephritis—Leon J. Roth, M. D. 16
 Spare the Ox 343
 Spinal Defects and Pain Occurring in Relation to Ocular Disease—Lloyd Mills, M. D. 23
 State Board of Medical Examiners—October Report—Legal Department 42
 State Board of Medical Examiners—Licensing Examination—October, 1920 44
 Spiro, Harry, M. D.—Clinical Usefulness of Orthocardiogram and Cardiac Pattern 251
 State Meeting 119
 State Meeting Reservations 91
 State Society—Annual Convention—Coronado, May, 1921 —
 State Society Meeting, 1922 377
 State Society 385, 486
 State and County Societies Officers, Joint Meeting 385
 State Tax 91
 St. Francis Hospital Clinical Society 420
 Stiffness in the Extremities Followed by Accident and Injury—A. L. Fisher, M. D. 100
 Surgery, Another Problem in—W. A. Clark, M. D. 223
 Surgical Results From An Economic Standpoint—G. G. Moseley, M. D. 291
 Sweet, Robt. B., M. D.—Teeth, Tonsils and Sinuses 116
 Swindt, J. K., M. D.—Chronic Trochanteric Bursitis 326
 St. Joseph's Hospital—San Diego 214
 Syphilis, The Treatment of With Silver-Salvarsan—Drs. Vecki and Ottinger 433

T

Technical Specialty, Organization Meetings of 421
 Teeth, Tonsils and Sinuses—Robt. B. Sweet, M. D. 116
 Things Every Physician Should Read 418, 455
 Thomas Splints, Practical Points in Using—Sterling Bunnell, M. D. 13
 Thyroiditis, Acute Suppurative—P. K. Gilman, M. D. 294
 Ties, and Their Treatment—Thos. C. Little, M. D. 325
 Trailing the Robin Hoods of Medicine 456
 Transferred 179, 260
 Tranter, C. L., M. D.—Peripheral Nerve Surgery 244, 280
 Trauma and Malignant Disease From An Industrial Viewpoint, Relationship Between—W. Ophüls, M. D. 54

Trauma, Its Relation to Nervous Diseases of Undetermined Pathology—Joseph Catton, M. D. 202
 Traumatic Hemorrhage and Shock, Indications for Infusion of Blood Substitutes and Transfusion of Blood in Cases of—Edmund Butler, M. D. 145
 Tuberculosis Conference in London, July, 1921—International Union Against 216
 Tuberculosis, Keep the Poor in Their Home State 186
 Tuberculosis With Partigens (After Muchdeycke), The Treatment of—Max Rothschild, M. D. 226
 Tuberculosis Patients, General Hospitals and 386
 Twilight Sleep—Pet Airedale Undergoes Serious Operation; Sleep Administered While Dog's Spinal Column Is Stretched—Edna B. Breitingger 156

U

United States Public Health Service 343
 University of California Medical School and Hospitals, Children's Department 41, 91
 University California Hospital and Medical Schools, Children's Department—1921 Series, Case No. 5 215
 University of California Medical School and Hospitals, Children's Department—1921 Series, Case No. 4 177
 University California Medical School and Hospitals—1921 Series, Case No. 6 258
 University of California Medical School and Hospitals, Children's Department 136
 University of California Hospitals and Medical School—1921 Series, Case No. 7, 1920 301
 Uterus, Precancerous Lesions of the—Wm. G. Moore, M. D. 362
 Uterine Carcinoma, Heat the Most Practical and Promising Treatment in—J. F. Percy, M. D. 78
 Uterine Hemorrhage, Roentgen Treatment of—L. C. Kinney, M. D. 76
 Ureteral Diverticula—Drs. N. G. Hale and Chas. E. Von Geldern 284
 Ureteral Transplants for Obstruction of the Lower Ureter—Robert V. Day, M. D. 21
 Urethra Posterior, Manifestations of Posterior—L. C. Jacobs, M. D. 370
 Urinary Incontinence and Its Operative Repair—James R. Dillon, M. D. 61
 Urology, Success as Applied to—E. Spence De Puy, M. D. 98

V

Vecki, V. G., M. D., and M. R. Ottinger, M. D.—Treatment of Syphilis With Silver-Salvarsan 438
 Vegetative Systems, Nervous and Endocrin to Clinical Medicine, The Importance of the—F. M. Pottinger, M. D. 367
 Venereal Disease Control 86
 Vesico-Intestinal Fistula—L. C. Jacobs, M. D. 19
 Visceroptosis, Medical Aspects of—George E. Ebright, M. D. 221

W

Wassermann Test on 1518 Men at San Quentin, Results of the—G. W. Nagel, M. D. 193
 Watkins, W. T., M. D.—Physiotherapy Employed in Reconstruction Work 471
 We Heartily Agree 86
 Weeks, Alanson, M. D.—Congenital Pyloric Stenosis. Welmar Sanitarium 421
 White, A. H., M. D.—A New Theory of the Circulation 257
 Why Maryland Quit Physicians' Lines 385
 Williams, Norman H., M. D.—Post-Maturity of the Foetus 111
 Why, Oh! Why 214
 Worthy Appeal 173
 Wisconsin Home-Coming 215
 Wright, H. W., M. D.—The Service of Neuropsychiatry 464

Y

Yates, J. C., M. D.—President's Address 263
 Yosemite Valley Meeting, May 15, 16, 17, 18, 1921 446

COUNTY SOCIETIES

Alameda 87, 132, 174, 212, 256, 299, 340, 453, 487
 Contra Costa 87, 133, 212
 Fresno 87, 133, 212, 256, 420
 Imperial 453
 Kern 133, 256, 487
 Los Angeles 38, 87, 133, 174, 212, 299, 487
 Mendocino 174, 213, 340
 Merced 453, 488
 Orange County 40, 134, 174, 299, 488
 Placer 214, 299, 385, 453
 Northern District Medical Society, Twenty-ninth Annual Meeting of 90
 Northern California Society Anesthetists 135
 Riverside 488
 Sacramento 40, 89
 San Bernardino 453
 San Diego 89, 175, 256, 340, 420, 454, 489
 San Francisco 40, 90, 135, 175, 213, 454, 489
 San Joaquin 90, 135, 175, 257, 299, 340, 480
 Santa Barbara 135, 385, 455, 489
 Santa Clara 90, 420, 489
 Santa Clara, San Mateo, San Benito, Monterey, Santa Cruz 455
 Santa Cruz 135
 Siskiyou 175
 Sonoma 214, 420, 455
 Stanislaus 490
 Tulare-Kings 40, 135
 Tulare 455
 Ventura 175

BOOK REVIEWS

| | | | |
|--|--------------|---|---------------|
| Anaphylaxis and Anti-Anaphylaxis and Their Experimental Foundations—Pubr., C. V. Mosby Co..... | 342 | Medical Clinics of North America—Pubr., W. B. Saunders Co..... | 422, 491 |
| Anesthesia Regional—Pubr., F. A. Davis Co..... | 255 | Nutrition and Clinical Diabetics—Pubr., Lea & Febiger..... | 342 |
| Arteriosclerosis and Hypertension—Pubr., C. V. Mosby Co..... | 35 | Organic Dependence and Disease: Their Origin and Significance—Pubr., Yale University Press..... | 384 |
| Biology, Text-Book of—Pubr., Lea & Febiger..... | 256 | Physical Fitness, The Assessment of—Paul B. Hoerber..... | 422 |
| Brain Injuries, Diagnosis and Treatment—Pubr., J. B. Lippincott Co..... | 297 | Practice of Medicine—Pubr., Lea & Febiger..... | 384 |
| Chest and the Principles of Physical Diagnosis, Diseases of the—Pubr., W. B. Saunders Co..... | 37 | Principles of Medical Treatment—Pubr., W. M. Leonard..... | 491 |
| Clinical Pathology—Pubr., W. B. Saunders Co..... | 256 | Psychology for Nurses—Pubr., W. B. Saunders Co..... | 491 |
| Collected Papers of Mayo Clinic, 1919—Pubr., W. B. Saunders Co..... | 255 | Radiant Energy and the Ophthalmic Lens—Pubr., P. Blakiston's Sons & Co..... | 384 |
| Diabetes, The Allen (Starvation) Treatment—Pubr., W. M. Leonard..... | 384 | Red Cross in Italy, Story of the—Pubr., Macmillan Co..... | 384 |
| Diabetes—Pubr., Paul B. Hoerber..... | 298 | Respiratory Disease, Epidemic—Pubr., C. V. Mosby Co..... | 421 |
| Diabetic Manual—Pubr., Lea & Febiger..... | 35 | Roentgen Interpretation—Pubr., Lea & Febiger..... | 342 |
| Dermatology, Text-Book of—Pubr., Lea & Febiger..... | 255 | Skin, Diseases of—Pubr., Lea & Febiger..... | 342 |
| Ear, Diseases of the—Pubr., J. B. Lippincott Co..... | 299 | Soaps and Proteins—Pubr., John Wiley & Sons..... | 422 |
| Endocrines, The—Pubr., W. B. Saunders Co..... | 255 | Spleen and Some of Its Diseases—Pubr., W. B. Saunders Co..... | 491 |
| Exophthalmic Goiter and Its Non-Surgical Treatment—Pubr., C. V. Mosby Co..... | 35 | Surgical Anatomy—Pubr., W. B. Saunders Co..... | 491 |
| Feeding of Infants and Children, Care and—Pubr., Walter Reeve Ramsay..... | 132 | Surgical Clinics of North America—Pubr., W. B. Saunders Co..... | 342, 422, 491 |
| General Pathology—Pubr., Paul B. Hoerber, N. Y..... | 452 | Surgical Subjects, Essays on—Pubr., W. B. Saunders Co..... | 422 |
| Gynoplastic Technology—Pubr., F. A. Davis Co..... | 37 | Therapeutics, The Principles of—Pubr., W. B. Saunders Co..... | 422 |
| Henry Mills Hurd, the First Superintendent of the Johns Hopkins Hospital—Pubr., John Hopkins Press..... | 35 | Typhus Fever, With Reference to the Serbian Epidemic—Pubr., Harvard Press..... | 342 |
| Hydrotherapy, An Epitome of—For Physicians, Architects and Nurses—Pubr., W. B. Saunders Co..... | 86 | | |
| Industrial Nursing—Pubr., Macmillan Co..... | 36 | | |
| Infant Feeding, Diseases of Nutrition—Pubr., Macmillan Co..... | 298 | | |
| Intestines and Lower Alimentary Tract, Diseases of—Pubr., F. A. Davis Co..... | 85 | | |
| Infant Feeding—Pubr., J. B. Lippincott Co..... | 421 | | |
| Infectious Diseases, Acute—Pubr., Macmillan Co..... | 421 | | |
| Keen's Surgery—Pubr., W. B. Saunders Co..... | 384 | | |
| Lung and Pleura, Treatment of Wounds—Pubr., W. M. Leonard..... | 297 | | |
| Medical Clinics of North America—Pubr., W. B. Saunders Co..... | 36, 296 | | |
| Medical Electricity, Roentgen Rays, and Radium—Pubr., W. B. Saunders Co..... | 491 | | |
| Metabolic Rate Determinations, Laboratory Manual of the Technic—Pubr., W. B. Saunders Co..... | 341 | | |
| Modern Italian Surgery and Old Universities of Italy—Pubr., Paul B. Hoerber, N. Y..... | 452 | | |
| Mustard Gas Poisoning, Medical Aspects—Pubr., C. V. Mosby Co..... | 35 | | |
| New and Non-Official Remedies—American Medical Association..... | 299 | | |
| Obstetrics—A Nurse's Handbook—Pubr., J. B. Lippincott..... | 341 | | |
| Oedema and Nephritis—John Wiley & Sons..... | 491 | | |
| Optimistic Medicine—Pubr., F. A. Davis Co..... | 341 | | |
| Pathology, A Manual of—Pubr., W. B. Saunders Co..... | 297 | | |
| Pathology, A Text-Book—Pubr., W. B. Saunders Co..... | 298 | | |
| Pharmacology, Laboratory Manual of—Pubr., F. A. Davis Co..... | 341 | | |
| Pharmaceutical Bacteriology—Pubr., P. Blakiston's Son & Co..... | 297 | | |
| Physiology and Biochemistry in Modern Medicine—Pubr., C. V. Mosby Co..... | 86 | | |
| Physiology, Principles of Human—Pubr., Lea & Febiger..... | 384 | | |
| Physiology for Students and Practitioners of Medicine, Advanced Lessons in—Pubr., W. B. Saunders Co..... | 86 | | |
| Physiology and Pathology of the Cerebrospinal Fluid—Pubr., Macmillan Co..... | 297 | | |
| Physiology for Students and Practitioners, A Text-Book—Pubr., W. B. Saunders Co..... | 296 | | |
| Poe, Edgar A.—A Study—Pubr., Bruce Brough, S. F..... | 452 | | |
| Psychiatry, Basis of—Pubr., J. B. Lippincott Co..... | 297 | | |
| Psychiatry, Manual of—Pubr., John Wiley & Sons..... | 36 | | |
| Radiography of the Chest—Pubr., C. V. Mosby Co..... | 341 | | |
| Rectum, Handbook of Diseases of the—Pubr., C. V. Mosby Co..... | 254 | | |
| Roentgen Interpretation—Pubr., Lea & Febiger..... | 384 | | |
| Skin Diseases, Common—Pubr., Macmillan Co..... | 255 | | |
| Sinuses of the Nose, Accessory—Pubr., J. B. Lippincott..... | 341 | | |
| Sternberg, George Miller—Pubr., American Medical Association..... | 296 | | |
| Surgical Clinics of North America—Pubr., W. B. Saunders Co..... | 341 | | |
| Surgical Clinics of Chicago—Pubr., W. B. Saunders Co..... | 36, 132, 296 | | |
| Unconscious, The—Pubr., The MacMillan Co..... | 491 | | |

BOOKS RECEIVED

| | |
|--|-----|
| Benign Stupors—Pubr., MacMillan Co..... | 491 |
| Cataract, a Treatise—Pubr., Vail-Ballou Co..... | 491 |
| Diabetes, Allen Treatment of—Pubr., W. M. Leonard..... | 343 |
| Dietetics, Practical—Pubr., A. F. Patten..... | 381 |
| Diseases of Children—Pubr., C. V. Mosby Co..... | 384 |
| Diseases of Skin—Pubr., W. B. Saunders Co..... | 491 |
| Diseases of the Skin—Pubr., C. V. Mosby Co..... | 491 |
| Evolution of Disease—Pubr., Lea & Febiger..... | 342 |
| Eye, Ear, Nose and Throat—Pubr., Year Book Co..... | 491 |
| General Pathology—Pubr., Paul Hoerber..... | 381 |
| General Surgery—Pubr., Year Book Co..... | 491 |
| Hygiene, Principles of—Pubr., W. B. Saunders Co..... | 384 |
| Infections of the Hand—Pubr., Lea & Febiger..... | 342 |
| Intestinal Flora—Pubr., Yale University..... | 342 |
| Mastitis—Pubr., Cloyd Head & Co..... | 384 |

State Society

County secretaries are reminded of the resolution passed by the House of Delegates at the annual meeting in May, 1921, that "the annual State society dues shall be fixed at \$8 per annum for the year 1922, an increase of \$1."

Prompt payment, and report of payment, insures full protection and all the rights and privileges at all times for all members in continuous good standing. Secretaries should be particular that all members understand that defense is afforded only to members whose dues are kept fully paid, in accordance with the following:

Medical Defense Rules, Section 3: "Dues must be paid to the secretary of the County Medical Society to which each member belongs, prior to the end of February of each year. Any member whose dues are not paid prior to March 1, and whose name is not reported as having paid his dues by the secretary of his County Medical Society is dropped from the list of members in good standing as of January 1 of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1 of such year to the date when his assessment is received by the State Society."

It would seem that, if there was a more general understanding of this rule, there would be fewer members allowing their dues to lapse until late in the year. We hope to have all members promptly paid and reported, and thus included in our roll of members in good standing for the full year of 1922.

County Societies

Alameda County (as reported by Dr. Pauline Nusbaumer, secretary)—The monthly meeting of the Alameda County Medical Association was held at the Alameda County Public Health Center, Thursday evening, October 17, 1921, and the following program, arranged by Dr. Reinle, was given: "The Handling of Hypertension Cases" was Dr. Eugene S. Kilgore's subject. Under prophylaxis, he brought out that "heredity is more important than commonly realized, and young persons with a family history of circulatory degeneration should be considered potential cases of hypertension. Experience in re-examining college students after ten years, suggests that the same is often true of young people with blood pressure at about the upper normal limits. Moderation in eating, drinking, exercise, and excitement, should be prescribed, but with care to secure good nourishment, good physical training, and to avoid anxiety neuroses. This is the time to eradicate focal infections."

In speaking of treatment he emphasized the fact that "in fully developed cases of hypertension it is important to separate those with good cardiac compensation from those with beginning decompensation. The former may take comparatively liberal exercise, which, however, is graduated to avoid sudden strain; the latter need complete rest, and frequently digitalis, to be followed by great care in grading exercise. Bleeding is often of value here, but more so in acute decompensation. Pressure-lowering drugs offer no permanent advantage; and in general, no pressure-lowering measures, except correction of faulty habits, are desirable."

Dr. Thos. Addis, in his paper on the "Relation Between Hypertension and Bright's Disease," said that "in the diagnosis of hypertension the condition under which the pressure observations are made is all important. In a large series of observations on normal individuals, the average systolic pressure was 99 in the early morning before they had risen from bed, while during the day the average systolic pressure was 127. The variability of pressure measurements is less in the early morning, under conditions similar to those observed for measurements of basal metabolism. While only 1 in 1000 normal individuals have a systolic pressure as high or higher than 133 under basal conditions, there is 1 out of every 23 normals who has a pressure as high or higher than 160 under daytime conditions.

"In the diagnosis of Bright's disease two things are essential, a method by which the nature of the lesion and a method by which the extent of the lesion can be determined.

"The blood pressure level and the nature and extent of the renal lesion, in a series of cases covering all varieties of Bright's disease, was compared. The conclusion was drawn that a direct relation between hypertension and Bright's disease was present only in acute renal decompensation. In other cases the relationship is of the nature of an association and not of causal relation."

Dr. Stewart Irwin opened the discussion of Dr. Kilgore's paper. In the general discussions which followed, among those who participated were Drs. C. H. Miller, M. L. Emerson, Alexander, MacLean, W. O. Smith, Crosby, Sweet, O'Connor, Nutting, Gilbert, McVey and R. T. Sutherland.

There was a special meeting of the association on the 20th, when Dr. Isaac Jones, author of "Equilibrium and Vertigo," was the speaker. He demonstrated some of his work by means of moving pictures. Professor Maxwell, Associate Professor of Physiology at the University of California, also spoke.

The annual banquet of the association was held at the Hotel Oakland, October 27.

Kern County (as reported by Dr. Edward R. Guinan)—The regular monthly meeting of the society was held on the evening of October 21 at the Kern General Hospital, Bakersfield, with eight members and one guest present and thirty-one members absent.

Dr. McNamara was the speaker of the evening, reading a paper on Dysuria in Women. Doctors Buchner and Compton led in the discussion. The business meeting was followed by a social meeting under the supervision of Dr. Joe Smith.

Los Angeles County (as reported by Dr. Harlan Shoemaker, Secretary)—The first regular meeting of the new fiscal year of the Society was held in conjunction with the Harbor Branch in the Hotel Virginia at Long Beach and was exceedingly well attended.

The scientific program in the afternoon consisted of:

Some unusual manifestations of syphilis with microscopic sections. Willard Stone, M. D.

Some practical considerations regarding glaucoma.

J. H. Kellar, M. D.

Remarks on the pathogenesis and treatment of

essential epilepsy. Illustrated with lantern slides. I. Leon Meyers, M. D.

This paper elicited an interesting discussion by Dr. Cecil Reynolds, who disagreed on the treatment of this condition with Dr. Meyers, maintaining that many of these cases were surgical and citing operative cases from his own practice in which good results and marked benefit has been obtained.

Post-operative indication for the use of physiotherapy. F. H. Mikels, M. D.

After dinner an open meeting was held at which Celestine J. Sullivan, executive secretary of the League for Conservation of Public Health, delivered an impressive review of the splendid work of the League during the past year and a full statement of its important problems confronting us. Following Mr. Sullivan, Dr. W. E. Musgrave, secretary of the Medical Society of the State of California and chairman of the Committee on Medical Economics Education and Hospitals of the League, delivered a timely address on hospital betterment, in which particular stress was laid on the number of stock-selling hospital schemes which were being presented to physicians at this time, and the probable ultimate failure of most of them to be of benefit to the sick of the community or to the attending physician. This warning came at a particular appropriate time, as the need for additional hospital facilities in Los Angeles County is so great that, like the proverbial drowning man, we are all tempted to grasp at straws. It is said that the U. S. Government has made overtures toward purchase of one or more hospitals in Los Angeles with a view to using them for rehabilitation purposes. It is earnestly hoped that none of these deals will be consummated, as the hospital needs of the civil population of Los Angeles are becoming greater with every passing month.

On October 20 the regular Scientific meeting of the Society was held in the auditorium of the new Pacific Mutual Building, Sixth and Grand avenue. Program:

Ultra-violet light in the treatment of varicose ulcers. Samuel Ayres, Jr., M. D.

Case of Richter's partial enterocele. J. Lee Hagadorn, M. D.

Results in interposition operations for procidentia and prolapse based on a series of 118 cases in the gynecological clinic of Johns Hopkins Hospital. Illustrated with lantern slides. H. N. Shaw, M. D.

The action of radiation on tonsillar and hypertrophied lymphoid tissues. Albert Soiland, M. D.

The use of radium in cancer. Illustrated with lantern slides. Rex Duncan, M. D.

The following resolution of the Board of Councillors of the Los Angeles County Medical Society was ordered printed in the last Bulletin:

Whereas, It is evident that there is a widespread popular belief that the members of the medical profession are profiting by the present Prohibition Enforcement Law, and are lending themselves to a loose and unprofessional policy of prescribing, either for mercenary reasons or to accommodate their friends; and

Whereas, While we believe that by far the greater majority of our profession are honorable, ethical and actuated by purely professional motives, in this as in other matters, yet we know that there is a small minority who are not always so actuated; therefore be it

Resolved, That we, as representatives of the medical profession of the city and county of Los Angeles, go on record as absolutely opposed to the prescribing of alcoholic liquors for other than strictly therapeutic purposes, and that we are opposed to any doctor's prescribing said liquors except after a thorough personal physical examination of the patient, said examination to be made at each and every time that such a prescription is written and by the doctor himself. Any member of this

Society who may violate this rule shall render himself liable to trial and expulsion from the Society for unethical conduct; and be it further

Resolved, That it is our definite belief, founded on observation and experience, that very rarely, if ever, are alcoholic remedies necessary in the practice of medicine, and that nearly always, if not quite always, other remedies can be used with equal efficacy; and be it further

Resolved, That the Los Angeles County Medical Association does not go on record as being either opposed to or in favor of prohibition.

Signed: CHARLES C. BROWNING,
EDWARD M. PALLETTE,
Committee.

This resolution marks a decided awakening of a civic conscience which has met with the general approval of the lay public.

Obituary—Dr. A. J. Scott

Organized medicine and the State of California suffered an irreparable loss in the death of Dr. A. J. Scott, of 905 South Ardmore avenue, Los Angeles, October 22, 1921, at Sacramento, California.

Dr. Scott was born in Missouri sixty-three years ago, and had been a resident of Los Angeles for nineteen years. He was in active practice, with offices in the Auditorium Building for many years, and of late had devoted much of his time to civic affairs, in which his activities were uniformly for the public good.

As a member of the Chamber of Commerce he took an active interest in the problems of harbor development, and as a member of the Chamber's Reception Committee his death will seem a personal loss to many notable visitors to Los Angeles in years past.

He was appointed a member of the State Board of Medical Examiners two years ago by Governor Stephens, and while on a trip to Sacramento, engaged in this duty, he expired from an acute attack of angina pectoris.

The Society desires to convey to his sorrowing widow and children, sincere sympathy and profound regret at the death of this good friend of ours.

The funeral services, conducted at the residence by Dr. Cortland Meyers of Mount Temple, Boston, Mass., an old friend of Dr. Scott's, were largely attended by the profession.

MICHAEL CREAMER.

Merced County (as reported by Dr. Brett Davis, secretary)—The regular meeting of the Merced County Society was held at the office of the secretary on November 3 with seven members present and twelve absent. Dr. Louis Clive Jacobs of San Francisco gave an interesting talk illustrated with lantern slides on Affections of the Posterior Urethra and Bladder. Mr. Hartley F. Peart, general counsel for the State Society, gave a talk on the Indemnity Defense Fund, and Mr. Celestine J. Sullivan, executive secretary of the League for the Conservation of Public Health, gave an outline of the activities of the league.

Orange County (as reported by Dr. C. R. Lane)—The regular meeting of the Orange County Hospital on Tuesday evening, November 1, Dr. Walter V. Brem of Los Angeles addressed the society in regard to the work being done by the League for the Conservation of Public Health, and suggested that a physician be appointed in each end of the county to act in conjunction with the Los Angeles branch of the League. Dr. Johnston of Anaheim was appointed to represent the north end of the county, and Dr. Wehrly the south. Dr. Alfred E. Gallant of Los Angeles presented a very interesting paper on Potts Fracture. End Results of some cases of Infantile Paralysis and Tuberculosis of the Spine. Some of the doctor's patients were sent to the Orange County Hospital, and presented as a very instructive clinic.

Riverside County (as reported by Dr. Thomas A. Card, secretary)—The regular meeting of the Riverside County Medical Society was held October 10, 1921, at 8 p. m., Chamber of Commerce rooms. Vice-President Paul E. Simonds in the chair.

1. Hospital Standardization. Dr. Edw. T. Dillon, Los Angeles, Cal.

2. Organizing the Profession and the Hospital for a County-wide Health Program. Dr. C. Van Zwalenburg, Riverside, Cal.

Dr. Dillon illustrated his talk by exhibiting sample hospital records on the screen, explaining in detail the keeping of the record. He spoke of the follow-up system whereby the patient reported his condition following operation or treatment. At the monthly staff meetings all deaths occurring in the hospital were investigated as to the cause of death. The system of Hospital Standardization required more careful diagnostic work, resulting in a greater number of accurate pre-operative diagnoses and a lowered post-operative mortality rate.

Dr. C. Van Zwalenburg called attention to the wave for better health which is sweeping the country, in an effort to preserve the life and health of the individual.

In general, the movement is under the leadership of social workers and lay people, with no conception of the medical problem involved. The medical profession must prepare to direct this community work in its large program of preventive medicine.

He suggested the organization of the County Medical Society make the hospital the clearing-house for diagnosis. The doctors in the outlying towns to bring their patients to the hospital for laboratory studies and consultation, as needed. The diagnosis made, the patient is still the patient of the doctor who brought him to the hospital, and is his for treatment by himself or subject to assignment.

He showed the importance of clinics in connection with the hospital, extending into the communities as weekly, bi-weekly or monthly clinics in the various branches of medicine. He stressed the educational side of the health clinic.

Each community should organize its welfare organization, which would take care of its own needy, its free patients and part-pay patients. These centers to expand, taking on other phases of welfare work as the foreign, education and relief work of the City Home League.

The important thing to do is to make a study of the health and welfare work and keep our hands upon it. Much unsatisfactory work is being done by all kinds of poorly guided organizations all over the county. This work is new, but it has come to stay, and the logical guiding hand is the medical profession.

A chart was displayed which showed in a graphic way the relation between the community hospital, social agencies, health, education and the medical profession.

The secretary reported the withdrawal of members from the society as follows: Dr. W. D. Rolph, who has moved to Richmond, California; Captain Eugene G. Reinartz, Municipal Field, Eugene, Oregon; Dr. John Paul Frey, Los Angeles; Dr. A. J. Hill, Salem, Oregon.

San Diego County—The regular meeting of the San Diego County Society was held at the Society rooms on November 8. Dr. Crabtree opened the program with a paper on "Fractures of the Skull." He reported on 267 fractures which he had seen personally, giving a very interesting and instructive discussion, speaking also of the treatment. This paper was discussed by Doctors Maghy and Burger. Dr. Pickard gave a paper on "The Clinical Value of Basal Metabolism." The paper was illustrated by lantern slides and charts which brought out the particular value of this diagnostic

method in cases of thyroid disease and disfunction. The paper was discussed by Doctors Kocher, Kinney and Burger. The next paper was by Dr. Charles W. Brown, who took for his subject "Secondary Radical Mastoid Operation." The final paper was by Dr. Durr, who spoke on "Renal Diabetes." Dr. Durr mentioned the various types of glycosuria and gave a valuable discussion on the diagnosis and methods of treatment used. Dr. Kocher, who discussed the paper, emphasized the necessity for differential diagnosis between the renal and other types of glycosuria and particularly the differences in treatment.

San Francisco County (as reported by Dr. LeRoy Briggs, secretary)—During the month of October, 1921, the following meetings were held:

Tuesday, October 11—General Meeting

1. Report of matters of general interest to the profession. J. H. Graves for W. E. Musgrave.
2. Precancerous lesions. A. R. Kilgore.
3. Treatment of pelvic malignancy. F. W. Lynch.
4. Results of cancer surgery. Emmet Rixford.
5. X-ray and radium treatment of cancer. Laurence Taussig.

Tuesday, October 18—Committee on Industrial Medicine

1. Fractures about the shoulder region in industrial cases. W. B. Coffey.
2. Injuries, other than fractures, about the shoulder region. A. L. Fisher.

Tuesday, October 25—Section on Eye, Ear, Nose and Throat

1. Practical application of neuro-otology with report of cases. F. C. Lewitt.
2. Further statistics on radium in the treatment of cataract. W. S. Franklin and F. C. Cordes.

They reported, in part, as follows:

To date 106 cases have been treated. Of these 84 per cent showed improvement. We have recorded these according to the patient's vision at the initial visit.

- .1 vision or less—68% showed improvement, the highest vision obtained being .3.
- .2 vision—66% showed improvement; 33% had .5 vision.
- .3 vision—58% improved. Of these 25% obtained a vision of .5 or better.
- .4 vision—84% improved; 3 cases became rapidly worse.
- .5 vision—92% improved; the final vision in 6 cases being .8 or better.
- .6 vision—100% improved; 20% obtained normal vision.
- .8 vision—100% improved; 30% of these had a vision of 1.0, the remainder 1.0?

1.0? or better—6 such cases treated; 4 improved to 1.5, one remained at 1.0? and one became slightly worse.

Conclusions

- (1) Radium is not applicable in cataract cases where the vision has been reduced below .4, excepting in unoperable cases.
- (2) Irrespective of the radium, a few cases have apparently become rapidly worse.
- (3) Some cases were not influenced by radium.
- (4) Three cases came to operation and the radium treatment did not cause operative complications.
- (5) Cases must be refracted to obtain maximum vision, as refraction changes during radium treatment.

3. X-ray diagnosis of sinus disease. W. E. Chamberlain.

Dr. Chamberlain said: "In order to obtain maximum effectiveness with this method, it is essential (1) to base all examinations upon stereoscopic projections; (2) to have patients radiographed in sitting position, not lying down; (3) to interpret films, carefully and expertly, in terms of anatomy, physiology and pathology.

"The advantages of the stereoscope include free-

dom from confusion through artefacts or superimposed densities, ready localization of densities, less dependence upon exactness of the technician's angles, and three-dimensional study of the visualized structures.

"The reason for using the sitting position is the occasional demonstration of a fluid level, where the prone position would give a spread-out density.

"In the last analysis, the rhinologist himself should be best able to interpret sinus radiographs. Until he has become familiar with the method, he may rely upon the medical roentgenologist, demanding of the latter evidence of a working knowledge of the anatomy, physiology and pathology of the sinuses."

Santa Barbara County (as reported by Dr. H. L. Schurmeier, secretary)—The society met at the Cottage Hospital, October 24, with fourteen members present and forty-two absent.

The paper of the evening was presented by Dr. A. B. Cooke of Los Angeles, who spoke at length on the "Goiter Problem." He classified goiter as simple and toxic, the latter including the exophthalmic and toxic adenoma. He gave a summary of symptoms and treatment applied in each type. A general discussion followed. Dr. Ullman gave an interesting and detailed report of the Washington meeting of the American Roentgen Ray Association, followed by a general discussion.

Santa Clara County (as reported by Dr. J. L. Pritchard, secretary)—The society met at the U. S. P. H. S. Hospital, Palo Alto, October 19, with fifty members present and fifty-five absent.

Dr. Gregory, secretary of the San Mateo County Society, was the guest of the evening. The program consisted of a paper on "Rehabilitation of the Ex-Service Man," by Dr. J. M. Wheate, and "So-Called Shell Shock," by Dr. Paul Bowers.

On November 30 a dinner dance was held at the Hotel Vendome, San Jose, which was the social event in medical circles of the year, the membership being present almost to a man.

San Joaquin County (as reported by Dr. Dewey R. Powell, secretary)—The regular meeting of the San Joaquin County Society was held October 14 in the Women's Building of the Stockton State Hospital, Dr. L. R. Johnson presiding. There were thirty-one members present and forty-four absent, with Superior Judges Plummer, Buck and Young as guests. The program was presented by the doctors of the hospital staff as follows: Dr. Clark, Dr. Conzelman, Dementia Precox; Dr. McCoskey, Manic Depressive Psychoses; Dr. Sanderson, General Paralysis; Dr. Marnell, Senile and Arteriosclerotic Psychoses; Dr. McLeish, Criminal Insane—case of General Paralysis, Dementia Precox and Borderline Conditions; Dr. Smythe, Treatment of Physical Conditions in Mental Patients; Dr. Williamson, Laboratory Work.

A special meeting on Hospital Betterment was held on October 21, when Dr. W. E. Musgrave, secretary of the State Society, and Mr. Celestine J. Sullivan, executive secretary of the League for the Conservation of Public Health, were the principal speakers.

Stanislaus County (as reported by Dr. E. F. Reamer, secretary)—The October meeting was held at the Modesto Hotel. The meeting was opened by a get-together banquet. There were twenty-three members and two guests present and fifteen members absent.

Dr. Alfred C. Reed of San Francisco discussed the Diagnosis and Treatment of Amebic Colitis. Dr. John Rehfish of San Francisco discussed the cancer problem, with special reference to the program for cancer week. Drs. Thomas F. Bowles, Lloyd D. Mottram, Walter A. Smith, John A. Cooper and E. F. Hagedorn were elected members.

Notices

LANE MEDICAL LECTURES

Dr. L. Emmett Holt, Emeritus Professor of Pediatrics of the College of Physicians and Surgeons of Columbia University, New York, will deliver the Lane Medical Lectures in the Stanford University Medical School, San Francisco, on December 5 to 10, 1921. The lectures will take place daily at 8:15 p. m. The topics for the lectures will be as follows:

- I. The general subject of nutrition—its importance in relation to health and growth, to progress in school, to resistance to infection and in the management of acute and chronic disease.
- II. The food requirements of the healthy child after infancy.
- III. The function in diet of fat, protein, carbohydrate and mineral salts, and the conditions which determine the amounts needed.
- IV. Vitamins—their function in nutrition and the new point of view which they have given regarding food values.
- V. The practical problem of improving the nutrition of children, including the prevention and treatment of malnutrition.

Dr. Holt will also give a clinic on Children's Diseases on Wednesday, December 7, at 11:30 a. m., at the Medical School.

Dr. Clemens v. Pirquet has accepted an invitation from the University of California Medical School to come to San Francisco and give a series of lectures.

Dr. Pirquet's contributions to medicine, the great assistance he has rendered to the American Relief Administration, and his familiarity with America and its language make his acceptance of this invitation particularly pleasing to physicians and others interested in medicine.

The dates are not definitely arranged, but it is probable that the lectures will be given sometime in January. Details of time and place will be announced later.

SECTION ON OBSTETRICS AND GYNECOLOGY FOR THE COMING STATE MEETING

We again call attention to the fact that the synopsis of papers to be presented at the next meeting must be sent in now so that we can arrange our program. Those who wish to participate actively by presenting a paper will please signify by writing to the secretary at once and present their synopsis before January 1, 1922.

The "Stenographer Fund" will need a lot of boosting. Five dollars from those who are interested will help to materialize our ambition to make permanent records of our meetings.

(Signed) L. A. EMGE, Secretary,
Stanford University Hospital,
San Francisco, California.

The next meeting of the Committee (Section on Industrial Medicine) of the San Francisco County Medical Society will take place on January 17, 1922. The subjects to be discussed are:

1. The Free Choice of Physicians in Industrial Accident Cases. Arguments for and against.
2. Discussion of the Fee Schedule:
 - (a) The present fee schedule and interpretation of same.
 - (b) Suggested amendments to same.
 - (c) Rebates and contract practice.

All members of the State Medical Society desiring to take part in this program, either by reading a short paper or participating in the dis-

ussion, will kindly communicate as soon as possible with

W. H. WINTERBERG, Chairman,
516 Sutter Street, San Francisco.

California Academy of Medicine (as reported by Dr. E. J. Best, secretary)—A meeting of the California Academy of Medicine took place at a dinner on the evening of October 22 at the Fairmont Hotel, with Dr. Hewlett presiding as acting president. There were fifty-seven members present. Doctors Alonzo Taylor and Carl Alsberg were the guests of the evening. Dr. Taylor made no formal address, but remarked that he was glad to be back among old acquaintances. Dr. Alsberg spoke on the plans of the National Food Institute, which is located at Stanford University through the generosity of the Carnegie Institute. Dr. Alsberg spoke of the problems of production, distribution and consumption of wheat as an example illustrating what the national food administration has as its problem. It was shown that a decision was requested regarding the economy of using 60 per cent flour as against 90 per cent flour, taking into consideration the country's population in place of the individual value of said flour. Dr. Alsberg then spoke in general regarding a number of things the institute does not intend to do, such as food analysis, metabolism experiments, etc. The present plan involves a study of the production, distribution and consumption of foods, with a tendency toward the sociological aspect of nutrition.

The Journal of Orthopaedic Surgery, the official organ of the American Orthopedic Association and of the British Orthopaedic Association, announces that in January it will change from a monthly to a quarterly publication. In issuing the Journal every three months it is planned to provide the readers with fully as much, or even more, reading matter than under the present arrangement, and it is hoped that the Journal may be made more valuable and interesting. The Journal will continue to be published in Boston under the existing management.

Book Reviews

The Unconscious. By Morton Prince, M.D., LL.D., second edition, 654 pp., New York; The Macmillan Company, 1921.

To the first edition, unchanged, have been added four chapters on "the structure and dynamic elements of human personality" and a consideration of the psychogenesis of a specific instance of multiple personality.

The many readers of Dr. Prince will welcome this amplification of his well known introduction to abnormal psychology. It is indispensable to those beginning to explore the dusky regions of the neuroses. In these days of Freudian extravagances it is a relief to find these regions approached with such intellectual calm and poise. E. W. T.

Oedema and Nephritis. By Martin H. Fischer, Third ed., New York: John Wiley and Sons, Inc. 1921.

A decade of clinical observation has given overwhelming proof of the correctness of the author's views regarding water absorption by protoplasm. Therefore it is not surprising to find that the third edition of this valuable work discloses no changes in the original conception of the problem, but merely adds more evidence to that already presented in previous editions.

The author has added some observations on the swelling of aleuronat, which, because it is a mixture of several proteins, behaves more like protoplasm under similar conditions. The conception of the hydrophibi colloid has been broadened by more detailed study. Strong emphasis

is placed on the "iron-relationship between diseases of the kidney and so-called signs, symptoms and complications of nephritis." This part of the author's work is a great contribution to independent medical thought and has given the profession a valuable point of view. There is added a discussion of the relation between focal infection and systemic disease in which the purely infectious origin of vascular disease is presented. Finally a group of clinical cases are discussed in which the application of the writer's views are demonstrated.

The fact that a call was made for this edition shows there are a number of independent and open-minded thinkers in the field who have succeeded in overcoming the prejudice of the orthodox preaching of authorities. It is, indeed, a sad commentary on the type of minds of our so-called leaders in medical thought that, although the views of the author have been condemned for a decade, yet, these same authorities are now incorporating in their discussions these views as "self-evident truths, the original sponsor for which needs never to be mentioned."

M. B.

Medical Electricity, Roentgen Rays and Radium, with a practical chapter on Phototherapy. By Sinclair Tousey, M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Third edition. Thoroughly revised and greatly enlarged. Octavo of 1337 pages with 861 practical illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company. 1921. Cloth \$10 net.

A large volume of 1350 pages with 861 illustrations covering the physics of electricity, the use of currents in diagnosis and treatment and the production and use of X-rays, with a short section on radium and its uses. As a whole the book is very complete from the rudimentary principles of electricity to the complicated technique of radio-therapy. Perhaps too much space is given to the description of apparatus and tubes which now have only a historical interest, but this adds to its value as a book of reference.

L. B.

Books Received

Books received are acknowledged in this column, and such acknowledgement must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Benign Stupors. A study of a new manic-depressive reaction type. By August Hoch, M.D., late director of the psychiatric institute of the New York State Hospitals, Ward's Island, New York; late professor psychiatry, Cornell University Medical College, New York. New York: The Macmillan Company. 1921. Price, \$2.25.

A Treatise On Cataract. By Donald T. Atkinson, M. D. Illustrated. New York, The Vail-Ballou Company. 1921.

A Treatise on Diseases of the Skin. For advanced students and practitioners. By Henry W. Stelwagon, M.D., Ph.D., Ninth edition with the assistance of Henry Kennedy Gaskill, M. D., with 401 text illustrations and twenty-nine colored and half-tone plates. Philadelphia and London: W. B. Saunders Company. 1921. Price, \$10.

Applied Psychology for Nurses. By Mary F. Porter, A. B., graduate nurse; teacher of applied psychology, Highland Hospital, Ashville, N. C. Philadelphia and London: W. B. Saunders Company. 1921.

The Spleen and Some of Its Diseases. Being the Bradshaw Lecture of the Royal College of Surgeons of England, 1920. By Sir Berkeley Moynihan, with thirteen full page diagrams. Philadelphia and London: W. B. Saunders Company. 1921. Price, \$5.

Principles of Medical Treatment. By George Cheever Shattuck, M.D., A.M. Fifth revised edition with contributions by various authors. Boston: W. M. Leonard, Inc., Publishers. 1921.

A Textbook of Surgical Anatomy. By William Francis Campbell, A. B., M. D., F. A. C. S. Third edition, revised with 325 original illustrations. Philadelphia and London: W. B. Saunders Company. 1921.

Diseases of the Skin. By Richard L. Sutton, M. D., with 969 illustrations and eleven colored plates. Fourth edition, revised and enlarged. St. Louis: C. V. Mosby Company. 1921.

Surgical Clinics of North America. August, 1921, Volume 1, Number 4, Chicago Number. Published bimonthly. Philadelphia and London: W. B. Saunders Company. Price per year, \$12.

Medical Clinics of North America. July, 1921, Volume 5, Number 1, Chicago Number. Published bimonthly. Philadelphia and London: W. B. Saunders Company. Price per year, \$12.

General Surgery (Practical Medicine Series). Edited by Albert J. Ochsner. Volume 2, 1921. Chicago: The Year Book Publishers. Price, \$2.50.

Eye, Ear, Nose, and Throat (Practical Medicine Series). Edited by Casey A. Wood, Albert H. Andrews, and George E. Shambaugh. Volume 3, 1921. Chicago: The Year Book Publishers. Price, \$1.75.

Department of Pharmacy and Chemistry

Edited by FELIX LENGFELD, Ph. D.

Help the propaganda for reform by prescribing official preparations. The committees of the U. S. P. and N. F. are chosen from the very best therapeutists, pharmacologists, pharmacognosists and pharmacists. The formulae are carefully worked out and the products tested in scientifically equipped laboratories under the very best conditions. Is it not plausible to assume that these preparations are, at least, as good as those evolved with far inferior facilities by the mercenary nostrum maker who claims all the law will allow?

"Iodine."—Psychologists should study why iodine is made the basis of so many fake preparations foisted upon the medical profession. There certainly are enough iodine preparations in the U. S. P. and N. N. R. to supply any therapeutic want, and yet almost every report of the A. M. A. Council contains the name of some new iodine preparation which has been examined and found wanting. Most of these preparations claim to have all of the good and none of the bad qualities of iodine. Unfortunately, most of them contain very much less iodine than stated in the advertisement. It would not be so bad if they contained the quantity specified, for then the patient would suffer only in purse, whereas now he pays a high price for something he does not get and does not get what he needs.

"Proteogens in Syphilis."—C. F. Engels, Tacoma, Wash., reports that two persons came to him who had been treated with Proteogen No. 10 for almost a year. Both patients were four plus to the Wassermann test. He writes: "The tragedy of the whole thing is that here are two people, at least, who have been deprived of adequate treatment for a year, spending their money for ignorance and fakery, getting worse instead of better, and all because of the cupidity of these people (the promoters of the Proteogens) and their success of putting over on some of the weak sisters of the profession this pseudo-scientific bunk." (Jour. A. M. A., June 4, 1921, p. 1593.)

Considering the results obtained with Arsphenamine, Neo-Arsphenamine, Mercury and Iodides, there seems to be no excuse for depriving the syphilitic of these remedies. A number of arsenic preparations have been advertised as substitutes for Arsphenamine, Neo-Arsphenamine and Silver-Arsphenamine. Several of these have retracted their claims when pressed by the Council.

The Arsphenamines are probably not the last word in anti-syphilis remedies, but no substitute should be used until it has been thoroughly investigated in the laboratory and under the very best possible conditions. The profession at large may feel certain that anything which is a real improvement upon the Arsphenamines will require little advertising, but will have its merits soon written in letters so large that "he who runs may read."

"Aspirin Bayer."—Physicians should order Acetylsalicylic Acid, as such, and not order it under the popular name, "Aspirin," as this name means that "Aspirin Bayer" must be supplied, even though a physician desires some other product.

"Disappointments in Endocrinology."—In the current enthusiasm for so-called endocrinology, medicine may become humiliated by the drift toward a sort of pseudoscience, bolstered up with meaningless words and unfounded assumptions. Stewart deserves the thanks of the medical profession for the fearless and critical manner in which he has questioned (*Endocrinology*, vol. 5, p. 283, May, 1921) much of the verbal rubbish that goes under the designation of the endocrinology of the suprarenals. There is something stinging, yet deserved, in its implied rebukes, in the words of Dr. Stewart: "On the whole," he says, "it must be granted that hitherto the attempts made to evoke in animals a well-marked syndrome, characteristic of adrenal deficiency, have been singularly disappointing. The contrast is great when we leave this desert, where the physiologists and experimental pathologists have wandered, striking many rocks but finding few springs, and pass into the exuberant land of clinical endocrinology, flowing with blandest milk and honey, almost suspiciously sweet." How much longer will the medical profession continue to merit such criticism? Just so long as the profession continues to give serious consideration to pseudoscientific rubbish promulgated by the exploiters of organic extracts. (*Jour. A. M. A.*, June 11, 1921, p. 1685.)

A bad feature of the proprietary mixed gland products now presented to the medical profession is that the public has learned that they are being used and has begun to dose itself. It would surprise many physicians to learn how many people come into the drug store and ask for these, because they have been prescribed for a friend or recommended by a friend. Before these mixed products became so popular thyroid tablets were the only ones in popular demand.

There seems little chance that the average adult, living under present conditions in the United States, will suffer from any deficiency of vitamins. He probably swallows in the course of an ordinary meal enough to last him a week. However, vitamins, like relativity, appeal to the public taste for the mysterious, and the patent medicine maker, knowing this, has begun to recommend vitamins for all kinds of ailments. There is a silver lining to this cloud. Vitamine tablets probably do no harm if they do no good.

"Oxyl Iodide," said to be the hydroiodide of cinchopen, has been refused admittance to the N. N. R. on the ground that it has no advantage over mixtures of cinchopen and iodides. Cinchopen and iodide are seldom indicated at the same time, and when they are, a physician can regulate his dose of each by prescribing as much of each as he wants.

"Chaulmoogra Oil in Leprosy."—There seems to be little doubt that the good results from Chaulmoogra Oil in leprosy are due to the presence of a number of chemically related acids, any one of which seems efficacious. The ethyl esters of these acids, given hypodermically, seems to hold the disease in check and perhaps cure it. No nauseating oil need be given by mouth. It is possible that the oil would have the same effect if taken by

mouth, but it is difficult to get the patient to take enough owing to the nausea produced.

"Procaïn Dermatitis" seems not infrequent and is extremely annoying. "The treatment is palliative and includes removal of the etiologic factor." (*Jour. A. M. A.*, July 30, 1921, p. 395.)

"Iron and Arsenic in Anemia."—Experiments at the Geo. William Hooper Foundation, in the University of California Medical School, seem to indicate that neither iron nor arsenic is of any use in simple anemia. Most physicians will insist that both iron and arsenic are useful in many cases of anemia. The simple anemia studied was produced by bleeding the animal. The clinician sees little or none of this kind of anemia. It is almost certain that iron and arsenic do relieve the conditions which produce clinical anemia and are useful therapeutic agents.

"Salicaine."—Salicylic alcohol is now marketed under the name of Salicaine by the Calco Company. It is apparently a much better local anesthetic than Benzyl alcohol, its parent substance, and is only one-fifth as toxic as procaine.

New Members

Benziger, Martin, San Francisco; Housman, N. S., San Francisco; Derbyshire, Albert L., San Diego; Roth, Earle F., Geyserville; Lumsden, Arthur C., Petaluma; Barnes, Wm. H., Berkeley; Chamberlain, Edwin F., San Diego; Geisweit, W. H., San Diego; Pettit, Albert V., San Francisco; Seaforth, Edgar A., San Francisco; Pettis, Zilda T., San Francisco; Ullman, H. J., Santa Barbara; Schmidt, E. C., Santa Barbara; Brush, Nathaniel H., Santa Barbara; Kay, Guy L., Placentia; Parrett, A. S., Brea; Munch, Louise L., Anaheim; Martell, Bessie S., Santa Ana.

Deaths

Condory, Vilmas. Died in San Francisco, October 30, 1921. Was a graduate of the University of Buda Pesth, Hungary, 1869. Licensed in California, 1897. Age 84.

Roberts, Wm. Henry. Died November 9, 1921. Was a graduate of Hahnemann Medical College, San Francisco, 1884. Licensed in California, 1884.

Roche, Thos. B. Died in San Francisco, October 26, 1921. Was a graduate of the University of California, 1898. Licensed in California, 1898.

REMEMBER THE DATES OF THE
STATE MEETING
MAY 15, 16, 17, 18, 1922
YOSEMITE VALLEY

PATRONIZE THE CALIFORNIA
STATE JOURNAL ADVERTISERS
THEY HELP TO SUPPORT YOUR
JOURNAL



M.E.C.

BOSTON MEDICAL
SEP 20 1921

California State Journal of Medicine

ISSUED MONTHLY OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Vol. XIX, No. 1

JANUARY, 1921

\$1.00 a Year

CONTENTS

| | | | | | |
|--|----|---|----|--|----|
| Notice | 1 | Pyelitis and Pyelonephritis, Some Observations from the Clinical and Laboratory Findings in. By L. J. Roth, M. D. | 16 | Ureteral Transplants for Obstruction of the Lower Ureter. By Robt. V. Day, M. D. | 21 |
| Editorials | 1 | Improved Incision for the Fredet Rammstedt Operation. By Edmund Butler, M. D. | 17 | Spinal Defects and Pain Occurring in Relation to Ocular Disease. By Lloyd Mills, M. D. | 23 |
| Special Articles | 6 | Genito-Urinary Tract Associated with Active Pulmonary Tuberculosis. By Anders Peterson, M. D. | 18 | Arthritis, A Group Study of 300 Cases. By M. C. Harding, M. D. | 26 |
| Problems of Enforcement of the Medical Practice Act..... | 6 | Vesico-Intestinal Fistula. By L. C. Jacobs, M. D. | 19 | Bronchial Asthma, Etiology of 150 Cases. By George Piness, M. D. | 28 |
| The Present Nursing Situation. By W. W. Roblee, M. D. | 8 | | | | |
| A Plea for Better Fracture Results. By George J. McChesney, M. D. | 11 | | | | |
| Practical Points in Using Thomas Splints. By Sterling Bunnell, M. D. | 13 | | | | |

(Contents continued on page IX)

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

FRED I. LACKENBACH

BIOLOGIC DEPOT

BACTERIOLOGICAL · SEROLOGICAL
AND CHEMICAL WORK

JANUARY 1921 CONTENTS

| | | | |
|---|-----|--|-----|
| Genuine Luer Syringes, Their Manufacture in the United States. By Becton Dickinson..... | iii | German Salvarsan and Neosalvarsan Now Being Manufactured in the United States. By Herman A. Metz..... | ii |
| Eccentric Tip on Large All-Glass Syringes Very Popular. Outlet on Lower Margin Instead of Center. By A. S. F. Distributor..... | iii | Solution Arsphenamine-Lowy. A Ready-to-Use Solution of Arsphenamine With Complete Injection Outfit. Licensed and Tested. By Dr. Otto Lowy..... | iii |
| Glass Barrel or Plunger Unbroken Replaced With New Luer Syringe. By Fred I. Lackenbach..... | iii | Biologic Products, Their Perishability, Importance of Proper Storage and Handling. By Fred I. Lackenbach..... | iii |
| Arsphenamine and Neorsphenamine (Salvarsan and Neosalvarsan) Now Available in Any Quantity. Tested. By U. S. Public Health Service..... | ii | Intravenous Injections. The Importance of Using Freshly Double-Distilled Water and Properly Sterilized Apparatus..... | ii |
| Arsphenamine and Neorsphenamine (Produced by Dermatological Research Laboratories, Phila.) Giving General Satisfaction. By Jay Frank Schamberg and Collaborators..... | ii | Serums, Antitoxins, Vaccines; Authoritative Information on Their Indications and Uses. By Fred I. Lackenbach..... | ii |

SCIENCE

INDUSTRY

908 BUTLER BUILDING
SAN FRANCISCO

CABLE ADDRESS "SERVMS S.F." · TELEPHONE SVTTER 3122

NEW PRICE SCHEDULE Effective November 10, 1920.

Special Quotations to Public Hospitals and Free Clinics on application.

Neosarsphenamine (Metz)

Neosalvarsan—Metz

| | |
|-------------------------|-------------------------|
| .90 Ampule . . . \$2.00 | .45 Ampule . . . \$1.25 |
| .75 Ampule . . . 1.75 | .30 Ampule . . . 1.00 |
| .60 Ampule . . . 1.50 | .15 Ampule . . . 0.75 |

(10% Discount on 10 Tubes; 20% on 100 Tubes or more)

Arsphenamine (Metz)

Salvarsan—Metz

| | |
|------------------------|------------------------|
| .6 Ampule . . . \$1.50 | .3 Ampule . . . \$.85 |
| .5 Ampule . . . 1.25 | .2 Ampule75 |
| .4 Ampule . . . 1.00 | .1 Ampule60 |

Neosarsphenamine (D.R.L.)

Derm. Research Labs.—Phila.

| | |
|-------------------------|-------------------------|
| .90 Ampule . . . \$2.00 | .45 Ampule . . . \$1.25 |
| .75 Ampule . . . 1.75 | .30 Ampule . . . 1.00 |
| .60 Ampule . . . 1.50 | .15 Ampule75 |

(10% Discount on 10 Tubes; 15% on 100 Tubes or more)

Arsphenamine (D.R.L.)

Derm. Research Labs.—Phila.

| | |
|------------------------|------------------------|
| .6 Ampule . . . \$1.50 | .3 Ampule . . . \$1.05 |
| .5 Ampule . . . 1.40 | .2 Ampule80 |
| .4 Ampule . . . 1.25 | .1 Ampule50 |

Fred I. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

135 STOCKTON STREET
TEL. SUTTER 3122

FRED I. LACKENBACH
BIOLOGIC DEPOT

Our Salvarsan Service

¶ We supply complete Sterilized Outfit consisting of graduated reservoir, tubing, observation tube, Luer glass connection and two suitable needles; also 250 c.c. flasks of freshly double-distilled water and sterile salt solution with 15% sodium hydroxide, exactly enough to neutralize the dose of Arsphenamine—all for \$6.00. The Salvarsan solution may be effected in the flask containing the double-distilled water.

¶ When you have your own outfit we can send the freshly double-distilled water, sterile salt solution and NaOH q. s. for \$1.00.

¶ For concentrated solutions we supply 20 c.c. Luer Syringe outfit with suitable needles, mixing flask containing freshly double-distilled water, all sterilized and ready for use—at \$6.00 complete.

¶ These outfits and solutions are the very best that money can buy. They are the culmination of years of practical experience and painstaking effort.

¶ In San Francisco we loan out gravity outfit at \$2.50 and 20 c.c. Luer outfit at \$1.50 complete.

¶ For immediate use we prepare the solution for \$1.00. The actual cost of preparation, however, is only 50c. since the flask of double-distilled water would be 50c.

Wassermann Test \$5.00

Luer Syringe Price List

| Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each | Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each |
|-----------------|----------|---------------|--------------------|---------------------|-----------------|----------|---------------|--------------------|---------------------|
| Tuberculin..... | ¼ c.c. | \$2.25 | \$1.65 | \$1.40 | Serum..... | 5 c.c. | \$2.50 | \$1.90 | \$1.55 |
| Tuberculin..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Serum..... | 10 c.c. | 3.25 | 2.40 | 2.05 |
| Gray Oil..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Arsphenamine.. | 20 c.c. | 4.50 | 3.25 | 2.75 |
| Tuberculin..... | 1 c.c. | 2.00 | 1.50 | 1.25 | Eccentric Tip.. | 20 c.c. | 5.00 | 3.75 | 2.75 |
| Subcutaneous... | 1½ c.c. | 1.25 | .90 | .80 | Arsphenamine.. | 25 c.c. | 5.00 | 3.75 | 3.25 |
| Precision..... | 1½ c.c. | 2.00 | 1.50 | 1.30 | Arsphenamine.. | 30 c.c. | 5.75 | 4.35 | 3.75 |
| Subcutaneous... | 2 c.c. | 1.40 | 1.00 | .80 | Eccentric Tip.. | 30 c.c. | 6.75 | 5.35 | 3.75 |
| Precision..... | 2 c.c. | 2.25 | 1.75 | 1.50 | Arsphenamine.. | 50 c.c. | 8.00 | 6.00 | 5.00 |
| Lachrymal..... | 3 c.c. | 3.50 | 2.65 | 2.25 | Eccentric Tip.. | 50 c.c. | 9.00 | 7.00 | 5.00 |
| Vaccine..... | 3 c.c. | 2.00 | 1.45 | 1.25 | Arsphenamine.. | 100 c.c. | 12.00 | 9.00 | 7.50 |
| Dental..... | 4 c.c. | 2.25 | 1.65 | 1.35 | Eccentric Tip.. | 100 c.c. | 13.00 | 10.00 | 7.50 |

☞ Return both parts. New Syringe supplied at cost of broken part.

Fred I. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

135 STOCKTON STREET
TEL. SUTTER 3122

FRED I. LACKENBACH BIOLOGIC DEPOT

Solution Arsphenamine—Lowy

- ☞ Is a carefully prepared and alkalinized solution of Arsphenamine ("606"). It is furnished in a form available for instant use in the office or at the bedside.
 - ☞ Shipped complete in an individual box containing solution, hanger, with rubber tubing, filter and needle packed in sterilized containers.
 - ☞ Accepted by the Council, A. M. A.; Tested and Licensed by the U. S. P. H. S.
- 80 Cc. (0.4 Arsphenamine) . . . \$3.25 120 Cc. (0.6 Arsphenamine) . . . \$3.50

Huile Grise Injectable (Dr. L. Lafay, Paris)

- ☞ French Grey Oil—For intensive Mercurial treatment. One grain mercury as metal is exhibited in 2½ minims—six grains to the c.c. Given deep into the gluteus once weekly. In 5 c.c. vials at \$2.50. Our special Luer Grey Oil Syringe complete at \$3.50.

Fred I. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

135 STOCKTON STREET
TEL. SUTTER 3122

THE MODERN DRESSING



NON-ADHERENT

TRANSPARENT

OCCCLUSIVE

STERILIZABLE

WATER PROOF

Satisfactorily meeting the professional requirements for a dressing material of this kind that will not deteriorate with age or on account of atmospheric conditions.

Prepared in PERFORATED and IMPERVIOUS forms.

Besides being more useful, efficient and economical than oiled silk, gutta percha, rubber tissue, etc., CELLOSILK is successfully used for many cases where all other materials have proven inadequate.

CELLOSILK PRICE LIST

PERFORATED FORM
For dressing wounds requiring air and drainage,
and all granulating surfaces.

"Standard Perforate" Roll 9" x 12".....\$2.00

IMPERVIOUS FORM
For all impervious coverings, wet dressings,
drainage, etc.

"Standard" (single weight) Roll 9" x 12".....\$1.25
"Standard Heavy" (double weight) Roll 9" x 12" 1.75
"Hospital" (single weight) Roll 18" x 12"..... 2.25
"Hospital Heavy" (double weight) Roll
18" x 12" 2.75

The 9-inch rolls are packed in handy cardboard containers. It is advisable to have both Perforated and Impervious CELLOSILK on hand for constant use. Order CELLOSILK from your regular Supply House.

Literature and samples sent on request

Marshalltown Laboratories, Inc.

Marshalltown, Iowa

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

B&B Surgeon's Soap

Germicidal



Phenol Coefficient—51.98

As per report of Chicago Laboratory

An independent authority—the Chicago Laboratory—reports the phenol coefficient of B&B Surgeon's Soap to be 51.98. Complete report sent on request.

A one-per-cent lather corresponds in bactericidal strength with a 50 per cent solution of carbolic acid. So its germicidal power is unquestionable.

One cake represents the germicidal power of six pounds of carbolic acid, or about 15 gallons of a 5 per cent solution.

B&B Surgeon's Soap contains one per cent mercuric iodide, which has 5000 times the germicidal power of carbolic acid.

It is the only type of cake soap which can properly be called germicidal. That

means more than "antiseptic," more than "disinfectant." It means the power to kill germs.

If a soap contains 5 per cent carbolic acid, a one-per-cent lather represents a dilution of 1 to 2000. That is far below germicidal efficiency. Cresol is also reduced too low.

B&B Surgeon's Soap is truly germicidal, with lather formed in the usual way. Contact with the skin for a few minutes makes it doubly sure.

The cake is convenient. It cannot break as a bottle of liquid might. It has lasting qualities and can always be relied upon.

Write us for complete report.

BAUER & BLACK Chicago New York Toronto

Makers of Sterile Surgical Dressings and Allied Products

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST**—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND**—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD**—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH**—That vaccination against all three infections does definitely protect against all three.
- FIFTH**—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH**—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration?

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count
Write for Therapeutic Index Price List

ALWAYS
AT
YOUR
SERVICE



5th Floor
Yosemite Bldg.

Stockton
California

DOCTORS'
COLLECTIONS
OUR
SPECIALTY

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES
1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.
Phone Franklin 4556

Tuberculosis

ALTA SANATORIUM

DR. BURT F. HOWARD
Medical Director

MRS. B. E. TAYLOR
Nurse-Matron

Alta, Placer Co., California

BUILDS
AND
RESTORES TISSUE

OVALTINE

To build and restore tissue to the best advantage requires that the materials for construction and restoration be in such form and such proportion that, on the one hand, the anabolic function may proceed unhindered, and, on the other, that a nice adjustment and distribution of the constructive elements may be brought about.

"Ovaltine" with its wealth of essential food elements, easy of digestion and assimilation; with its natural iron, calcium and phosphorus constituents; with its enzymic principles and accessory food factors; provides constructive and restorative material for every tissue of the body.

THE WANDER COMPANY

37 South Wabash Avenue
Chicago, Ill.

Works: Villa Park, Ill.

Samples and literature mailed to physicians on signed request.

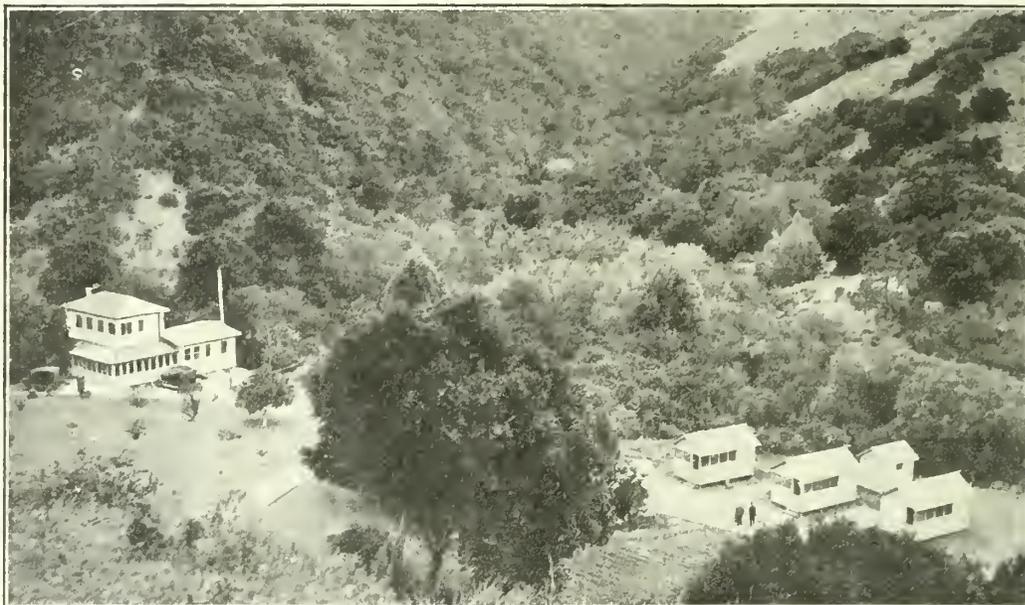
Obtainable from druggists in 8 oz., 17 oz., 5 lb., and 10 lb. tins.

M-6

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*
□



SOME OF THE COTTAGES

□
*Rates
Reasonable*
□
Climate Ideal
□

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR

FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN C. YATES, San Diego, President

JOHN H. GRAVES, San Francisco, President-Elect.

WM. DUFFIELD, Los Angeles, 1st Vice-Pres.

JOSEPH CATTON, San Francisco, 2d Vice-Pres.

SAXTON POPE, San Francisco, Secretary

ALFRED C. REED, San Francisco, Editor

COUNCILORS

First District—San Diego, Riverside, Orange, San Bernardino and Imperial Counties.

J. C. KING, Banning
(Term expires 1921)

Second District—Los Angeles, Santa Barbara, Ventura and Kern Counties.

WM. H. KIGER, Los Angeles
(Term expires 1922)

Third District—San Luis Obispo and Monterey Counties.

T. C. EDWARDS, Salinas
(Term expires 1921)

Fourth District—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties:

GEORGE H. AIKEN, Fresno
(Term expires 1921)

Fifth District—Santa Clara, San Mateo, San Benito and Santa Cruz Counties.

FRANK H. PATERSON, San Jose
(Term expires 1923)

Sixth District—San Francisco County.

C. G. KENYON, San Francisco, Chairman
(Term expires 1922)

Seventh District—Alameda, Contra Costa, San Joaquin and Calaveras Counties.

EDW. N. EWER, Oakland
(Term expires 1923)

Eighth District—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.

JAMES H. PARKINSON, Sacramento
(Term expires 1922).

Ninth District—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.

ANDREW W. HOISHOLT, Napa
(Term expires 1923)

COUNCILORS AT LARGE:

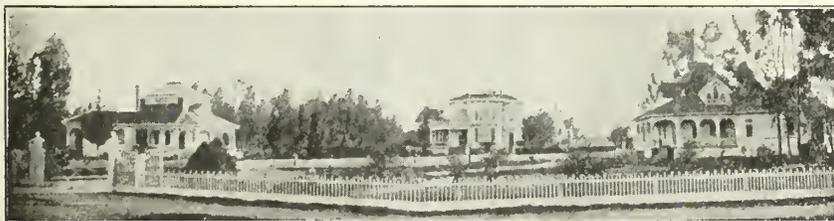
O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); H. A. L. Ryfkogel, San Francisco (term expires 1921); C. Van Zwalenburg, Riverside (term expires 1923).

CALIFORNIA STATE JOURNAL OF MEDICINE

BUTLER BUILDING, SAN FRANCISCO

CONTENTS -- Continued

| | | | | | |
|---|----|--|----|--|----|
| Nasal Conditions Occurring in Bronchial Asthma, A Study of. By Simon Jesberg, M. D. | 33 | Orange | 49 | State Board of Medical Examiners—October 1920 Meeting, Legal Department. | 42 |
| Book Reviews | 35 | San Francisco | 40 | Licensing Examination | 44 |
| El Retiro—The New School for Girls. By Miriam Van Waters, Supt. | 37 | Tulare-Kings | 40 | Collected Clippings on Medical Law Enforcement | 43 |
| Correspondence | 38 | Notice—Lane Medical Lectures Clinical Department—Amebic Gall Bladder Infections with Operation. By Herbert Gunn, M. D. | 41 | People of the State of California vs. Galen R. Hickok. | 43 |
| County Societies: Los Angeles | 38 | University of California Hospital, Children's Department | 41 | New Members | 46 |



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium, Livermore, Calif.

HYDROPATHIC DEPARTMENT



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

*Dr. Zander's Mechanical Swedish
Apparatus,
Hydrotherapy, Massage and Manipulations
Electrotherapy, Thermo-penetration,
Oxygen Vapor Inhalations, Heliotherapy,
Proctoclysis and Corrective-Gymnastics*

We are equipped with every known modern mechanical device of scientifically proven efficiency for the relief of suffering. We maintain every facility for recuperation that is to be found in the best of European Spas.

Our Institute was primarily designed for the relief of persons suffering from chronic disorders, and our equipment is especially assembled for their treatment.

SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED.

The Physicians Institute endeavors to meet a great and necessary co-operative role with the Physician and Surgeon of San Francisco in their fight with intractable morbid conditions. The Physicians Institute is simply a unique and efficient therapeutic agent available to all physicians who want to retain their patients, but desire to place them in the hands of specially trained technicians who are equipped with the required modern therapeutic appliances and who make a specialty of coping with conditions as indicated above.

War-trained "aids." Graduate nurses.

Best references. Inspection invited.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

N. A. Karpaty, B. Sc.,
Director.

SYPHILO-DIAGNOSIS

DARKFIELD FOR SPIROCHETES

WASSERMANN:

TWO ANTIGENS—COLD AND WARM REACTION

LANGE COLLOIDAL GOLD REACTION

NOGUCHI REACTION

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES

133 GEARY STREET, SAN FRANCISCO

Telephone SUTTER 1015

The SEYMOUR SANATORIUM

For Diseases of the Lungs and Throat

BANNING, CAL.

Attractive, Homelike Surroundings

Comfortable, Well-Built Bungalows

Excellent Food—Tray Service Without Extra Charge

An Atmosphere of Quiet Contentment

Carefully Individualized Treatment

All Modern Methods Used in Suitable Cases

Rate: \$100.00 Monthly

DR. C. E. ATKINSON

Medical Directors

DR. H. E. MORRISON

ÆTNA SERVICE *for Every Insurance Need*

Your insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Aetna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Get acquainted with the Aetna Agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Aetna organization behind him he is competent both to prescribe and to fill prescriptions.

Aetna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued only to members in good standing of the Medical Society.

Be Wise — Aetna-ize

When in need of insurance remember that Aetna policies offer complete protection and unexcelled service. Here are some of the more important lines written by the Affiliated Aetna Companies:

| | | |
|--------------|-----------------------|-------------------|
| LIFE | HOSPITAL | FIRE |
| ACCIDENT | COMBINATION RESIDENCE | USE AND OCCUPANCY |
| HEALTH | GENERAL LIABILITY | MARINE |
| AUTOMOBILE | BURGLARY | SURETY BONDS |
| (Every Kind) | THEFT | PLATE GLASS |

AETNA LIFE INSURANCE COMPANY AETNA CASUALTY AND SURETY COMPANY AUTOMOBILE INSURANCE COMPANY

Of Hartford, Connecticut

TOTAL ASSETS JANUARY 1, 1920.....\$188,113,036.63

For Any Kind of Insurance Information Write Direct to

ÆTNA LIFE INSURANCE COMPANY
DEPARTMENT "C," 333 PINE STREET, SAN FRANCISCO, CALIFORNIA
J. R. Molony, Manager, Western Branch

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

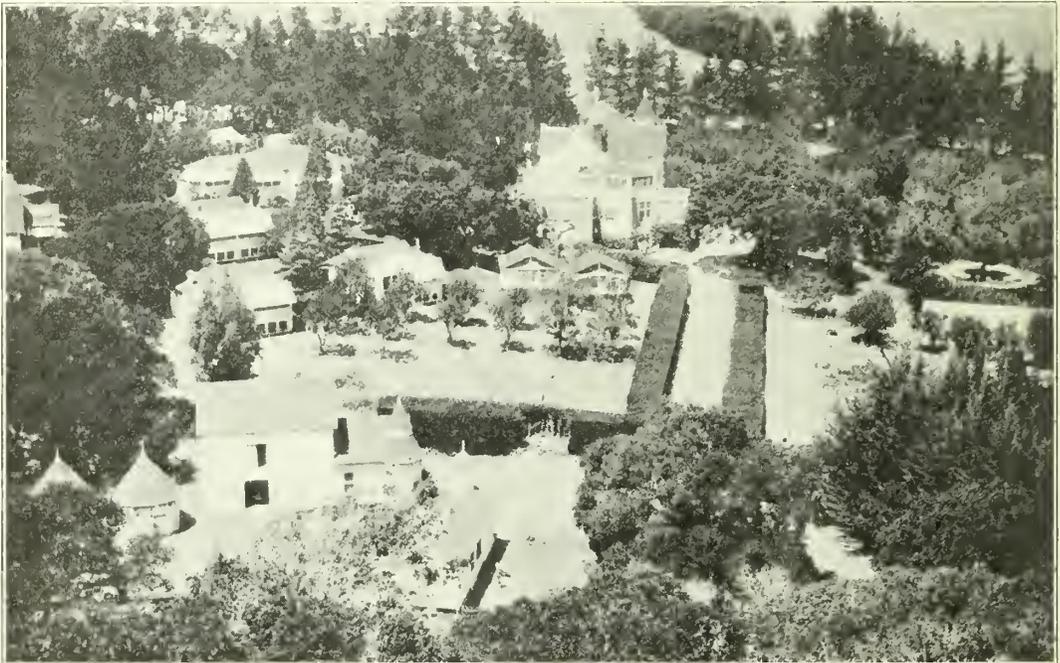
ROBERT A. PEERS, Medical Director,
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

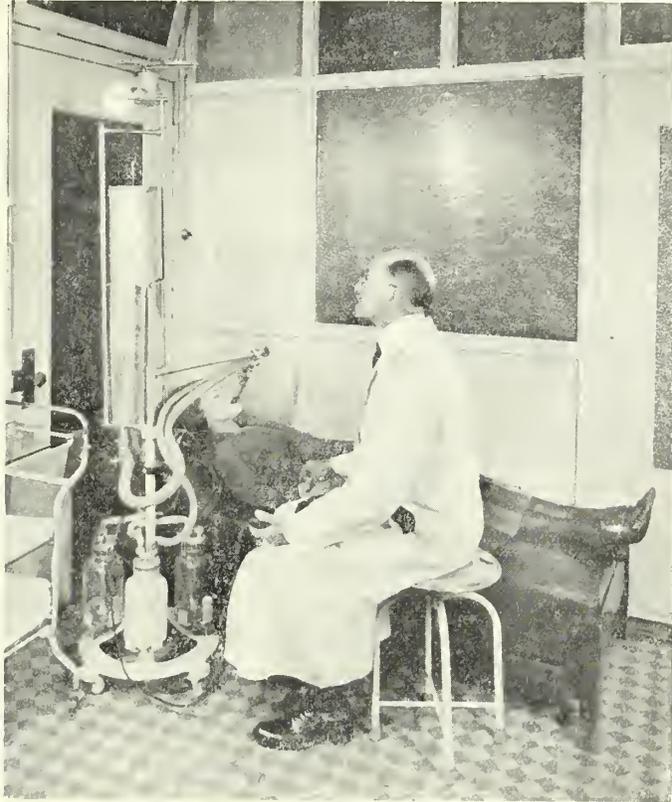
Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

Announcing a New Department for the Study of Basal Metabolism Determination



Determining Basal Metabolism with the Benedict Apparatus

WE ARE PLEASED TO ANNOUNCE that in keeping with our policy of serving the profession with the latest approved laboratory tests, we have equipped a new department with special apparatus for the determination of Basal Metabolism (oxygen consumption) as developed by Dr. F. G. Benedict of the Carnegie Nutrition Laboratory. Through this new department the profession at large has available a very valuable service which only a few specialists and institutions have enjoyed in the past.

Metabolism includes the absorption of foods, their oxidation and transformation into body constituents, and also the later oxidations of these tissues. The study of Metabolism has been placed on a practical clinical basis and specialists and clinicians are recognizing more and more the value of determining the patient's Basal or Minimal Metabolism as a diagnostic aid and a guide to treatment of diseases, especially those that involve the glands of internal secretions and principally the thyroid. The determination of Basal Metabolism is also of value in cases in which the

nutritional processes are seriously involved as in the profound anemias, diabetes, etc.

The diagnostician who interprets the Basal Metabolism intelligently will be able to determine the degree of thyroid activity. The surgeon who operates on thyroid patients will find that the Basal Metabolism is of great help in following his results. He will also find that in many cases the determination of the Basal Metabolism will save the patient a needless operation.

The normal Basal Metabolism is fairly constant and hence wide variations from it in disease are of interest to the clinician. A marked rise occurs in hyperthyroidism and a marked fall in hypothyroidism. In these cases the determination of the Basal Metabolism furnishes the best index as to the severity of the disease, and is also a quantitative means of following the course and of judging of the effectiveness of treatment. It is also a valuable aid in differential diagnosis.

Patients should be sent to the laboratory for this determination. The Fee is \$10.

PACIFIC WASSERMANN LABORATORIES

SAN FRANCISCO: Suite 506 Pacific Building • Telephone Sutter 1486
LOS ANGELES: Suite 1010 Hollingsworth Building • Telephone Pico 1654

The Management of an Infant's Diet

In extreme emaciation, which is a characteristic symptom of conditions commonly known as

Malnutrition, Marasmus or Atrophy

it is difficult to give fat in sufficient amounts to satisfy the nutritive needs; therefore, it is necessary to meet this emergency by substituting some other energy-giving food element. Carbohydrates in the form of maltose and dextrins in the proportion that is found in

MELLIN'S FOOD

are especially adapted to the requirements, for such carbohydrates are readily assimilated and at once furnish heat and energy so greatly needed by these poorly nourished infants.

The method of preparing the diet and suggestions for meeting individual conditions sent to physicians upon request.

MELLIN'S FOOD COMPANY,

BOSTON, MASS.

JUST PUBLISHED

PSYCHO-PATHOLOGY

By Edward J. Kempf, M.D., Clinical Psychiatrist to St. Elizabeth's Hospital (formerly Government Hospital for the Insane), Washington, D. C., author of "The Autonomic Functions and the Personality," 762 pages + xxiii, 6 3/4 by 9 3/4, with 97 illustrations. Printed on beautiful India Tint paper, and bound in silk cloth binding, with gold stamping. Price, \$9.50.

A complete book, elaborating the new epoch in the study and treatment of the adjudicated insane.

Abnormal behavior is one of the most interesting topics for study. When the principles underlying it are mastered many mysteries that have perplexed medical men, criminologists, and lawyers are solved. Doctor Kempf has rendered a real service to physicians in the writing of "PSYCHOPATHOLOGY."

The book is handsomely printed on India Tint paper, and the illustrations are beautiful specimens of the engraver's art

 Just sign the attached coupon and mail, and the book will be sent at once.

C. V. Mosby Company

MEDICAL PUBLISHERS

ST. LOUIS

U. S. A.

Send for a copy of our new 96-page catalog

PARTIAL TABLE OF CONTENTS

The Physiological Foundations of the Personality; The Psychology of the Family; The Universal Struggle for Virility, Goodness and Happiness; Influence of Organic and Functional Inferiorities upon the Personality; Mechanistic Classification of Neuroses and Psychoses Produced by Distortion of Autonomic-Affective Functions; The Mechanism of the Suppression or Anxiety Neuroses; Repression or Psychoneuroses, Their Mechanisms and Relation to Psychoses Due to Repressed Autonomic Cravings; Benign Compensation or Regression Neuroses, with or without Dissociation of Personality; Manic-Depressive Psychoses; Elimination or Simulation for Wish-Fulfillment in Affective Crises; Pernicious Repression Compensation Neuroses; The Psychopathology of Paranoia; The Psychopathology of the Acute Homosexual Panic; Acute Pernicious Dissociation Neuroses; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Defensive Hatred, Eccentric Paranoid Compensations and Pernicious Deterioration; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Crucifixion and Cataleptic Adaptations to the Repressed Cravings; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Hebephrenic Adaptations; Predominance of Excretory Erotic Interests; Reconsideration of the Conditioned Autonomic Affective Determinants of Abnormal Variations of Behavior; Psychotherapeutic Principles.

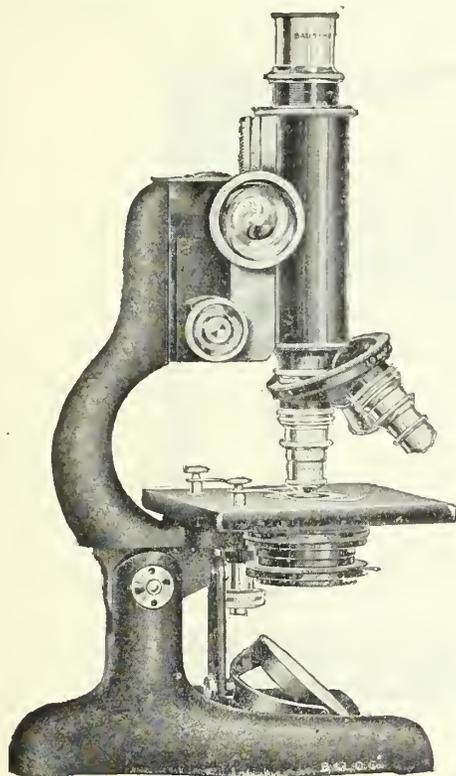
C. V. Mosby Co. (Calif.)
St. Louis

Send me the new book by Edward J. Kempf, M.D., "PSYCHOPATHOLOGY," for which I enclose \$9.50, or you may charge to my account.

Name.....

.....

.....



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.



AREQUIPA SANATORIUM, MANOR, MARIN COUNTY, CALIFORNIA

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients). Includes medical and nursing care, board and laundry. Medical Director, Dr. Philip King Brown.

APPLY OFFICE AREQUIPA, 401 MEDICAL BLDG., SAN FRANCISCO

Phone Franklin 844

ALQUA
THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLERS AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO - OAKLAND - SACRAMENTO - LOS ANGELES - CAL. U. S. A.

Grageroff & Papazoni

Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

Readily Soluble
Practically Free from Toxicity
Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you order direct from

H. A. Metz Laboratories, Inc.
122 Hudson Street,
NEW YORK CITY

Adrenalin in Medicine

4—Treatment of Hemorrhage

IN the control of all kinds of hemorrhage, with the exception of that following chloroform narcosis, Adrenalin is an efficient aid. The object of hemostatic treatment is to constrict the lumen of the bleeding vessels, thereby retarding the flow of blood and facilitating the formation of a clot which acts as a plug and arrests the hemorrhage.

Adrenalin is effective not only by virtue of its obvious vasoconstrictor action, but also because *it shortens the coagulation time.* This has been demonstrated by Cannon and his co-workers to be true particularly when small doses are injected intravenously or even subcutaneously.

In severe hemorrhages one drachm of Adrenalin 1:1000 in a pint of hot salt solution may be given by hypodermoclysis in the subcutaneous tissue under the breast or by infusion directly into a vein. This is not a large dose of Adrenalin if the hypodermoclysis or the infusion is given slowly.

Adrenalin is oxidized in the circulation so rapidly that the result of this injection is not the tumultuous effect that would be expected of one drachm of Adrenalin; it is rather the evenly sustained ef-

fect of a few minims. Adrenalin restores and maintains the arterial tension, and the volume of fluid introduced into the almost exsanguinated vessels gives the heart something upon which to contract.

Superficial hemorrhages and others which, because of their location, are readily accessible may be treated by the topical application of previously moistened compresses to which are added a few drops of Adrenalin 1:1000. In the category of hemorrhages which are amenable to this local measure are those of the nose, mouth, throat, ear, vagina, uterus, and rectum.

In hematemesis give by mouth about one drachm of the 1:1000 solution. The ingestion of the remedy in this case brings it into immediate contact with the bleeding vessels. In hematuria the injection into the bladder of an ounce or two of a solution of Adrenalin 1:5000 or 1:10,000 is frequently effective.

Because of its vasoconstrictor action, Adrenalin is utilized also as an application to mucous membranes which are the sites of vascular engorgement or inflammation. Dilution to 1:5000 is proper when Adrenalin is used for this purpose.



PARKE, DAVIS & COMPANY

QUARTZ MERCURY VAPOR ULTRA VIOLET LIGHT

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, specula, endoscopes, proctoscopes, laryngoscopes pharyngeal, nasal, urethral, vaginal, rectal, uterine lenses and radiating tubes for the application of ultra-violet emanations.

THE PAMBRUN DEEP PENETRATION FILTER SYSTEM

Service in technique
Service in instruction

Service in installation
Service in maintenance

KROMAYER UNIT
WATER COOLED

ALPINE SUN UNIT
AIR COOLED

L. B. PAMBRUN

220 Phelan Bldg.

Phone Sutter 2322

San Francisco, U. S. A.

Representing
Hanovia Chemical & Mfg. Company
of Newark, N. J.

Prices and Terms on Application

San Joaquin Valley Radium Institute of FRESNO, CALIF.

This institution is equipped with the most modern type of emanation apparatus and necessary appliances for treatment of all diseases amenable to radium therapy.

We invite inquiries and wish to cooperate with the medical profession with reference to radium therapy.

GEO. H. SCIARONI, M. D.,
Medical Director,
108-112 Forsyth Bldg.,
Fresno, Calif.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

Ethical

Reliable

DIAGNOSTIC LABORATORIES

OF

GRANT & WILSON

PATHOLOGISTS

BACTERIOLOGICAL
CHEMICAL
CLINICAL
METABOLIC
PATHOLOGICAL
SEROLOGICAL

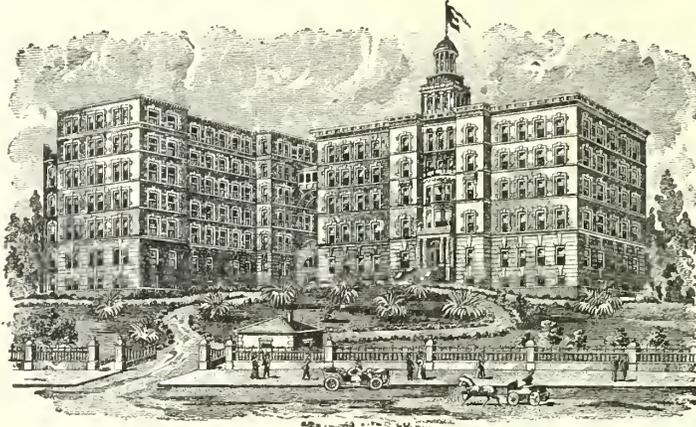
327 MERCHANT'S NATIONAL BANK BLDG.
Los Angeles, Cal. Phone 64536

Prompt

Accurate

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-ray and
Maternity Departments*

Training School for Nurses

For further information

Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

ABILENA WATER

is an Ideal Natural Eliminant



It is especially valuable in all acute, febrile disorders, including influenza.

Its action is rapid, stimulating the flow of intestinal secretions without irritation.

It is mild, non-gripping in action, not disagreeably saline in taste, and is actively laxative or purgative according to the dose administered.

Doctor: Have you ever used ABILENA WATER in your practice? If not, we will send you a FREE sample package on request.

On sale at drug stores

The Abilena Sales Co.

Abilene, Kan.

CALCREOSE

BRONCHITIS

In the treatment of bronchitis, especially the bronchitis accompanying pulmonary tuberculosis, and the respiratory complications of other infectious disorders, the use of

CALCREOSE

has been attended by such good results, that many clinicians have shown it favor.

The pharmacology of CALCREOSE is the pharmacology of calcium and creosote, but unlike creosote, CALCREOSE does not cause gastric distress or irritation. Therefore when creosote action is desired without these untoward effects, CALCREOSE is an excellent form of creosote medication.

The dosage of CALCREOSE is accurately and easily regulated. Patients do not object to creosote in the form of CALCREOSE.

TABLETS POWDER SOLUTION

Samples and details will be sent on request

THE MALTBIE CHEMICAL COMPANY - Newark, New Jersey



Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director

Colfax, California



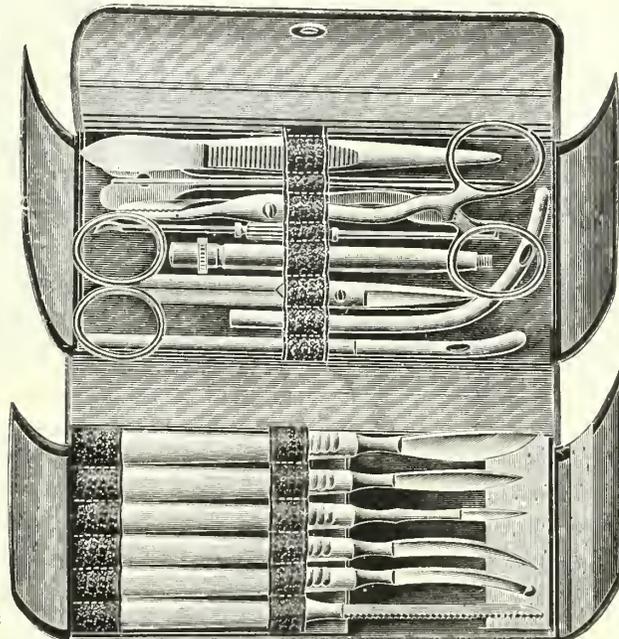
TRIVERS SURGICAL COMPANY

SAN FRANCISCO, CAL.

Phone Sutter 4651

372 Sutter Street

Surgical Instruments
Microscopes
Laboratory Glassware
Metal Furniture
Electric Apparatus
Cystoscopes
Hospital Supplies
Surgeon's Gowns
Skeletons



Well Equipped
Department for
the Scientific
Fitting of
Surgical Corsets
and Belts for
Correcting Entropsis.
Expert Fitter in
charge.



HEADQUARTERS

Our facilities make us headquarters for the Endocrine Gland and Organotherapeutic products.

Pituitary Liquid
1/2 c. c. and 1
c. c. ampoules 6
in box.

Pituitary powder
and tablets. An-
terior Pituitary
Powder and Tabs.
Posterior Pituitary
Powder and Tabs.

Corpus Luteum
(true powder) and
2 and 5 grain Tabs,
and 2 and 5 grain
capsules.

Pepsin, U. S. P.
scale, granular and
powder.

Pancreatin, U. S. P.
Powder.

ELIXIR OF ENZYMES is a palatable preparation of the proteolytic and curdling ferments that act in acid medium. It is recommended as an aid to digestion and as a gastric tonic generally.

Elixir of Enzymes is of special service in correcting faulty proteid metabolism which is one of the principal causes of auto-intoxication.

Elixir of Enzymes is an excellent adjuvant and vehicle for exhibiting iodids, bromids, salicylates and other drugs that disturb the digestive functions. One dram of Elixir Enzymes will carry 46 grains of potassium iodid or 45 grains of sodium salicylate or 17 grains of potassium bromid.

Elixir of Enzymes contains the curdling ferment and may be used for making junket or curds and whey. Add one teaspoonful of the Elixir to half pint of lukewarm milk, stir thoroughly and let stand till cool.

For minimizing the organic disturbances and eliminating the corrosive effect of potassium iodid on the mucous membrane of the stomach as well as disguising the taste, the following combination is recommended:

Potassium Iodid, 2 ounces.

Distilled water, enough to make two fluid ounces.

To exhibit, for instance, 20 grains of potassium iodid three times daily, use one teaspoonful of Elixir of Enzymes, one teaspoonful of the above solution to half pint of lukewarm milk; stir thoroughly and let stand until cool. Take one-third of this quantity as a dose. This junket should be made up fresh every morning.

ARMOUR AND COMPANY

5702

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Ilypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T.E. or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

Walters Surgical Company

"THE HOUSE THAT AIMS TO SERVE"

441 SUTTER STREET

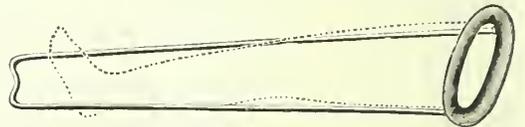
Between Powell and Stockton Streets

Phone Douglas 4017

SURGICAL INSTRUMENTS HOSPITAL SUPPLIES

- TRUSSES
- ABDOMINAL SUPPORTERS
- ELASTIC HOSE
- ORTHOPEDIC APPLIANCES

We Carry All the Late Patterns of U. S. Army
Splints, Including Jones', Thomas'
and Hodgnes'



THOMAS' KNEE SPLINT

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

Fine Grades in Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary

San Francisco, Cal.

POSITION WANTED by a registered nurse—graduate from standard school, wants position with doctor. Have had broad experience in office management, surgical assisting and obstetrics. Compensation governed by responsibilities assumed. References exchanged. Address A. Z. B., care California State Journal of Medicine, 930 Butler Bldg.

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

THE SAN FRANCISCO BANK

SAVINGS

526 California Street, San Francisco, Cal.

COMMERCIAL

Member of the Federal Reserve System, Member of the Associated Savings Banks of San Francisco

MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

June 30th, 1920

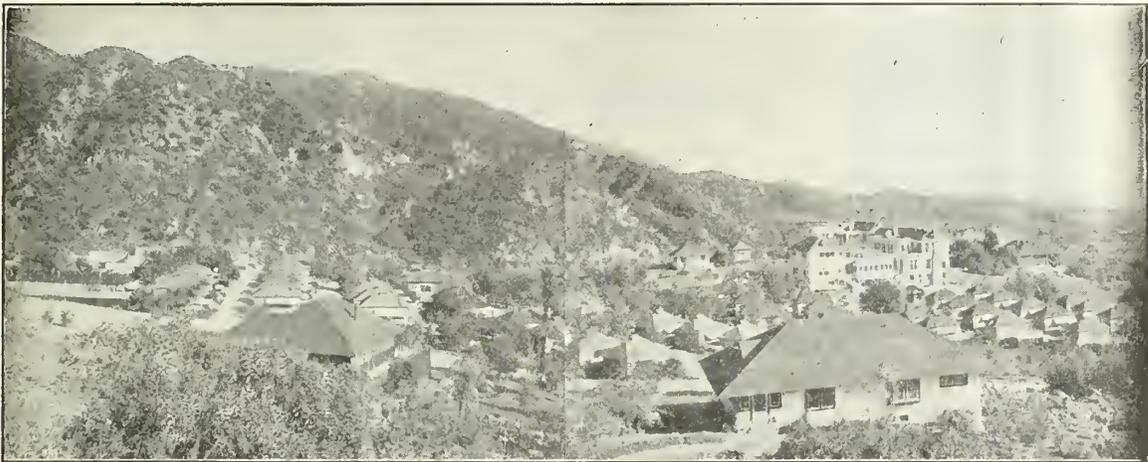
| | | | |
|----------------|-----------------|------------------------------|----------------|
| Assets | \$66,840,376.95 | Capital Actually Paid Up.... | \$1,000,000.00 |
| Deposits | 63,352,269.17 | Reserve and Contingent Funds | 2,488,107.78 |
| | | Employees' Pension Fund... | \$330,951.36 |

OFFICERS

| | | | |
|---|-------------------------------------|--|---------------------------------------|
| JOHN A. BUCK, President | GEO. TOURNY, Vice-Pres. and Manager | A. H. R. SCHMIDT, Vice-Pres. and Cashier | E. T. KRUSE, Vice-President |
| A. H. MULLER, Secretary | WM. D. NEWHOUSE, Asst. Secretary | WM. HERRMANN, Asst. Cashier | GEO. SCHAMMEL, Asst. Cashier |
| G. A. BELCHER, Asst. Cashier | R. A. LAUENSTEIN, Asst. Cashier | C. W. HEYER, Mgr. Mission Branch | O. F. PAULSEN, Mgr. Haight St. Branch |
| W. C. HEYER, Mgr. Park-Presidio District Branch | | GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys | |

BOARD OF DIRECTORS

| | | | | | |
|--------------|------------------|------------------|-------------------|-----------------|---------------|
| JOHN A. BUCK | A. H. R. SCHMIDT | A. HAAS | E. T. KRUSE | HUGH GOODFELLOW | ROBERT DOLLAR |
| GEO. TOURNY | I. N. WALTER | E. N. VAN BERGEN | E. A. CHRISTENSON | | L. S. SHERMAN |

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

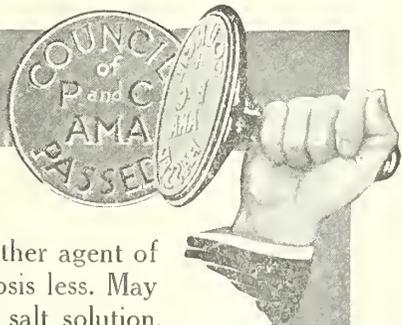
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

COUNCIL-PASSED**ACRIFLAVINE (Abbott)**

As a gonocide, reported more effective than any other agent of this class. Penetrates more deeply. Hinders phagocytosis less. May be used by injection or by irrigation in physiologic salt solution, 1 : 1000 to 1 : 5000.

As a germicide, about twenty times more powerful than bichloride yet virtually nontoxic. Highly recommended as a wet gauze dressing or packing for infected or suppurating wounds.

Supplied in 5-Gram vials at \$3.75 net. Booklet on request.

Proflavine is chemically similar and while not so quick to dissolve is said to serve equally well. In 5-Gram vials at \$2.44 net. On prescription at druggists or direct from us.

The Abbott Laboratories

Dept. 11, Chicago, Ill.

New York Seattle San Francisco
Los Angeles Toronto Bombay

Tested for Quality

The Storm Binder and Abdominal Supporter



✿
ORTHOPEDIC APPLIANCES

✿
FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

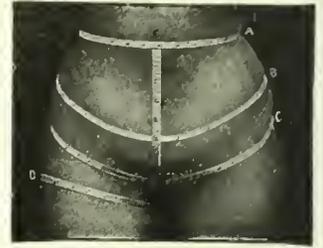


Diagram for Measuring

Dr. Nathalie Selling

Practice limited to Electrotherapeutics and various forms of light and physical methods.

Morning hours, Stanford Hospital.
Afternoon hours, Galen Building,
391 Sutter St., San Francisco
Phone Garfield 1393

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES

Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street

Between Post and Sutter Streets
SAN FRANCISCO

WANTED

A tuberculosis man, who may be interested in a wonderful location for a private Sanatorium in California, fine climate, convenient to railroad, can be financed easily.

Address E. N. M., care California State Journal of Medicine, 930 Butler Building, San Francisco, California.



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400

SAN FRANCISCO

ORIGINATORS—IMPROVERS—DEVELOPERS

Now
entering our
twenty-third
year of doing
one thing right

*We Lead Because
We Specialize*

The Medical Protective Co.
of
Fort Wayne, Indiana

PROFESSIONAL PROTECTION EXCLUSIVELY

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabil-
izer and combination fluoroscopic and radio-
graphic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco
Phone Fillmore 4160

BONDED COLLECTORS

Walker's Collection Agency

Phone Kearny 5547
Rooms 402-3-4, Charleston Bldg.
251 KEARNY ST., SAN FRANCISCO, CAL.

GEO. W. WALKER, Manager
MISS L. E. THRANE, Cashier
ROBERT WHITSON, Attorney

Agency of personal service. Old debts col-
lected anywhere. Our attorneys prosecute cases
in any court of law. Correspondents every-
where. Promptness our motto.

"We Get the Coin" "We Pay"



Special attention to doctor's accounts.
Personal calls throughout Southern California.
No Collection—No Charge.
We pay monthly.
Our rate one-half of the amount collected.

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.
426 So. Spring Street, Los Angeles, California

KENILWORTH SANITARIUM

KENILWORTH, ILL.
Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of
nervous and mental diseases. Approved diag-
nostic and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with forced ventilation. Elegant
appointments. Bath rooms en suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to
KENILWORTH SANITARIUM
Kenilworth Illinois



SOUTHERN SIERRAS SANATORIUM
 BANNING, CALIFORNIA
 FOR DISEASES OF THE LUNGS AND THROAT



DR. E. S. SMITH—Medical Directors—DR. J. P. FREY

DOCTORS' SMOCKS,
OPERATING GOWNS
 and
COATS
DENTISTS' JACKETS
 Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
 SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.

A. S. W. GRUNDY

SAN FRANCISCO

970 Sutter Street, Phone Franklin 8338

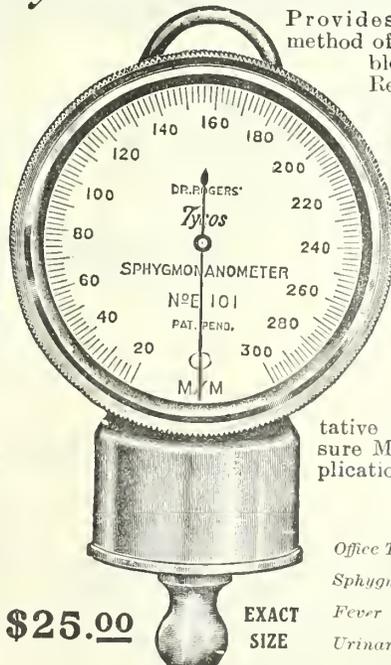
944 Hyde Street, Phone Franklin 3946

OAKLAND

2213-2215 Broadway, Tel. Oakland 1902

Next Key Route Inn

Tycos SPHYGMOMANOMETER



Provides a simple method of determining blood pressure. Recognized as embodying every essential possible in a portable manometer. Made of non-corrosive materials. No friction. Stationary dial. Self verifying.

Tycos authoritative Blood Pressure Manual on application.

Office Type
 Sphygmomanometer
 Fever Thermometers
 Urinary Glassware

\$25.00

**EXACT
 SIZE**

Taylor Instrument Companies, Rochester, N. Y.

#1-M



St. Francis Hospital and Training School for Nurses

N. E. Corner BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK
X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
 Eye Localization

Separate Laboratory for
 DENTAL RADIOGRAPHY

Referred Cases Only

318-321 Head Building, 209 Post Street
 San Francisco

Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
 San Francisco

Dickson-Bull
Artificial Limbs

Known Everywhere

Orthopedic Appliances
 For Every Requirement

Surgeons Assured
 Co-operative Service

22nd and Telegraph Avenue
 Oakland, Cal.
 Tel. Oakland 8438



Cystoscopy **Urethroscopy**
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
 of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
 210 Post Street San Francisco

MENTAL CONFUSION
OF WOMEN DUE TO
OVARIAN DYSFUNCTIONS

Reprints of Papers Reporting Cases
 With Method of Treatment
 Sent Upon Request

LUTEIN—Corpus Luteum—Tablets, H.W. & D.

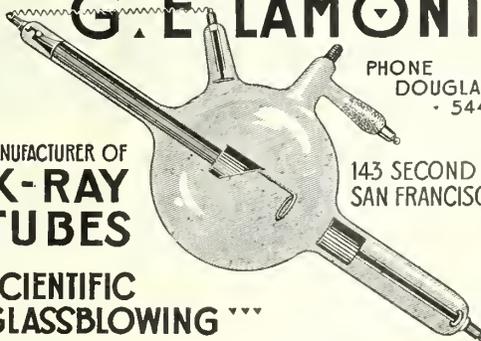
Were used with apparent good results in
 the treatment of the cases of mental disturb-
 ances reported.

HYNSON, WESTCOTT & DUNNING
 BALTIMORE

G. E. LAMONT

MANUFACTURER OF
X-RAY
TUBES

SCIENTIFIC
GLASSBLOWING ***



PHONE
 DOUGLAS
 - 5446

143 SECOND ST.
 SAN FRANCISCO

We Strive to Please Both
Physician and Patient

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 **DEPENDABLE STORES** **14**
SAN FRANCISCO



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

PHONE MARKET 8048

Cars Nos. 6, 7 and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.
The advice of the hospital staff is always at the
disposal of the patients' physicians.

GONOCOCCUS GLYCEROL-VACCINE

Stable and Effective

Advantages:

- 1- Will not deteriorate. 2-Free from autolytic products.
- 3 - In preliminary trials has not produced toxic reactions even in large doses.

The types of cases reported to us as favorably influenced by Gonococcus Glycerol-Vaccine are chronic gonorrheal infections, including gonorrheal rheumatism, epididymitis, prostatitis and posterior urethritis.

Further Information on Request

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE NEW YORK

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of
the previous calendar year, also 10 cents; two years
old, 20 cents; three years old, 25 cents; in other words,
5 cents additional is charged for each year preceding the
last calendar year.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. Currency should
not be sent unless the letter is registered. Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cal-
ifornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority or making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. Manuscript should not be rolled.

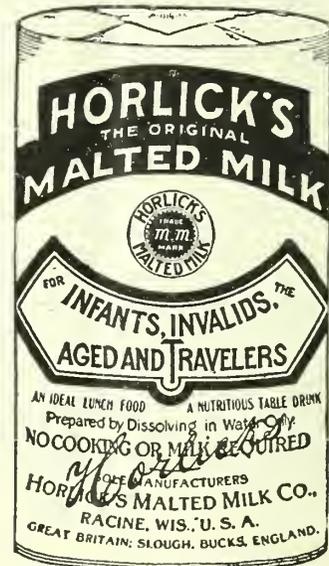
ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

The Diet in Typhoid

and other fevers and diseases prevalent
at this season



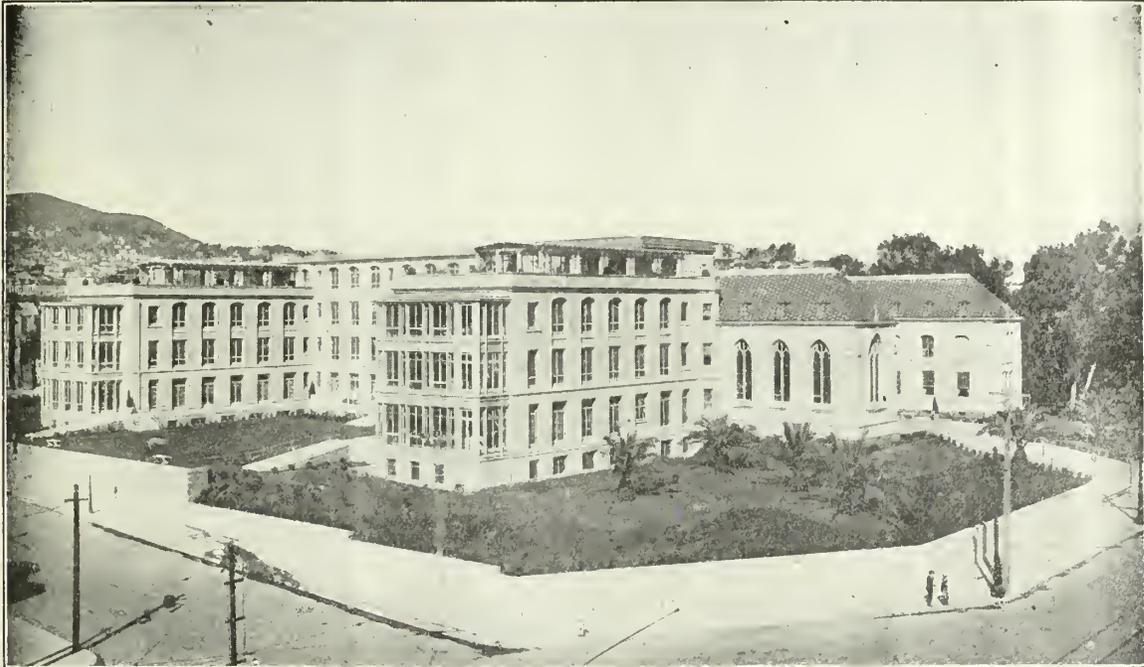
Avoid imitations by prescribing
"Horlick's the Original"

As the intestinal tract is seriously involved
in Typhoid fever, the dietetic problem is one
of first consideration. A liquid diet is largely
essential, in which connection "Horlick's" has
important advantages, being very palatable,
bland and affording the greatest nutriment
with the least digestive effort.

Samples prepaid upon request

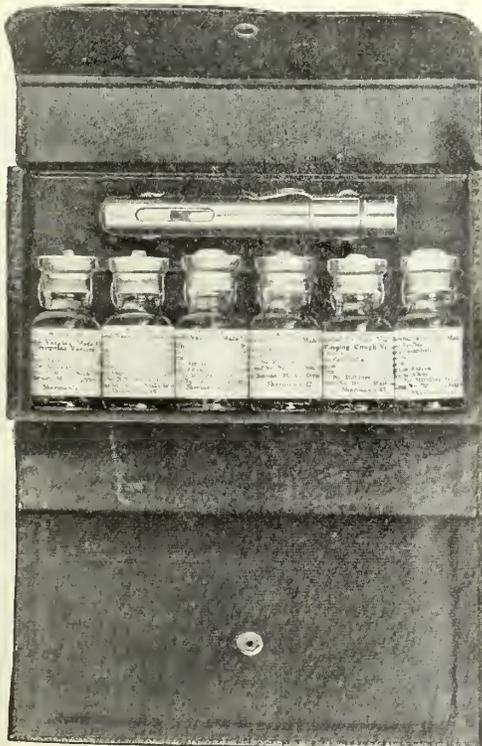
HORLICK'S MALTED MILK CO.

Racine, Wis.

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. Associate Staff—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. Consulting Staff—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. Pathologist—E. V. Knapp, M. D. Roentgenologist—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President. VEN. J. A. EMERY, Secretary and Treasurer.
WM. R. DORR, M. D., Superintendent. W. H. HILL, M. D., Resident Physician.



SHERMAN'S VACCINE CASE

The best immunizing response in Pneumonia is obtained during the first twenty-four hours after the initial chill. Every hour being vitally important, successful immunologists make inoculations in Respiratory Infections at their first call.

Be prepared; carry an assortment of Sherman's Polyvalent Vaccines and self-sterilizing syringe in this convenient case.

Your dealer will be pleased to supply you.

G. H. Sherman, M. D.

DETROIT - - MICHIGAN

Largest Producer of Stock and Autogenous Vaccines

PNEUMOCOCCUS ANTIGEN

(Partially Autolyzed Pneumococci)

FOR THE TREATMENT OF PNEUMONIA

Prepared according to the method of Dr. E. C. Rosenow, Mayo Foundation

Indicated in the treatment of the primary infections due to pneumococci of the various types with resulting clinical lobar pneumonia.

The extensive use of Pneumococcus Antigen by physicians has more than justified the belief of Dr. Rosenow and his co-workers that the Antigen is of decided assistance in combating pneumococcus infections.

THE PACKAGE

Pneumococcus Antigen is supplied only in 5 c. c. rubber-capped ampoule vials (20 billion partially autolyzed pneumococci in each cubic centimeter). Order as V-903.

ELI LILLY & COMPANY, Indianapolis, U. S. A.



Infant Feeding

Diet Materials

**IF THE FORMULA IS WRONG
SO WILL THE BABY BE**

Consider These Four Types of Bottle Babies

- | | | | |
|-------------------|-------------------|-------------------|----------------|
| Baby No. A | is a WELL BABY. | Baby No. B | does NOT GAIN. |
| Baby No. C | has CONSTIPATION. | Baby No. D | has DIARRHOEA. |

Should All Four Babies Be Fed Alike? YOUR answer is NO.

They are DIFFERENT, and therefore need a different formula. That is why MEAD'S DEXTRI-MALTOSE is not supplied to the laity with directions printed on the label. When mothers continue to make the mistake of feeding according to stock formulas which are not tolerated by their babies, digestive disturbances continue—even become worse. The DOCTOR'S HEAD WORK, plus "D-M," COW'S MILK and WATER means gratifying results. Samples, analysis and interesting literature on request.

MEAD JOHNSON & CO.

EVANSVILLE,

IND. U.S.A.

THE MEAD JOHNSON POLICY

MEAD'S DEXTRI-MALTOSE IS ADVERTISED ONLY TO THE MEDICAL PROFESSION. NO FEEDING DIRECTIONS ACCOMPANY TRADE PACKAGES. INFORMATION REGARDING ITS USE REACHES THE MOTHER ONLY BY WRITTEN INSTRUCTIONS FROM HER DOCTOR ON HIS OWN PRIVATE PRESCRIPTION BLANK.



Atophan

*Common sense reflections at
the approach of winter*

Sudden temperature variations and dampness.

Traditional optimism of man, carelessness, exposure.

Rheumatism, Neuralgia, Lumbago, Sciatica and other painful inflammatory and congestive conditions.

Great and insistent demand on the physician for relief.

ATOPHAN, for nearly ten years supreme among remedies for quicker, better results, safely obtained.

Made in U. S. A. and available everywhere.

Information and specimen box from

SCHERING & GLATZ, Inc., 150 Maiden Lane, NEW YORK

WANTED

Position as locum tenens, either in California or Nevada. Twenty-five years' experience both in hospital and general practice.

Address Dr. C. E., care of California State Journal of Medicine, 930 Butler Bldg., San Francisco.

— PALATABLE —

20% BENZYL BENZOATE

(VAN DYK & CO.)

NON-ALCOHOLIC AROMATIZED SUSPENSION
MISCIBLE, ANTISPASMODIC, NON-NARCOTIC in
ASTHMA — DYSMENORRHEA and
IRRITATING COUGHS

Write for Complete Data

**United Synthetic Chemical
Corporation**

SOLE DISTRIBUTORS

4 PLATT ST. - NEW YORK, N. Y.

For Sale

Oakland retiring physician's office, furniture and practice; \$400 cash; rent fee; real opportunity.

Dr. T. A. KEETON

1262 East 37th St.

Oakland, Cal.

NOTICE

FOUND—A physician's grip containing instruments. Owner can have same by identifying them. Address Serbin Bros., 400 Castro street, San Francisco.

Valuable Service---Free to Physicians

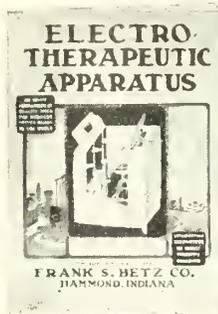
The progressive physician must keep posted on improved methods, new instruments and the correct price of his supplies.

THIS VALUABLE INFORMATION CAN BE OBTAINED FREE and without obligation, by merely sending your name and address on the coupon below.

BETZ MONTHLY BULLETINS furnish complete information on items of interest to the profession and if you are not already receiving these booklets, fill out the coupon and send it to us at once, and your name will be added to our mailing list.

REMEMBER THESE BOOKLETS COST YOU NOTHING AND PLACE YOU UNDER NO OBLIGATION WHATSOEVER.

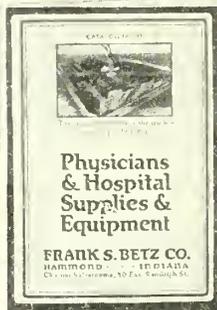
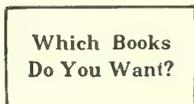
FRANK S. BETZ CO.
HAMMOND, INDIANA



No. 9



No. 9A



No. 20



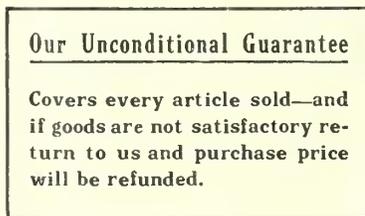
No. 7



No. 1



No. 12



No. 11

FRANK S. BETZ CO.
Hammond, Ind.

GENTLEMEN:—Without obligation to me you may place my name, on your mailing list for future issues of your monthly bulletins.

Send me the following:— Name..... Profession.....

Street.....

City..... State.....

Dr. King's Sanatorium

FOR TUBERCULOSIS

BANNING

CALIFORNIA

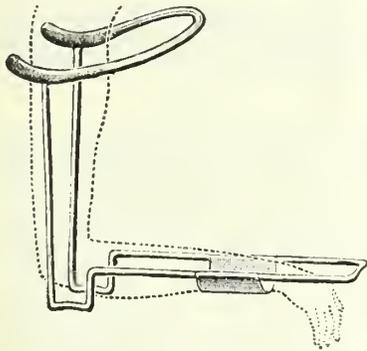


DR. J. C. KING'S SANATORIUM

Many years of successful results.
 Altitude: 2500 feet. Dry climate.
 Trained nurses. Excellent food.
 Send for Circular.

ALLAN L. BRAMKAMP, A. B., M. D.

JOHN C. KING, M. D.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones.

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.
 510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF
 ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL

X-RAY LABORATORY

Thomson Building
 Oakland

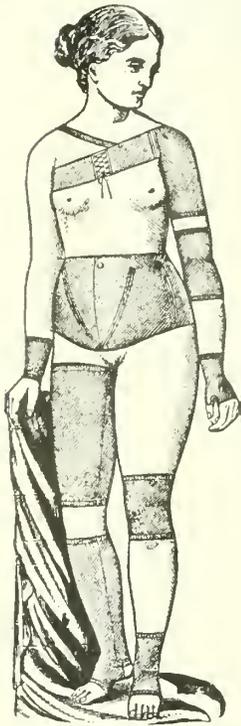
Widemann's Evaporated Goat Milk



Baby
 Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
 San Francisco, Cal.



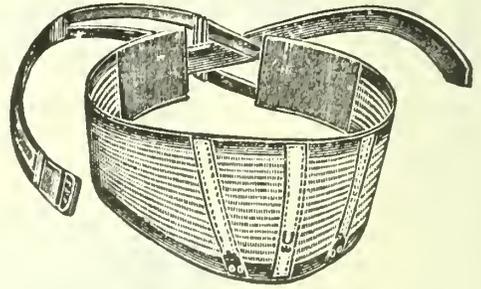
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS

TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

ORTHOPEDIC INSTITUTE

1661 Sacramento St., San Francisco

For the ambulatory treatment of patients by means of

Physical Remedies

Hours: 1 to 5 p. m. Phone Prospect 593
A. GOTTLIEB, M. D., Director

DOCTORS' COLLECTIONS

Free Memberships.

Collections on Commission.
Protection Against Delinquents.
Engraved Membership Certificate.
Retention of Patronage.

Thousands are already members. Why not you?
Universal endorsement. References, National
Bank of Commerce, Bradstreets, or publishers
of this Journal

SEND FOR LIST BLANKS.

Physicians and Surgeons Adjusting Assn.
Railway Exchange Bldg., Desk 1
Kansas City, Mo.

(Publishers Adjusting Association, Inc., Owners Est. 1902)

ON THE AUSTRIAN FRONT

The ambulance driver—Do you know what is the Italian national air?

The reserve lieutenant (sniffing) — Garlic, I believe.

A TIDE-OVER DIET

For sick and convalescent adults. Used in homes, sanitariums and hospitals.

DENNOS FOOD

A safeguard in Infant Feeding
The whole wheat milk modifier

Samples and literature furnished free to the profession on request

DENNOS FOOD CO.
Portland, Oregon

BENZYLETS

lower high blood pressure

by their vaso-dilator action.

Including cases with nephritis, but barring arterio-sclerosis for obvious reasons, the reported results are excellent.

No bad effects have been found from prolonged use of this safe non-narcotic opium substitute. Relief from the precordial pain is reported; even effective in angina, both pseudo and true.

Your druggist can supply them in boxes of 24.

BENZYLETS

SHARP & DOHME

The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

For particulars write

Bischoff's Surgical House
Dealers in Physicians and Hospital Supplies
1702-6 Telegraph Ave. Oakland, Cal.

MICROSCOPE EXCHANGE

Expert Repairing.

FOR SALE

- 1 B. & L. Microtome...\$50.00
- 1 B. & L. Microscope... 95.00
- 1 Reck Microscope..... 50.00
- 1 Leitz Microscope..... 70.00
- 1 Leitz Microscope.....110.00

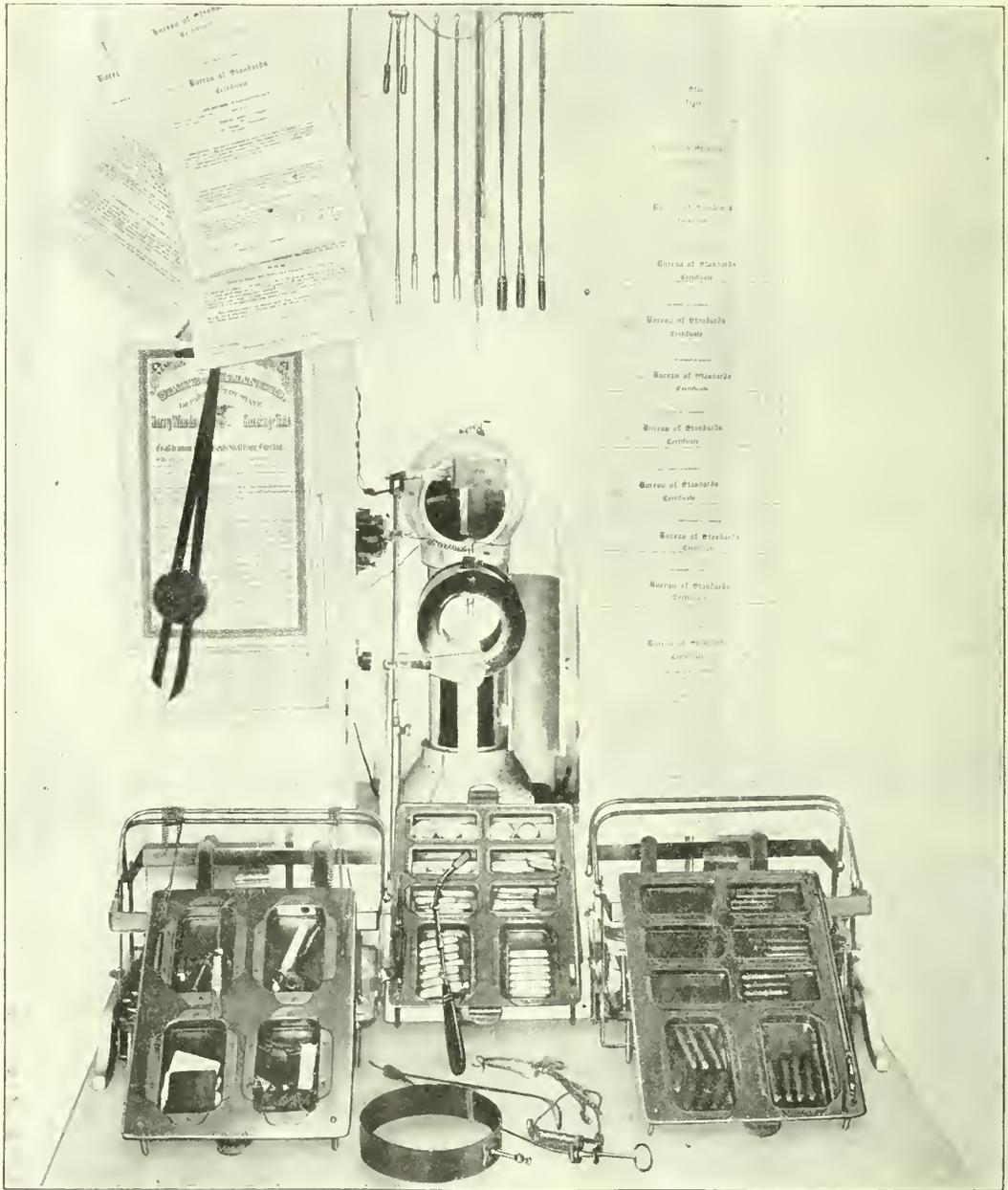
First-class condition.

WILLIAM O. HAMMER
35 Montgomery Street
San Francisco

Skin Lesions

RADIUM

Cancer



Incorporation Certificate of the Chicago Radium Institute 1912

Apparatus for Quantitative Measurement of Radium

Standardization Certificates Bureau of Standards Washington, D. C.

Applicators and Filters

FRANK H. BLACKMARR, M. D.

Telephones Majestic 7044 and 7045

1513-1517 Marshall Field Annex Building, 25 East Washington Street, Chicago, Illinois



New Victor Developments

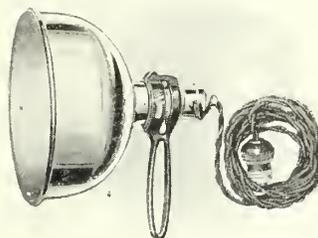
COMBINATION STEREO-PLATE SHIFTER—Instead of two separate apparatus, for Vertical and Horizontal stereo-radiographs respectively, this service is now available in one unit. Two sizes of plates can be used, 11 x 14 and 14 x 17. Is mechanically correct, easy to operate, conserves space.



“MULTIPLEX” STEREOSCOPE —

No more can it be said that viewing of stereo-plates causes eye strain. This new Victor model has every adjustment necessary to relieve it—even to bringing into perfect stereo vision plates which are out of alignment due to incorrect position at time of exposure. Two can study the same plates at the same time, each observer having an independent set of adjustments.

THERMO-THERAPY LAMP—Here is a therapeutic lamp that does not have a focal or “burning” point. This Victor lamp throws its rays evenly over the entire field. Regardless of the distance lamp is held from part under treatment, it is always comfortable to patient—an even distribution of heat that is entirely therapeutic in effect.



FULGURATION COIL—This is the Victor response to the demand for a specialized apparatus for treatment of bladder tumors with high frequency fulguration. Delivers a smooth current that is without any faradic sensation. The first and only fulguration coil with a *fulguration meter* to indicate relative intensity of heat produced, thereby making possible the duplication of technique. Utmost refinement of control.

Separate descriptive bulletin on each of the above now ready. Write us which are of interest to you and further details will be promptly forthcoming.

VICTOR X-RAY CORPORATION

General Offices and Factory:
Jackson Blvd. and Robey St.
CHICAGO

Sales Offices and Service Stations in all principal cities



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

108 N. State Street
CHICAGO

50 Union Square
NEW YORK

LONDON
PARIS

NEOSALVARSAN

(Nearsphenamine-Metz)

| | |
|--------------------------|--------|
| .15 gram per ampule..... | \$.75 |
| .3 " " " | 1.00 |
| .45 " " " | 1.25 |
| .6 " " " | 1.50 |
| .75 " " " | 1.75 |
| .9 " " " | 2.00 |

10% discount on 10 or more ampules
20% discount on 50 or more ampules
(May be assorted sizes)

FREE OFFER

"AMERICAN JOURNAL OF SYPHILOLOGY"

"ARCHIVES OF DERMATOLOGY
AND SYPHILOLOGY"

Subscription to either for one year FREE with your initial order for 25 or more ampules. Subscription prices \$7.00 and \$6.00 respectively. The above offer is limited to one month. Those wishing to take advantage of this FREE OFFER must send remittance with orders.

Shipped anywhere. Cash with order.
All orders shipped by first-class
mail same day received. I pay the
postage

JOSEPH J. McDONALD

1148 First Nat'l Bank Bldg. - CHICAGO, ILL.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg. NEW YORK 100 Av. & 42 St.

Patronize Your State Journal Advertisers

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | C. W. Page, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiapella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | G. M. O'Malley, Crockett..... | C. T. Wetmore, Hercules..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. H. Pettis, Fresno..... | C. O. Mitchell, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | W. H. Walker, Willows..... | Bi-monthly. |
| Humboldt County Medical Society..... | E. J. Hill, Eureka..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | C. S. Brooks, El Centro..... | ..... |
| Kern County Medical Society..... | C. S. Compton, Bakersfield..... | F. A. Hamlin, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | ..... |
| Los Angeles County Medical Society..... | Rea Smith, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, San Rafael..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Samuel Leroy Rea, Ukiah..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | D. W. Zirker, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | Martin McAulay, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | J. B. Rogers, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | W. C. Du Bois, Santa Ana..... | J. C. Crawford, Santa Ana..... | 1st Tuesday. |
| Placer County Medical Society..... | B. Woodbridge, Roseville..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Bon O. Adams, Riverside..... | Paul E. Simonds, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | W. A. Beattie, Sacramento..... | H. Zimmerman, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. F. Whitmer, Colton..... | Chas. L. Curtiss, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | Lyell C. Kinney, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | H. E. Alderson, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | A. H. Wilmar, Paso Robles..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | C. S. Stevens, Santa Barbara..... | H. E. Henderson, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | T. L. Blanchard, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | L. M. Liles, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | Fred H. Tebbe, Weed..... | C. W. Nutting, Etna Mills..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | F. W. McKibbin, Oakdale..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Ely, Red Bluff..... | ..... |
| Tulare County Medical Society..... | A. W. Preston, Tulare..... | E. R. Zunwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | ..... |
| Ventura County Medical Society..... | T. W. Mott, Santa Paula..... | W. R. Livingston, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | M. B. Bransord, Woodland..... | Chas. H. Christal, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M. D.
Medical Director

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT ~ ACCURATE ~ DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *This should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhoea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diacetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California State Journal of Medicine

ISSUED MONTHLY OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Vol. XIX, No. 2

FEBRUARY, 1921

\$1.00 a Year

CONTENTS

| | | | | | |
|---|----|--|----|--|----|
| Editorials | 17 | Bilateral Nephrolithiasis. By G. W. Hartman, M. D., and S. A. Goldman, M. D. | 59 | Deformities of the Hand Acquired After Accidents. By A. Gottlieb, M. D. | 72 |
| Special Article | 53 | Urinary Incontinence and Its Operative Repair. By J. R. Dillon, M. D. | 61 | Examinations of Employees in Industry. By C. A. Dukes, M. D. | 71 |
| Concerning the Size of Women. By Clelia Ducl Moshier, M. D. | 53 | Industrial Medicine. By Robt. T. Legge, M. D. | 64 | Roentgen Treatment of Uterine Hemorrhage. By Lyell C. Kinney, M. D. | 76 |
| Relationship Between Trauma and Malignant Disease from an Industrial Standpoint. By W. Ophüls, M. D. | 54 | Industrial Surgeon—What He Is—What He Can Be—What He Should Be. By G. M. Barrett, M. D. | 68 | Heat the Most Practical and Promising Treatment in Uterine Carcinoma. By J. F. Percy, M. D. | 78 |
| How Can Medical Service Be Improved? By Morton R. Gibbons, M. D. | 56 | | | | |

(Contents continued on page IX)

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

FRED I. LACKENBACH BIOLOGIC DEPOT BACTERIOLOGICAL · SEROLOGICAL AND CHEMICAL WORK

SCIENCE

IN ORDER TO FACILITATE PROMPT AND EFFICIENT SERVICE TO THE MEDICAL PROFESSION AND TO INSTITUTIONS, WE HAVE CONCLUDED ARRANGEMENTS WITH MR. FRED I. LACKENBACH, 908 BUTLER BUILDING, SAN FRANCISCO, CALIFORNIA, WHO WILL CARRY AN AMPLE STOCK OF ARSPHENAMINE AND NEOARSPHENAMINE (D. R. L.) AT ALL TIMES, AND ACT AS SPECIAL DISTRIBUTING AGENT FOR OUR PRODUCTS IN CALIFORNIA. THESE DRUGS WILL IN FUTURE, THEREFORE, BE READILY OBTAINABLE DIRECT FROM HIM AT LOWEST CURRENT PRICES.

DERMATOLOGICAL RESEARCH LABORATORIES

NEOARSPHENAMINE (D. R. L.) ARSPHENAMINE (D. R. L.)

| | | | |
|--------------------|--------------------|-------------------|-------------------|
| 90 Ampule . \$2.00 | 45 Ampule . \$1.25 | 6 Ampule . \$1.50 | 3 Ampule . \$1.05 |
| .75 Ampule . 1.75 | .30 Ampule . 1.00 | .5 Ampule . 1.40 | .2 Ampule . .80 |
| .60 Ampule . 1.50 | .15 Ampule . .75 | .4 Ampule . 1.25 | .1 Ampule . .50 |

(10% Discount on 10 Tubes. 20% Discount on 100 Tubes or More)

SPECIAL QUOTATIONS TO PUBLIC HOSPITALS AND FREE CLINICS ON APPLICATION

INDUSTRY

908 BUTLER BUILDING
SAN FRANCISCO

CABLE ADDRESS "SERVMS S.F." · TELEPHONE SVTTER 3122

Luer Syringe Price List

| Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each | Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each |
|-------------------------|----------|---------------|--------------------|---------------------|-----------------|----------|---------------|--------------------|---------------------|
| Tuberculin..... | ¼ c.c. | \$2.25 | \$1.65 | \$1.40 | Scrum..... | 5 c.c. | \$2.50 | \$1.90 | \$1.55 |
| Tuberculin..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Scrum..... | 10 c.c. | 3.25 | 2.40 | 2.05 |
| Gray Oil..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Arsphenamine.. | 20 c.c. | 4.50 | 3.25 | 2.75 |
| Tuberculin..... | 1 c.c. | 2.00 | 1.50 | 1.25 | Eccentric Tip.. | 20 c.c. | 5.00 | 3.75 | 2.75 |
| Subcutaneous... 1½ c.c. | 1.25 | .90 | .80 | Arsphenamine.. | 25 c.c. | 5.00 | 3.75 | 3.25 | |
| Precision..... | 1½ c.c. | 2.00 | 1.50 | 1.30 | Arsphenamine.. | 30 c.c. | 5.75 | 4.35 | 3.75 |
| Subcutaneous... 2 c.c. | 1.40 | 1.00 | .80 | Eccentric Tip.. | 30 c.c. | 6.75 | 5.35 | 3.75 | |
| Precision..... | 2 c.c. | 2.25 | 1.75 | 1.50 | Arsphenamine.. | 50 c.c. | 8.00 | 6.00 | 5.00 |
| Lachrymal..... | 3 c.c. | 3.50 | 2.65 | 2.25 | Eccentric Tip.. | 50 c.c. | 9.00 | 7.00 | 5.00 |
| Vaccine..... | 3 c.c. | 2.00 | 1.45 | 1.25 | Arsphenamine.. | 100 c.c. | 12.00 | 9.00 | 7.50 |
| Dental..... | 4 c.c. | 2.25 | 1.65 | 1.35 | Eccentric Tip.. | 100 c.c. | 13.00 | 10.00 | 7.50 |

☞ Return both parts. New Syringe supplied at cost of broken part.

Fred I. Lackenbach. Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

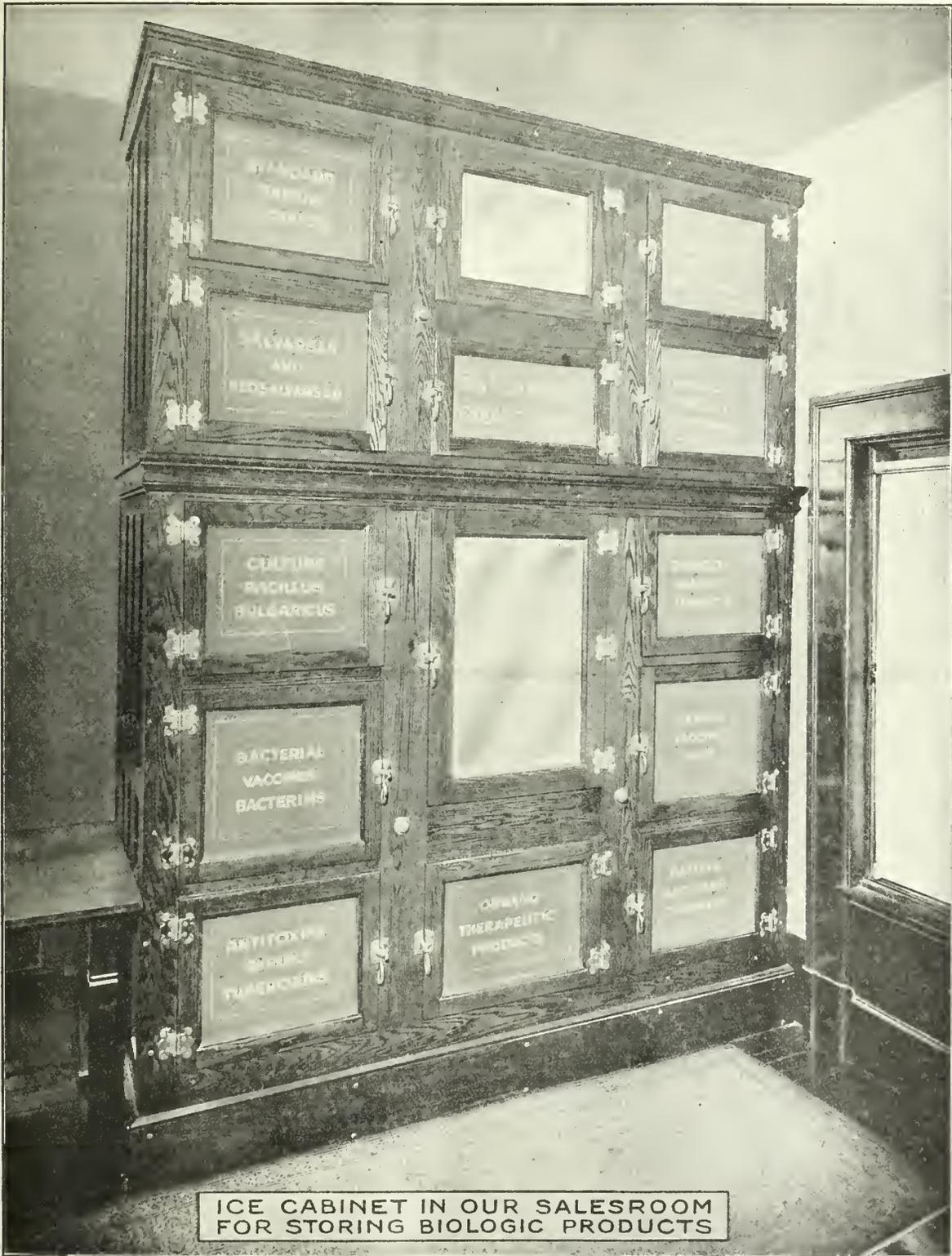
135 STOCKTON STREET
TEL. SUTTER 3122

FRED I. LACKENBACH BIOLOGIC DEPOT

Our Salvarsan Service

- ☞ We supply complete Sterilized Outfit consisting of graduated reservoir, tubing, observation tube, Luer glass connection and two suitable needles; also 250 c.c. flasks of freshly double-distilled water and sterile salt solution with 15% sodium hydroxide, exactly enough to neutralize the dose of Arsphenamine—all for \$6.00. The Salvarsan solution may be effected in the flask containing the double-distilled water.
- ☞ When you have your own outfit we can send the freshly double-distilled water, sterile salt solution and NaOH q. s. for \$1.00.
- ☞ For concentrated solutions we supply 20 c.c. Luer Syringe outfit with suitable needles, mixing flask containing freshly double-distilled water, all sterilized and ready for use—at \$6.00 complete.
- ☞ These outfits and solutions are the very best that money can buy. They are the culmination of years of practical experience and painstaking effort.
- ☞ In San Francisco we loan out gravity outfit at \$2.50 and 20 c.c. Luer outfit at \$1.50 complete.
- ☞ For immediate use we prepare the solution for \$1.00. The actual cost of preparation, however, is only 50c. since the flask of double-distilled water would be 50c.

Wassermann Test \$5.00



ICE CABINET IN OUR SALESROOM FOR STORING BIOLOGIC PRODUCTS

Biologic Products should be kept cool and dark at a temperature of 40°-50° F.

Fred I. Lackenbach, Biologic Depot
 SAN FRANCISCO
 MAINTAINS TWO OF THESE IMMENSE STORAGE REFRIGERATORS

Fred I. Lackenbach receives all supplies direct from the producer at frequent intervals. Druggists and Jobbers with limited output can not possibly maintain this efficient service.

Vaccine Virus to properly retain its efficacy should be kept on ice

GONOCOCCUS GLYCEROL-VACCINE

Stable and Effective

Advantages:

- 1 - Will not deteriorate. 2 - Free from autolytic products.
- 3 - In preliminary trials has not produced toxic reactions even in large doses.

The types of cases reported to us as favorably influenced by Gonococcus Glycerol-Vaccine are chronic gonorrhoeal infections, including gonorrhoeal rheumatism, epididymitis, prostatitis and posterior urethritis.

Further Information on Request

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE NEW YORK

B&B Surgical Dressings

Maximum Precautions

B & B Sterile Dressings are sterilized in the containers after being sealed. They are sterilized by live steam following a vacuum.

To prove efficiency, center fibers from the packages are being constantly subjected to incubator tests.

Thus *B & B Cotton and Gauzes* come to you utterly sterile if the package is intact. You may be sure of that.

Both are packed in our Handy Package. One cuts off what is needed without touching the balance.

B & B Plaster Paris Bandages come wrapped in water permeable paper which need not be removed in the wetting.

B & B Formaldehyde Fumigators conform to U. S. Public Health Service standards.

Thus with all *B & B* products. We have spent 27 years in perfecting them for you. Each conforms to the highest standards. And in many ways you will find these products better than you expect.

BAUER & BLACK

Chicago New York Toronto

Makers of Sterile Surgical Dressings
and Allied Products



B & B Zinc Oxide Adhesive

This is a fine example of *B & B* efficiency. Three masters of adhesive direct the making. They employ modern and costly apparatus. You will find here your ideal adhesive. Try it.



Each Pad Sealed

Each pad of *B & B Handy Fold Plain Gauze* is sealed in a parchment envelope. The envelopes are sterilized again after packing. The cartons contain 10 or 30 pads.



One Cake Equals 6 lbs. Carbolic

B & B Surgeon's Soap shows a phenol coefficient of 51.98. A one per cent lather corresponds in bactericidal strength with a 50% solution of carbolic acid. One cake represents the germicidal power of six pounds carbolic acid. It is the only type of cake soap which can properly be called germicidal.

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH—That vaccination against all three infections does definitely protect against all three.
- FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count
Write for Therapeutic Index Price List

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients).

Includes medical and nursing care, board and laundry.

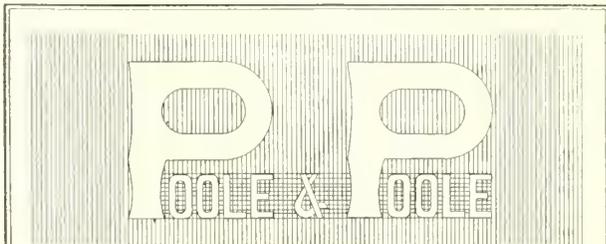
Medical Director, Dr. Philip King Brown

APPLY OFFICE

AREQUIPA

401 Medical Bldg., San Francisco

Phone Franklin 844



SPECIALIZING IN MAKING & FITTING ABDOMINAL BELTS
SURGICAL CORSETS, ELASTIC HOSE, TRUSSES, ARCH SUPPORTS

Extensive study and long experience give us that rare skill and knowledge so essential for the correct making and proper fitting of the surgical appliances in which we are specializing.

Please refer your patients to us. They will be tactfully and skillfully treated at reasonable cost.

FREE KEY INSURANCE

Write to us for free German silver identification tag carrying reward which will facilitate the prompt return of your keys or grip if lost.

POOLE & POOLE

785 Flood Bldg., San Francisco, Cal.
Phone Kearny 2405

BUILDS
AND
RESTORES TISSUE

OVALTINE

To build and restore tissue to the best advantage requires that the materials for construction and restoration be in such form and such proportion that, on the one hand, the anabolic function may proceed unhindered, and, on the other, that a nice adjustment and distribution of the constructive elements may be brought about.

"Ovaltine" with its wealth of essential food elements, easy of digestion and assimilation; with its natural iron, calcium and phosphorus constituents; with its enzymic principles and accessory food factors; provides constructive and restorative material for every tissue of the body.

THE WANDER COMPANY

37 South Wabash Avenue
Chicago, Ill.

Works: Villa Park, Ill.

Samples and literature mailed to physicians on signed request.

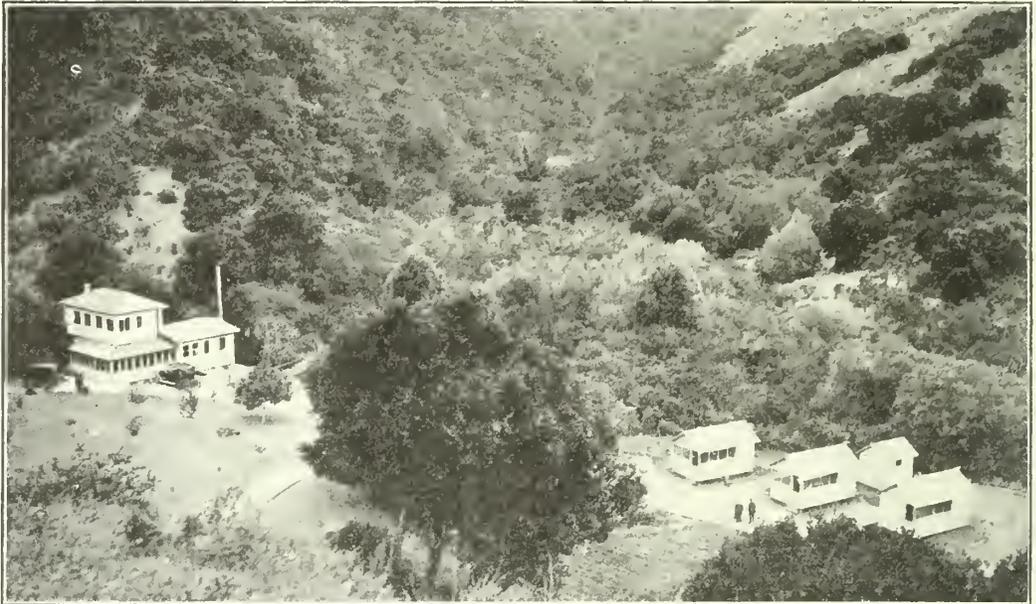
Obtainable from druggists in 8 oz., 17 oz., 5 lb., and 10 lb. tins.



CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*
□



SOME OF THE COTTAGES

□
*Rates
Reasonable*
□
Climate Ideal
□

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR

FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN C. YATES, San Diego, President

JOHN H. GRAVES, San Francisco, President-Elect.

WM. DUFFIELD, Los Angeles, 1st Vice-Pres. JOSEPH CATTON, San Francisco, 2d Vice-Pres.
SAXTON POPE, San Francisco, Secretary ALFRED C. REED, San Francisco, Editor

COUNCILORS

First District—San Diego, Riverside, Orange, San Bernardino and Imperial Counties.

J. C. KING, Banning
(Term expires 1921)

Second District—Los Angeles, Santa Barbara, Ventura and Kern Counties.

WM. H. KIGER, Los Angeles
(Term expires 1922)

Third District—San Luis Obispo and Monterey Counties.

T. C. EDWARDS, Salinas
(Term expires 1921)

Fourth District—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties:

GEORGE H. AIKEN, Fresno
(Term expires 1921)

Fifth District—Santa Clara, San Mateo, San Benito and Santa Cruz Counties.

FRANK H. PATERSON,
San Jose
(Term expires 1923)

Sixth District—San Francisco County.

C. G. KENYON, San Francisco,
Chairman
(Term expires 1922)

Seventh District—Alameda, Contra Costa, San Joaquin and Calaveras Counties.

EDW. N. EWER, Oakland
(Term expires 1923)

Eighth District—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.

JAMES H. PARKINSON,
Sacramento
(Term expires 1922).

Ninth District—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.

ANDREW W. HOISHOLT,
Napa
(Term expires 1923)

COUNCILORS AT LARGE:

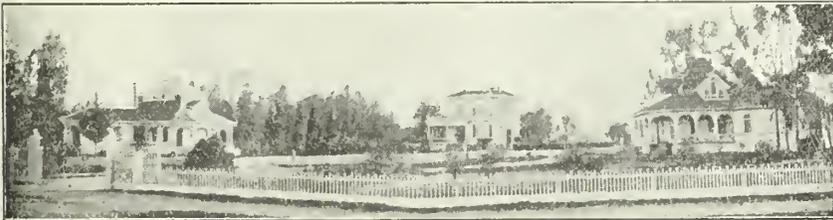
O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); H. A. L. Ryfkogel, San Francisco (term expires 1921); C. Van Zwalenburg, Riverside (term expires 1923).

CALIFORNIA STATE JOURNAL OF MEDICINE

BUTLER BUILDING, SAN FRANCISCO

CONTENTS -- Continued

| | | |
|--|--|--|
| Nasal Catarrh. By C. A. Phelan, M. D. 81 | Fresno 87 | Clinical Department, University of California Medical School, Children's Dept. 91 |
| Chairman's Address—Advance in Business Methods. By P. A. Jordan, M. D. 84 | Los Angeles 87 | Notices 91 |
| Book Reviews 86 | Sacramento 89 | Pay Your State Tax 91 |
| Correspondence 86 | San Diego 89 | American Congress on Internal Medicine 91 |
| County Societies: | San Francisco 90 | Obituary—Dr. A. W. Hoisholt.. 92 |
| Alameda 87 | San Joaquin 90 | New Members 92 |
| Contra Costa 87 | Santa Clara 90 | |
| | Northern District Medical Society 90 | |



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.

HYDROPATHIC
DEPARTMENT



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

*Dr. Zander's Mechanical Swedish
Apparatus,
Hydrotherapy, Massage and Manipulations
Electrotherapy, Thermo-penetration,
Oxygen Vapor Inhalations, Heliotherapy,
Proctoclysis and Corrective-Gymnastics*

We are equipped with every known modern mechanical device of scientifically proven efficiency for the relief of suffering. We maintain every facility for recuperation that is to be found in the best of European Spas.

Our Institute was primarily designed for the relief of persons suffering from chronic disorders, and our equipment is especially assembled for their treatment.

SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED.

The Physicians Institute endeavors to meet a great and necessary co-operative role with the Physician and Surgeon of San Francisco in their fight with intractable morbid conditions. The Physicians Institute is simply a unique and efficient therapeutic agent available to all physicians who want to retain their patients, but desire to place them in the hands of specially trained technicians who are equipped with the required modern therapeutic appliances and who make a specialty of coping with conditions as indicated above.

War-trained "aids." Graduate nurses.

Best references. Inspection invited.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

N. A. Karpaty, B. Sc.,
Director.

SYPHILO-DIAGNOSIS

DARKFIELD FOR SPIROCHETES

WASSERMANN:

TWO ANTIGENS—COLD AND WARM REACTION

LANGE COLLOIDAL GOLD REACTION

NOGUCHI REACTION

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES

133 GEARY STREET, SAN FRANCISCO

Telephone SUTTER 1015

The Seymour Sanatorium

Banning



California

THE multiplied lessons of experience teach that in tuberculosis while outward improvement may manifest itself quickly, true healing occurs slowly, and that for a durable result time is an element of great importance. Owing to this fact, financial considerations have a vital bearing on the outcome.

Many with brightest outlook, through making unduly large expenditures in the beginning, have been forced into an early abandonment of the health program, and have had their hopes completely wrecked. Others, with equal or less chance, by laying their plans on a more conservative scale so that they were enabled to put up a finish fight, have won permanent victory.

At the SEYMOUR SANATORIUM the rate of \$100.00 covers every health necessity and opportunity is afforded for obtaining the fullest health value for each month's expenditure.

Accommodation in a comfortable, cozy bungalow; the best of nourishing food, tastefully prepared—with tray service at the regular rate; attentive trained nursing; daily medical attendance employing all safe scientific measures in support of Nature's efforts; in a homelike environment amid beautiful surroundings, with unexcelled year-round climatic conditions—and where contentment and hopefulness hold sway—these are some of the attractive features.

DR. C. E. ATKINSON

Medical Directors

DR. H. E. MORRISON



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Ætna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Ætna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Ætna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Ætna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Ætna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1920 - - - - \$188,113,036.63

If you are not acquainted with the Ætna Agent in your town write direct to

J. R. MOLONY, Manager, Western Branch

Department "C," 333 Pine Street, San Francisco, Calif.

ÆTNA LIFE INSURANCE COMPANY

AFFILIATED WITH

ÆTNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

ROBERT A. PEERS, Medical Director

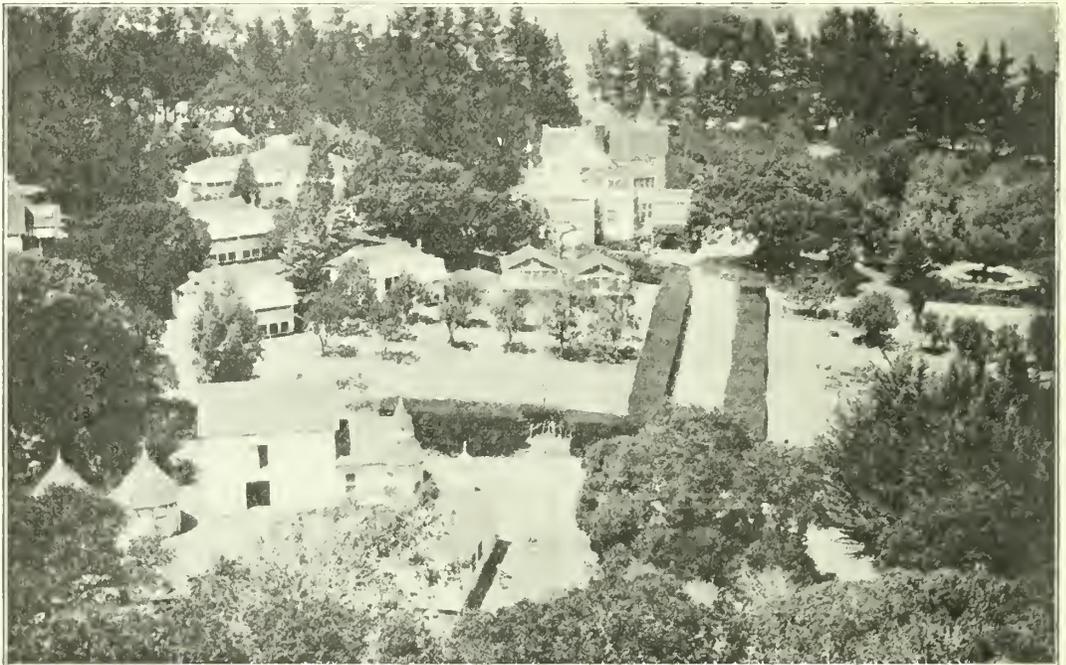
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

"QUALITY"

The Primary Requisites of an ARSPHENAMINE Preparation are
LOW TOXICITY — SOLUBILITY — HIGH THERAPEUTIC VALUE

ERGO—IN THE MANUFACTURE OF

ARSAMINOL and NEO-ARSAMINOL

our paramount aim is to combine the unequalled qualities of the

THREE { TOXICITY—reduced below government standards.
 IN { SOLUBILITY—immediate, in cold distilled water.
 ONE { THERAPEUTIC VALUE—enhanced by full arsenic content.

Subject to U. S. Government and our own Laboratory tests—also clinically, the VITAL test.

Our Arsphenamine products have been exhibited with gratifying results by
 Genito-Urinary members of the California profession.

Descriptive literature and Price List on application.

TAKAMINE LABORATORY, Inc.

Takamine Building

Laboratory and Works:
 CLIFTON, NEW JERSEY

12 Dutch St., New York, N. Y.

Cable Address:
 "Jokichi," NEW YORK

Solution Arsphenamine—Lowy

- ☞ Is a carefully prepared and alkalinized solution of Arsphenamine ("606").
 It is furnished in a form available for instant use in the office or at the bedside.
- ☞ Shipped complete in an individual box containing solution, hanger, with rubber tubing, filter and needle packed in sterilized containers.
- ☞ Accepted by the Council, A. M. A.; Tested and Licensed by the U. S. P. H. S.

80 Cc. (0.4 Arsphenamine) . . . \$3.25 120 Cc. (0.6 Arsphenamine) . . . \$3.50

Huile Grise Injectable (Dr. L. Lafay, Paris)

- ☞ French Grey Oil—For intensive Mercurial treatment. One grain mercury as metal is exhibited in 2½ minims—six grains to the c.c. Given deep into the gluteus once weekly. In 5 c.c. vials at \$2.50. Our special Luer Grey Oil Syringe complete at \$3.50.

Fred J. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
 CABLE "SERUMS" S. F.

SAN FRANCISCO

135 STOCKTON STREET
 TEL. SUTTER 3122

Mellin's Food

is a

Maltose and Dextrins product

containing in addition to these readily digested carbohydrates

Proteins from wheat and barley

Salts as they occur naturally in these grains
and

Potassium bicarbonate in an amount calculated to meet the potassium requirement of the artificially fed infant

Mellin's Food Company,

Boston, Mass.

JUST PUBLISHED

PSYCHO-PATHOLOGY

By Edward J. Kempf, M.D., Clinical Psychiatrist to St. Elizabeth's Hospital (formerly Government Hospital for the Insane), Washington, D. C., author of "The Autonomic Functions and the Personality." 762 pages + xxiii, 6 $\frac{3}{4}$ by 9 $\frac{3}{4}$, with 97 illustrations. Printed on beautiful India Tint paper, and bound in silk cloth binding, with gold stamping. Price, \$9.50.

A complete book, elaborating the new epoch in the study and treatment of the adjudicated insane.

Abnormal behavior is one of the most interesting topics for study. When the principles underlying it are mastered many mysteries that have perplexed medical men, criminologists, and lawyers are solved. Doctor Kempf has rendered a real service to physicians in the writing of "PSYCHOPATHOLOGY."

The book is handsomely printed on India Tint paper, and the illustrations are beautiful specimens of the engraver's art

 Just sign the attached coupon and mail, and the book will be sent at once.

C. V. Mosby Company

MEDICAL PUBLISHERS

ST. LOUIS

U. S. A.

Send for a copy of our new 96-page catalog

PARTIAL TABLE OF CONTENTS

The Physiological Foundations of the Personality; The Psychology of the Family; The Universal Struggle for Virility, Goodness and Happiness; Influence of Organic and Functional Inferiorities upon the Personality; Mechanistic Classification of Neuroses and Psychoses Produced by Distortion of Autonomic-Affective Functions; The Mechanism of the Suppression or Anxiety Neuroses; Repression or Psychoneuroses, Their Mechanisms and Relation to Psychoses Due to Repressed Autonomic Cravings; Benign Compensation or Regression Neuroses, with or without Dissociation of Personality; Manic-Depressive Psychoses; Elimination or Simulation for Wish-Fulfillment in Affective Crises; Pernicious Repression Compensation Neuroses; The Psychopathology of Paranoia; The Psychopathology of the Acute Homosexual Panic; Acute Pernicious Dissociation Neuroses; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Defensive Hatred, Eccentric Paranoid Compensations and Pernicious Deterioration; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Crucifixion and Catastrophic Adaptations to the Repressed Cravings; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Hebephrenic Adaptations; Predominance of Excretory Erotic Interests; Reconsideration of the Conditioned Autonomic Affective Determinants of Abnormal Variations of Behavior; Psychotherapeutic Principles.

C. V. Mosby Co. (Calif.)

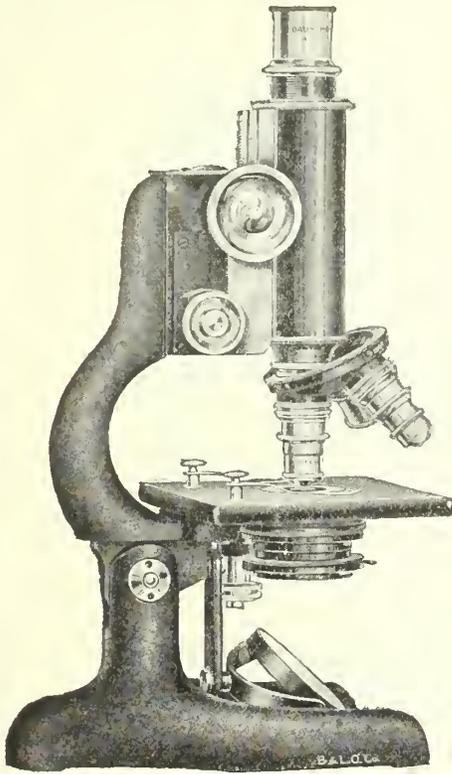
St. Louis

Send me the new book by Edward J. Kempf, M. D., "PSYCHOPATHOLOGY," for which I enclose \$9.50, or you may charge to my account.

Name.....

.....

.....



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

**BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA**

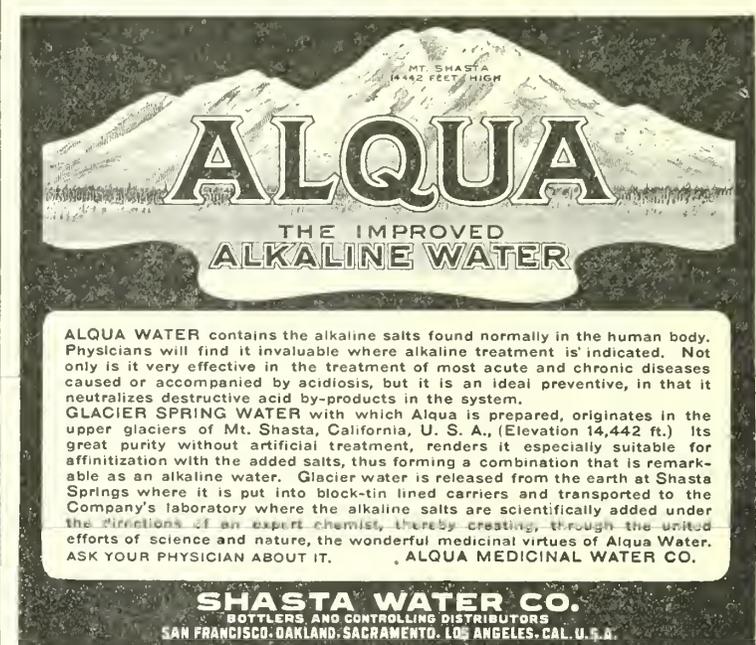
Remember the Dates
of the State Meeting
May 10 - 11 - 12 - 1921

Coronado

Make Your Reservations

Direct with the Hotel

Coronado



ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLERS AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO, OAKLAND, SACRAMENTO, LOS ANGELES, CAL. U. S. A.

Grageroff & Papazoni

Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

Readily Soluble

Practically Free from Toxicity

Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you order direct from

H. A. Metz Laboratories, Inc.
122 Hudson Street,
NEW YORK CITY

Adrenalin in Medicine

5—In Combination with Local Anesthetics

THE importance of Adrenalin in the induction of local anesthesia can be estimated by a realization of the fact that one of the major prerequisites of an efficient local anesthetic is that it be compatible with Adrenalin.

In the rôle of synergist to the anesthetic Adrenalin serves a threefold purpose: it blanches the tissues, giving the surgeon a clear field of operation; it confines the anesthetic to the area into which it is infiltrated, preventing absorption and possible toxic manifestations; it intensifies and prolongs the anesthesia by diminishing the circulation, thus obviating the dilution, oxidation and rapid destruction of the anesthetic in the tissues.

The question of the quantity of Adrenalin to be injected with the local anesthetic solution deserves special consideration on the part of the surgeon. It should be remembered that after the effects of the injection of a *large* dose of Adrenalin have been dissipated, after the local ischemia has subsided, the patient is liable to have a secondary hemorrhage, owing to a reaction in the walls of the

vessels which manifests itself in obstinate dilatation. Many instances of sloughing are attributable to the strangulation ensuing upon the injection of too much Adrenalin. It is incumbent upon the surgeon, therefore, to regulate carefully the Adrenalin content of the anesthetic solutions he employs.

In laparotomies and other major operations in which an ounce or more of anesthetic solution is required the proportion of Adrenalin need not exceed 1 in 100,000. This concentration can be approximated by adding five drops of the 1:1000 Adrenalin to the ounce of anesthetic solution. When smaller quantities are to be injected it is permissible to increase the Adrenalin proportion to 1:50,000 or 1:40,000.

The most satisfactory results are obtained by first sterilizing (boiling) the anesthetic solution and then, after it has partly cooled, to add the requisite number of drops of Adrenalin 1:1000. This permits of gratifying flexibility; the surgeon is enabled to vary the proportion of Adrenalin in the anesthetic fluid at will and with a minimum of inconvenience.



PARKE, DAVIS & COMPANY

QUARTZ MERCURY VAPOR ULTRA VIOLET LIGHT

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, specula, endoscopes, proctoscopes, laryngoscopes pharyngeal, nasal, urethal, vaginal, rectal, uterine lenses and radiating tubes for the application of ultra-violet emanations.

THE PAMBRUN DEEP PENETRATION FILTER SYSTEM

Service in technique
Service in instruction

Service in installation
Service in maintenance

KROMAYER UNIT
WATER COOLED

ALPINE SUN UNIT
AIR COOLED

L. B. PAMBRUN

220 Phelan Bldg.

Phone Sutter 2322

San Francisco, U. S. A.

Representing.
Hanovia Chemical & Mfg. Company
of Newark, N. J.

Prices and Terms on Application

San Joaquin Valley Radium Institute of FRESNO, CALIF.

This institution is equipped with the most modern type of emanation apparatus and necessary appliances for treatment of all diseases amenable to radium therapy.

We invite inquiries and wish to cooperate with the medical profession with reference to radium therapy.

GEO. H. SCIARONI, M. D.,
Medical Director,
108-112 Forsyth Bldg.,
Fresno, Calif.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

Ethical

Reliable

DIAGNOSTIC LABORATORIES

OF

GRANT & WILSON

PATHOLOGISTS

BACTERIOLOGICAL
CHEMICAL
CLINICAL
METABOLIC
PATHOLOGICAL
SEROLOGICAL

327 MERCHANT'S NATIONAL BANK BLDG.

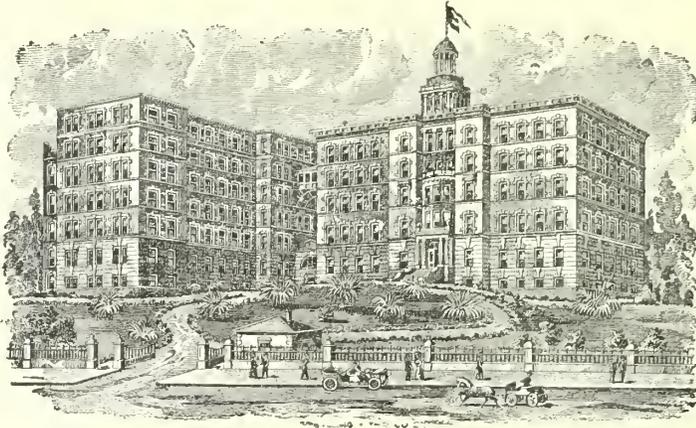
Los Angeles, Cal. Phone 64536

Prompt

Accurate

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

ABILENA WATER

is an Ideal Natural Eliminant

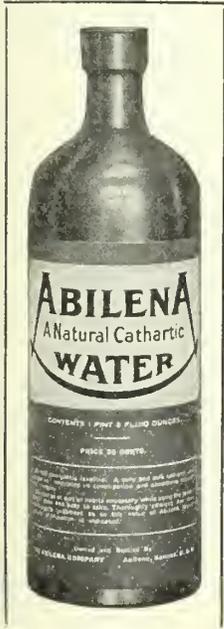
It is especially valuable in all acute, febrile disorders, including influenza.

Its action is rapid, stimulating the flow of intestinal secretions without irritation.

It is mild, non-gripping in action, not disagreeably saline in taste, and is actively laxative or purgative according to the dose administered.

Doctor: Have you ever used ABILENA WATER in your practice? If not, we will send you a FREE sample package on request.

On sale at drug stores



The Abilena Sales Co.

Abilene, Kan.

CALCREOSE

Tuberculosis

For more than twenty years Dr. Beverly Robinson of New York has been using and praising the use of creosote in the treatment of pulmonary tuberculosis. It acts as an intestinal antiseptic. Part of the creosote will be excreted by the lungs, inhibiting the growth of secondary infectious micro-organisms, and in so much certainly acts for good in pulmonary tuberculosis. Handbook of Therapy, Ed. 3 The Journal A. M. A., pp. 186-187.



CALCREOSE is a mixture containing in loose chemical combination, approximately equal parts of creosote and lime. CALCREOSE has all of the pharmacologic activity of creosote, but does not cause any untoward effect on the gastro-intestinal tract. CALCREOSE may be taken in comparatively large doses—in tablet form or in solution—without any disagreeable by-effects; therefore it is particularly suitable for the treatment of these patients.

Write for samples and literature

The Maltbie Chemical Company

NEWARK, NEW JERSEY

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

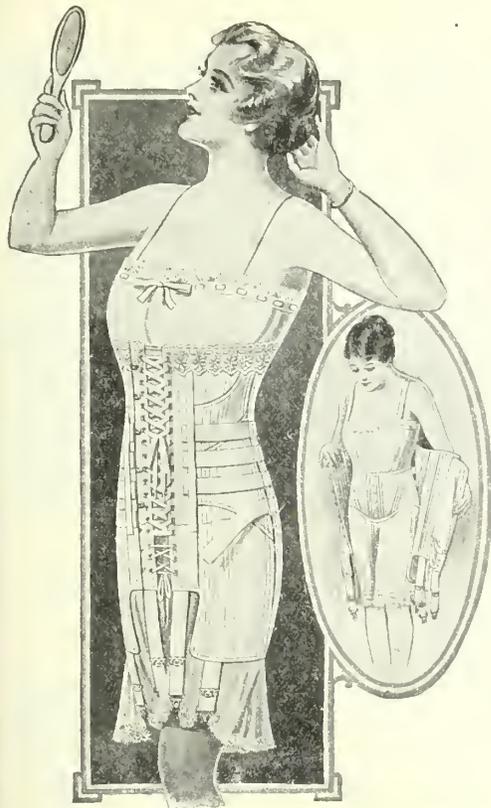
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





TRAVERS

Surgical Co.

SAN FRANCISCO, CAL.

Phone Sutter 4651 372 Sutter Street

SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES

Travers' Surgical Corset

This Corset of special benefit for correcting Entroposis. It is laced in front with an inner belt to support the abdomen as desired and is a most perfect corset. This corset is recommended by physicians for use after operations and for many ailments.

Expert fitter in charge.

HEADQUARTERS

Our facilities make us headquarters for the Endocrine Gland and Organotherapeutic products.



Anterior Pituitary Liquid
1 c. c. and 1
c. c. ampoules 6
in box.

Anterior Pituitary
powder tablets. Anterior
Pituitary Powder and Tabs.
Posterior Pituitary
Powder and Tabs.

Corpus Luteum
(Iodine powder) and
2 and 5 grain Tabs,
all 2 and 5 grain
capsules.

Insulin, U. S. P.
in 100, granular and
powder.

Parathyroidin, U. S. P.
in powder.

ELIXIR OF ENZYMES is a palatable preparation of the proteolytic and curdling ferments that act in acid medium. It is recommended as an aid to digestion and as a gastric tonic generally.

Elixir of Enzymes is of special service in correcting faulty proteid metabolism which is one of the principal causes of auto-intoxication.

Elixir of Enzymes is an excellent adjuvant and vehicle for exhibiting iodids, bromids, salicylates and other drugs that disturb the digestive functions. One dram of Elixir Enzymes will carry 46 grains of potassium iodid or 45 grains of sodium salicylate or 17 grains of potassium bromid.

Elixir of Enzymes contains the curdling ferment and may be used for making junket or curds and whey. Add one teaspoonful of the Elixir to half pint of lukewarm milk, stir thoroughly and let stand till cool.

For minimizing the organic disturbances and eliminating the corrosive effect of potassium iodid on the mucous membrane of the stomach as well as disguising the taste, the following combination is recommended:

Potassium Iodid, 2 ounces.

Distilled water, enough to make two fluid ounces.

To exhibit, for instance, 20 grains of potassium iodid three times daily, use one teaspoonful of Elixir of Enzymes, one teaspoonful of the above solution to half pint of lukewarm milk; stir thoroughly and let stand until cool. Take one-third of this quantity as a dose. This junket should be made up fresh every morning.

ARMOUR AND COMPANY

5702

SAVE MONEY ON YOUR **X-RAY** SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

Fine Grades in Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary San Francisco, Cal.

NOTICE

Physician's widow disposing of sur-
gical instruments and microscope. For
inspection at

TRAVERS SURGICAL CO.
372 Sutter St., San Francisco

Walters Surgical Company

"THE HOUSE THAT AIMS TO SERVE"

441 SUTTER STREET

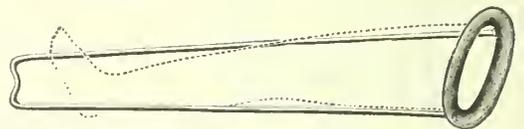
Between Powell and Stockton Streets

Phone Douglas 4017

SURGICAL INSTRUMENTS HOSPITAL SUPPLIES

- TRUSSES
- ABDOMINAL SUPPORTERS
- ELASTIC HOSE
- ORTHOPEDIC APPLIANCES

We Carry All the Late Patterns of U. S. Army
Splints, Including Jones', Thomas'
and Hodgens'



THOMAS' KNEE SPLINT

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
Member of the Federal Reserve System. Member of the Associated Savings Banks of San Francisco
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

DECEMBER 31, 1920

| | | | |
|----------|-------------------------|------------------------------|--------------|
| Assets | \$69,878,147.01 | Capital Actually Paid Up | 1,000,000.00 |
| Deposits | 66,338,147.01 | Reserve and Contingent Funds | 2,540,000.00 |
| | Employees' Pension Fund | | \$343,536.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch

GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

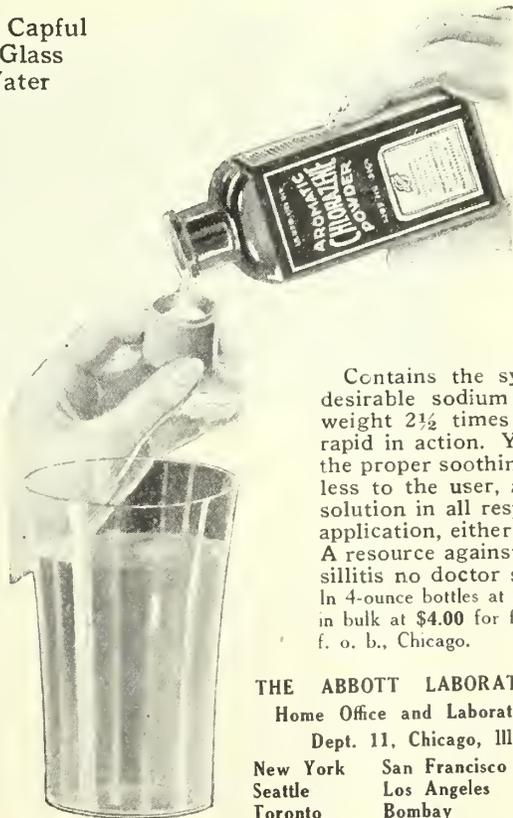
Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

One Capful
to a Glass
of Water



**The Most Effective
Antiseptic Gargle
FOR
SORE THROAT is
MADE WITH
AROMATIC
CHLORAZENE
POWDER**

Contains the synthetic chlorine-bearing agent (5%) with desirable sodium salts and eucalyptol added. Weight for weight $2\frac{1}{2}$ times more powerful than phenol and far more rapid in action. Yields a strong antiseptic solution of just the proper soothing alkalinity for best results, yet harmless to the user, and pleasant to taste and smell; a solution in all respects happily suitable for throat application, either as a spray, gargle or douche. A resource against epidemic "colds" and tonsillitis no doctor should overlook. In 4-ounce bottles at \$7.20 a dozen, net; also in bulk at \$4.00 for five pounds, net and f. o. b., Chicago.

THE ABBOTT LABORATORIES

Home Office and Laboratories

Dept. 11, Chicago, Ill.

| | |
|----------|---------------|
| New York | San Francisco |
| Seattle | Los Angeles |
| Toronto | Bombay |

SEND FOR A FREE SAMPLE

Just clip off this corner, paste it on your
letterhead and return to us for a gen-
erous sample vial of AROMATIC
CHLORAZENE POWDER.
Do it now!

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

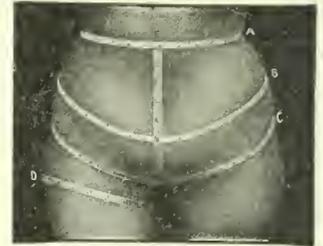


Diagram for Measuring

FOR SALE

Tonsil and adenoid instruments complete. Two Tyding snares and head lamp. Set of eye instruments—some nose instruments.

Room 630 Butler Bldg., San Francisco.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES

Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street

Between Post and Sutter Streets
SAN FRANCISCO

FOR SALE

Private estate of 17 acres; excellent water supply; sheltered wooded hillside; extensive view. Convenient to electric railroad and highway; easy distance from Oakland. Good improvements.

Ideal location for Sanatorium

For Full Particulars Write

MANAGER, OSTRAND RANCH
R. F. D., Concord, Cal.



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400
SAN FRANCISCO

In Case of Hernia

Prescribe the

Benjamin Natural Support

Each support is made complete for each individual case; the rule being to make pads soft and covering a large enough surface that opening is kept closed. Face of pad made to contour of body.

Non-elastic webbing about hips; pressure applied by flat spring over pad. Hernia is thereby retained without impairing circulation. No need for tight belt or hip-spring.

Comfortable as well as Secure!

When you think of a support for any form of hernia,—think of

M. J. BENJAMIN

Exclusive Maker the Benjamin
Natural Support

Suite 214 Douglas Bldg., Cor. 3rd and Spring
Hours, 9:00 to 5:00. Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES
1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.
Phone Franklin 4556

Tuberculosis

ALTA SANATORIUM

DR. BURT F. HOWARD
Medical Director

MRS. B. E. TAYLOR
Nurse-Matron

Alta, Placer Co., California

The fury of the jury—

Who Can Render the Biggest Verdict?

"The juries have simply gone crazy about large verdicts; seeming to vie with each other to see who can give the biggest verdict."

Juries Gone Wild

"The juries at this term of court have gone absolutely wild. It seems that there is a kind of bolshevism, or something of that kind, pervading the minds of the jury."

Influenced by Personal Feelings —not Evidence

"We were unfortunate in not being able to secure a jury of men strong enough not to be materially influenced by sympathy and prejudice."

Gave no Attention to Court's Instructions

"Of course, contrary to the instructions of the court, but characteristically without effect on the jury, the jury took the physical fact of the failure to cure, as conclusive evidence of negligence and so found for the plaintiff."

Jury Gives Man \$10,000 for Loss of Right Eye

"_____ was granted \$10,000 for the loss of his right eye by a jury sitting before Judge _____, of the Superior Court, yesterday. The suit was brought against Dr. _____ on the grounds that he did not sterilize his instruments or even wash his hands before performing an operation."

Dentist Must Pay \$9,000 for Death

A verdict for \$9,000 was returned by the Circuit Court against Dr. _____, dentist, who was charged with responsibility for the death of a patient.

It was claimed the Doctor was using an electric drill when a heavy thunder-shower broke, and the drill, affected by the electrical disturbance, transmitted an augmented current of electricity that burned Mrs. _____ mouth and gave her a shock, from which it was contended lockjaw developed. She died two days later. It was alleged the Doctor failed to have the wire, which transmitted the power to the drill, properly insulated. The Doctor denied this.

Specialized Service Makes Manifest Its Need

"Some of our profession are excited over a large verdict against a Dentist. The affair was discussed a couple of weeks ago at a meeting of the District Dental Society. The Dentist had protective insurance in another company. Their lawyer knew nothing of Dental terms or Dental Science, and I have always contended that an attorney to win these cases must have much dental and medical knowledge."

*For Medical Protective Service
Have a Medical Protective Contract*

The Medical Protective Co.

of

Fort Wayne, Indiana

Professional Protection Exclusively

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB

REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

DR. WM. B. WRIGHT, JR.

Practice limited to Nose and Throat.

Formerly associated with Dr. Justus
Matthews of Minneapolis.

1123 Chapman Bldg., Los Angeles.

Telephone 65943

"We Get the Coin" "We Pay"



Special attention to doctor's accounts.
Personal calls throughout Southern California.
No Collection—No Charge.
We pay monthly.
Our rate one-half of the amount collected.

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.
426 So. Spring Street, Los Angeles, California

KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of
nervous and mental diseases. Approved diagnostic
and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with forced ventilation. Elegant
appointments. Bath rooms en suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to
KENILWORTH SANITARIUM
Kenilworth - - - Illinois



SOUTHERN SIERRAS SANATORIUM

BANNING, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT



DR. E. S. SMITH—Medical Directors—DR. J. P. FREY

DOCTORS' SMOCKS,

OPERATING GOWNS

and

COATS

DENTISTS' JACKETS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed

SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.

A. S. W. GRUNDY

SAN FRANCISCO

970 Sutter Street, Phone Franklin 8338

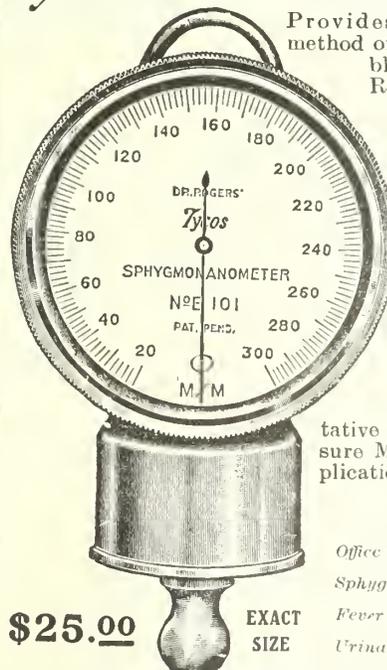
944 Hyde Street, Phone Franklin 3946

OAKLAND

2213-2215 Broadway, Tel. Oakland 1902

Next Key Route Inn

Tycos SPHYGMOMANOMETER



Provides a simple method of determining blood pressure. Recognized as embodying every essential possible in a portable manometer. Made of non-corrosive materials. No friction. Stationary dial. Self verifying.

Tycos authoritative Blood Pressure Manual on application.

Office Type
Sphygmomanometer
Fever Thermometers
Urinary Glassware

\$25.00

EXACT
SIZE

Taylor Instrument Companies, Rochester, N. Y.

#1-M



St. Francis Hospital and Training School for Nurses

N. E. Corner BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

**Five Operating Rooms
Every Modern Appliance**

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY
Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco
Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

Dickson-Bull Artificial Limbs

Known Everywhere

Orthopedic Appliances
For Every Requirement

Surgeons Assured
Co-operative Service

22nd and Telegraph Avenue
Oakland, Cal.
Tel. Oakland 8438



Cystoscopy Urethroscopy
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

HEPATIC INSUFFICIENCY

Overcome in many respects by

GLYCOTAURO,
H. W. & D.

(Ox-bile, Purified and Standardized
Supplied as Enteric Coated Tablets
72 in a Tube

Usual Dose: 2 Tablets Thrice Daily
"The True Cholagogue"

Increases the Flow and
Fluidity of Human Bile

A Tube for Trial Upon Request

Hynson, Westcott & Dunning
BALTIMORE

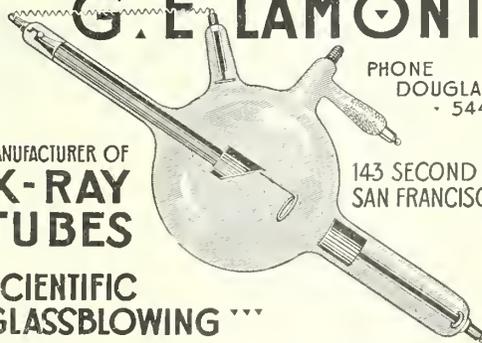
G. E. LAMONT

PHONE
DOUGLAS
- 5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING**



**We Strive to Please Both
Physician and Patient**

**BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 DEPENDABLE STORES 14
SAN FRANCISCO**



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

PHONE MARKET 8048

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions, mental and nervous diseases.

This sanitarium is open to all reputable physicians. Sound-proof rooms. Hydropathic equipment.

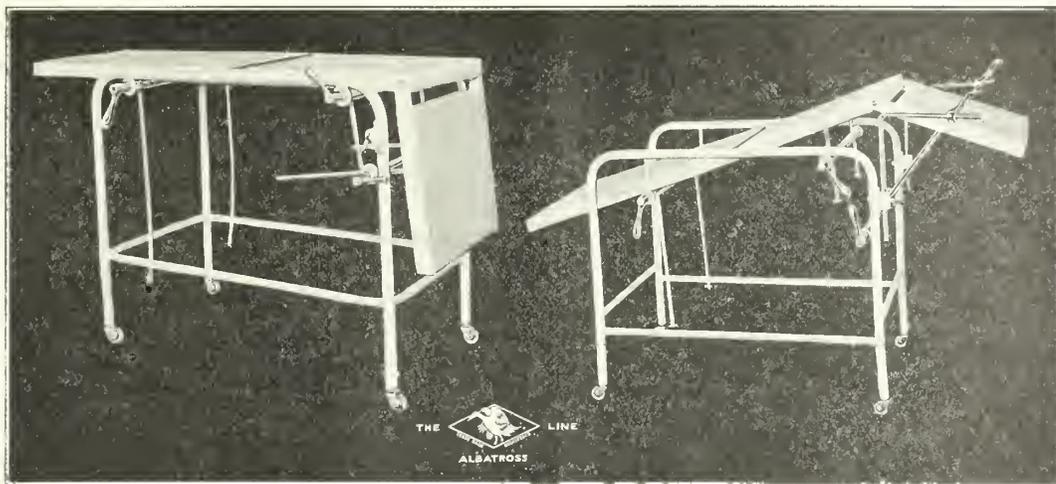
The advice of the hospital staff is always at the disposal of the patients' physicians.

The Sign of the Albatross

ON ASEPTIC HOSPITAL AND PHYSICIANS' FURNITURE IS YOUR PROTECTION

It Assures You That All Equipment Bearing This Mark Is

CORRECTLY DESIGNED, SUBSTANTIALLY MADE, ATTRACTIVE IN APPEARANCE, DURABLE AS TO FINISH



No. 143 Examining Table

See Our Furniture at Our Dealers

Write for Catalog Showing the Complete Line

ALBATROSS METAL FURNITURE COMPANY

PORTLAND

(A Pacific Coast Product with a National Reputation)

OREGON

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of
the previous calendar year, also 10 cents; two years
old, 20 cents; three years old, 25 cents; in other words,
5 cents additional is charged for each year preceding the
last calendar year.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. Currency should
not be sent unless the letter is registered. Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority or making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

USEFUL IN NERVOUS DISORDERS

“Horlick’s”

The Original Malted Milk

1. Served hot, as a sedative in insomnia.
2. As a vehicle for the administration of
hypnotics.
3. In the dietetic treatment of neurasthenia.
4. For drug addicts, during the state of
withdrawal.
5. In the digestive and nervous weakness
of invalids, convalescents and the aged.

Avoid Imitations

For printed matter and samples address

HORLICK'S - Racine, Wis.

Arsphenamine Supply Depot M. L. ADLER & CO.

Dealers in PHYSICIANS' and HOSPITAL SUPPLIES

703-704 New Pantages Theatre Bldg.
Seventh and Hill Sts.

Phones: 63339
67067

Los Angeles, Cal.

PRICES TO PHYSICIANS

| SALVARSAN-METZ | | NEO-SALVARSAN- METZ | |
|---------------------------|--|----------------------------|--|
| 0.1 Gm....\$.60 per Amp. | | 0.15 Gm....\$.75 per amp. | |
| 0.2 " " .75 " | | 0.3 " " 1.00 " | |
| 0.3 " " .85 " | | 0.45 " " 1.25 " | |
| 0.4 " " 1.00 " | | 0.6 " " 1.50 " | |
| 0.5 " " 1.25 " | | 0.75 " " 1.75 " | |
| 0.6 " " 1.50 " | | 0.9 " " 2.00 " | |
| 1.0 " " 2.00 " | | 1.5 " " 3.00 " | |

10% discount on orders of 10 or more. May be assorted.

ARSENOBENZOL NEO-ARSENOBENZOL

| Dermatological Research | | Laboratories. | |
|---------------------------|--|----------------------------|--|
| 0.1 Gm....\$.50 per Amp. | | 0.15 Gm....\$1.00 per Amp. | |
| 0.2 " " .85 " | | 0.3 " " 1.25 " | |
| 0.3 " " 1.05 " | | 0.45 " " 1.50 " | |
| 0.4 " " 1.25 " | | 0.6 " " 1.75 " | |
| 0.5 " " 1.40 " | | 0.75 " " 1.85 " | |
| 0.6 " " 1.50 " | | 0.9 " " 2.00 " | |

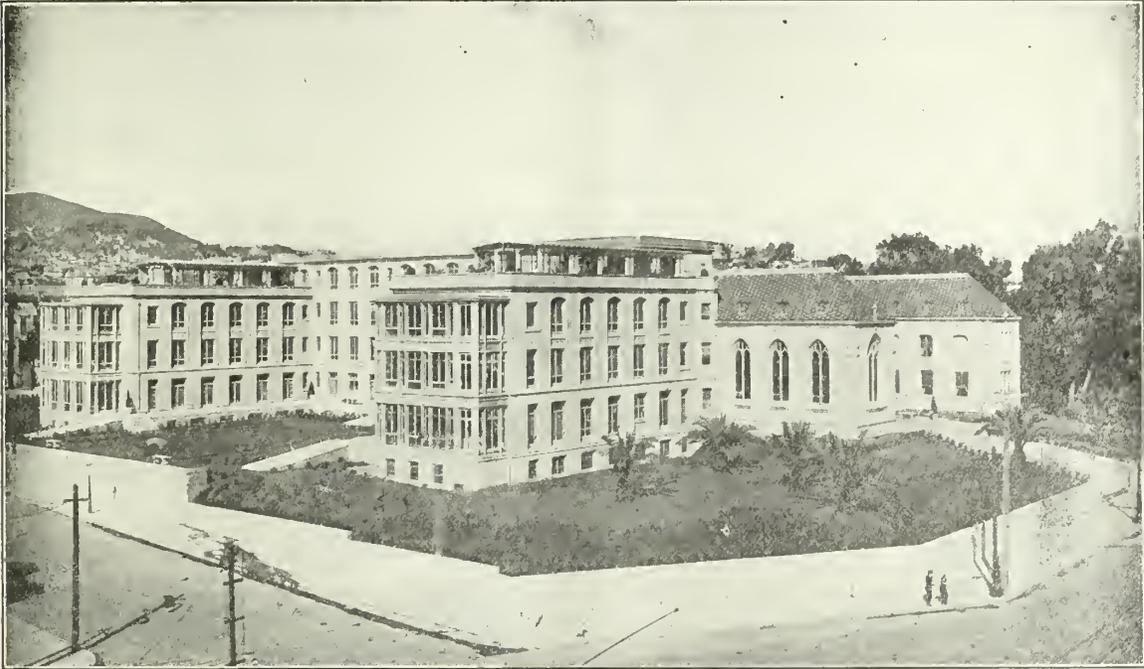
10% discount on orders of 10. 15% on 25 or more.

SOLUTION ARSPHENAMINE-LOWY

A Solution of Arsphenamine Carefully
Prepared and Properly Alkalinized

S. A. L. 80 cc. (4 decigrams Arsphenamine) Price \$3.25
S. A. L. 120 cc. (6 decigrams Arsphenamine) Price 3.50

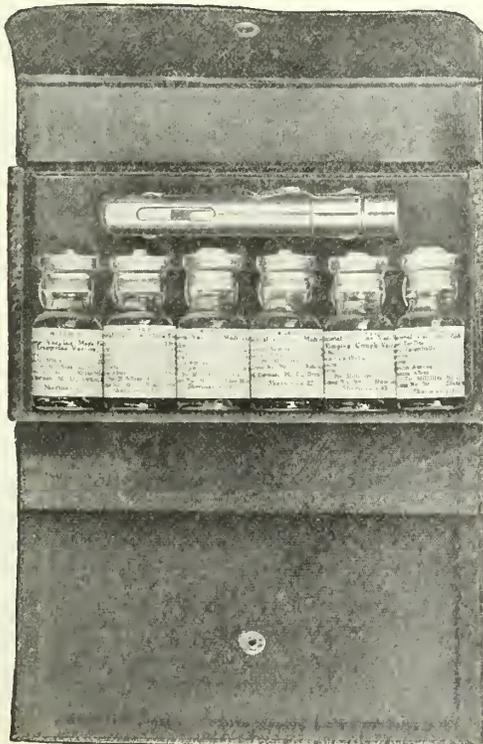
We supply these products at the lowest prices,
consequently it is necessary that payment for same
accompany each order or we will send C. O. D.

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. Associate Staff—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. Consulting Staff—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. Pathologist—E. V. Knapp, M. D. Roentgenologist—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,
W. H. HILL, M. D., Resident Physician.

**SHERMAN'S
VACCINE CASE**

The best immunizing response in Pneumonia is obtained during the first twenty-four hours after the initial chill. Every hour being vitally important, successful immunologists make inoculations in Respiratory Infections at their first call.

Be prepared; carry an assortment of Sherman's Polyvalent Vaccines and self-sterilizing syringe in this convenient case.

Your dealer will be pleased to supply you.

G. H. Sherman, M. D.

DETROIT - - MICHIGAN

Largest Producer of Stock and Autogenous Vaccines



Treat Your Rabies Patients at Home

WITH

RABIES VIRUS, LILLY

A Safe Treatment for Administration by the Patient's Physician

ADVANTAGES

1. A high degree of immunity.
2. Harmless (treatment free from complications, lessened reaction.)
3. Uniformity.
4. The patient's time and money are economized.
5. It is available for prompt institution of treatment at home by the family physician.
6. Standardization.

Rabies Virus, Lilly, is supplied in syringe containers emulsified and ready for instant use. Your druggist can secure the first three doses from the nearest Lilly depot; the remaining eleven doses will be supplied from Indianapolis, one daily, until the complete treatment of fourteen doses has been administered.

Write for a Booklet on Rabies and Its Treatment

ELI LILLY & COMPANY, Indianapolis, U. S. A.

NEW YORK

CHICAGO

ST. LOUIS

KANSAS CITY

NEW ORLEANS



Infant Feeding

Diet Materials

An Easily Assimilable Carbohydrate Element for Baby's Food

MEAD'S DEXTRI-MALTOSE (Dextrins and Maltose) is assimilated by infants in much greater amounts than cane sugar or milk sugar before reaching the limit of tolerance.

It is also the form of sugar least liable to cause indigestion, diarrhoea and other digestive disturbances.

The fact that MEAD'S DEXTRI-MALTOSE is ethically dispensed and its use, except on physicians' prescriptions is discouraged, naturally creates a favorable impression among the profession.

We invite investigation of the suitability of MEAD'S DEXTRI-MALTOSE for YOUR bottle fed babies and will gladly send samples and full information regarding its use.

SOME OF OUR INTERESTING LITERATURE IS LISTED BELOW

"Slide Feeding Scale." "Key for Modifying Cow's Milk." "Very Young Infants." "Diets for Older Children." "Diets for Nursing Mothers." "Prescription Blanks." "Instructions for Expectant Mothers."

MEAD JOHNSON & CO.

EVANSVILLE,

IND. U.S.A.

THE MEAD JOHNSON POLICY

MEAD'S DEXTRI-MALTOSE IS ADVERTISED ONLY TO THE MEDICAL PROFESSION. NO FEEDING DIRECTIONS ACCOMPANY TRADE PACKAGES. INFORMATION REGARDING ITS USE REACHES THE MOTHER ONLY BY WRITTEN INSTRUCTIONS FROM HER DOCTOR ON HIS OWN PRIVATE PRESCRIPTION BLANK.



*Again, with unfailing regularity,
paying its annual visit—
Influenza (La Grippe)*

And Influenza time is truly ATOPHAN time.

Here ATOPHAN can fully unfold its superior pain and inflammation relieving properties.

One or two tablets (7½ to 15 grains) two or three times per day, immediately after meals, readily alleviate respiratory congestion, headache, pain and stiffness of limbs and back.

And, remember, ATOPHAN does it without heart depression, constipation or kidney irritation.

In high and persistent fever, let a few doses of some more active antipyretic round out the good work of ATOPHAN.

U. S. A.—Made and Available Everywhere.

Sample and Literature from

SCHERING & GLATZ, Inc., 150 Maiden Lane, NEW YORK

WANTED

to buy part interest in going Sanitarium with view to full purchase. Address: Doctor R. O. B., care California State Journal of Medicine.

WANTED

Physician, fifteen years' experience, desires location south of Tehachapi. Address: Doctor W. A. L., care California State Journal of Medicine.

Palatable Non-Alcoholic

Benzyl Benzoate 20%

AROMATIZED SUSPENSION

(Made from VAN DYK & CO. brand)

Antispasmodic in ASTHMA and DYSMENORRHEA

Sizes: 2 oz., 4 oz., 16 oz. and 5 pints

New safe ANTISEPTICS:

PROFLAVINE—Van Dyk & Co. } Antipurulent
ACRIFLAVINE—Van Dyk & Co. } Antigonococcal

Sold in 1, 5, 10 grams and 1 oz. bottles

Write for Clinical data

United Synthetic Chemical Corporation

4 PLATT STREET :: NEW YORK, N. Y.

DR. H. BERT ELLIS

For twenty-five years in the Bradbury Building, in Los Angeles, has removed his offices to 1219 Marsh Strong Bldg. We are glad to note that he is feeling much better than in the early spring, but is only practicing for a couple of hours each morning.

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

Valuable Service---Free to Physicians

The progressive physician must keep posted on improved methods, new instruments and the correct price of his supplies.

THIS VALUABLE INFORMATION CAN BE OBTAINED FREE and without obligation, by merely sending your name and address on the coupon below.

BETZ MONTHLY BULLETINS furnish complete information on items of interest to the profession and if you are not already receiving these booklets, fill out the coupon and send it to us at once, and your name will be added to our mailing list.

REMEMBER THESE BOOKLETS COST YOU NOTHING AND PLACE YOU UNDER NO OBLIGATION WHATSOEVER.

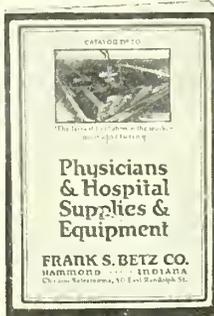
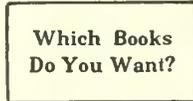
FRANK S. BETZ CO.
HAMMOND, INDIANA



No. 9



No. 9A



No. 20



No. 7



No. 1



No. 12

Our Unconditional Guarantee
Covers every article sold—and if goods are not satisfactory return to us and purchase price will be refunded.



No. 11

FRANK S. BETZ CO.
Hammond, Ind.

GENTLEMEN:—Without obligation to me you may place my name, on your mailing list for future issues of your monthly bulletins.

Send me the following:— Name..... Profession.....
Street.....
City..... State.....

Dr. King's Sanatorium

FOR TUBERCULOSIS

BANNING

CALIFORNIA

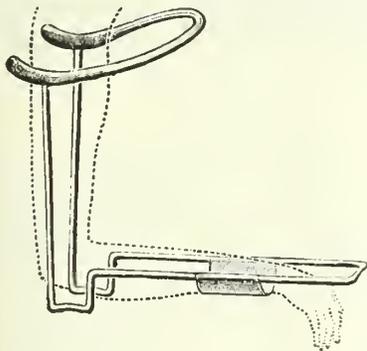


DR. J. C. KING'S SANATORIUM

Many years of successful results.
 Altitude: 2500 feet. Dry climate.
 Trained nurses. Excellent food.
 Send for Circular.

ALLAN L. BRAMKAMP, A. B., M. D.

JOHN C. KING, M. D.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones.

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL

X-RAY LABORATORY

Thomson Building
 Oakland

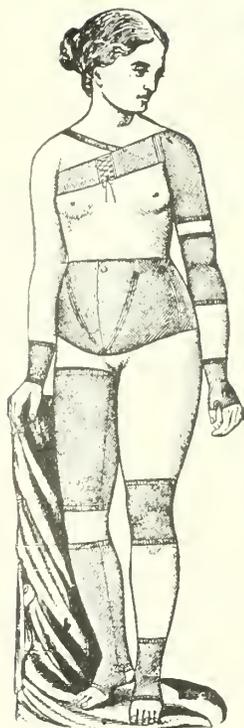
Widemann's Evaporated Goat Milk



Baby
 Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
 San Francisco, Cal.



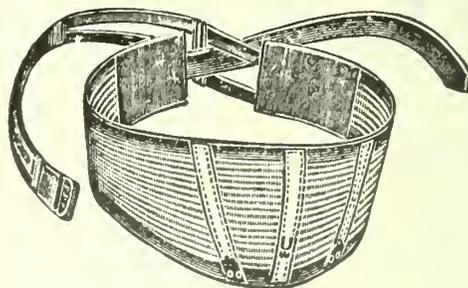
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS

TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

ORTHOPEDIC INSTITUTE

1661 Sacramento St., San Francisco

For the ambulatory treatment of patients by means of

Physical Remedies

Hours: 1 to 5 p. m. Phone Prospect 593
A. GOTTLIEB, M. D., Director

DOCTORS' COLLECTIONS

Free Memberships.

Collections on Commission.
Protection Against Delinquents.
Engraved Membership Certificate.

Retention of Patronage.

Thousands are already members. Why not you?
Universal endorsement, References, National
Bank of Commerce, Bradstreets, or publishers
of this Journal.

SEND FOR LIST BLANKS.

Physicians and Surgeons Adjusting Assn.

Railway Exchange Bldg., Desk 1

Kansas City, Mo.

(Publishers Adjusting Association, Inc., Owners Est. 1902)

FOR SALE

Complete office equipment and furniture. Have a strictly office practice, which could be greatly added to by accepting outside work. Receipts now at the rate of \$3000 per year. Located on most prominent corner of East Oakland, near factories and cotton mills. Price, cash, \$600. Also a new Chalmers car, used 1900 miles, price \$1800. Would like to include this in sale. Address: Dr. L. T. B., care California State Journal of Medicine, Butler Bldg., San Francisco.

Home School for Nervous and Backward Children

Most approved methods of physical and mental development through motor activities and sense training. Outdoor study and play the entire year.

Beautiful estate devoted to the welfare and happiness of the children. Ideal home life.

THE CEDARS

ROSS, MARIN CO., CAL.

C. C. Myers, Principal.

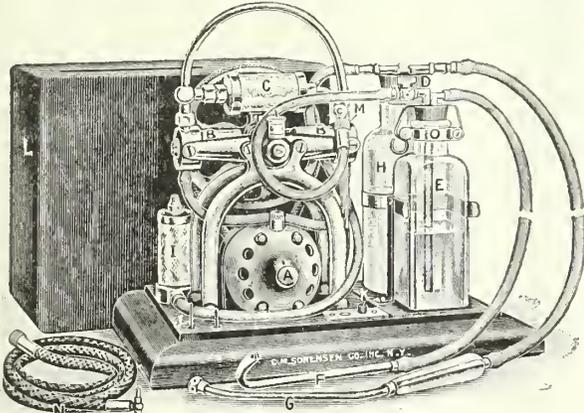
A Safe Analgesic

is benzyl-benzoate and "BENZYLETS" best present that drug in its purest form.

A summary of Macht's clinical reports on this drug in hypertension, dysmenorrhea, asthma and other conditions in which Opium was formerly used will be sent to physicians who address us at Baltimore; samples are also available.

BENZYLETS

SHARP & DOHME



The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

For particulars write

Bischoff's Surgical House
Dealers in Physicians and Hospital Supplies
1702-6 Telegraph Ave. Oakland, Cal.

MICROSCOPE EXCHANGE

Expert Repairing.

FOR SALE

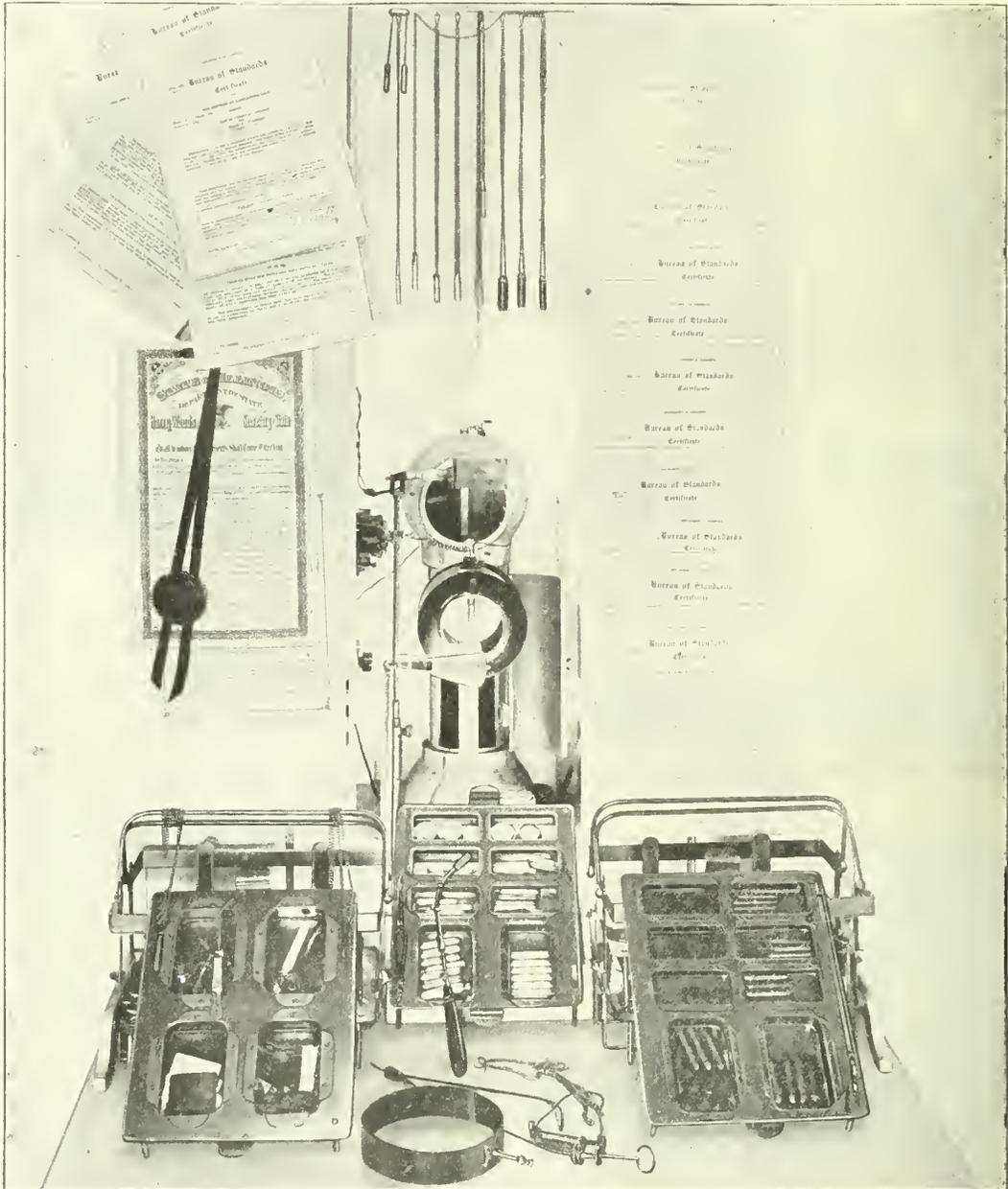
- 1 B. & L. Microtome.....\$50.00
- 1 B. & L. Microscope.... 95.00
- 1 Beck Microscope..... 50.00
- 1 Leitz Microscope..... 70.00
- 1 Leitz Microscope.....110.00

First-class condition.
WILLIAM O. HAMMER
35 Montgomery Street
San Francisco

Skin Lesions

RADIUM

Cancer



Incorporation Certificate of the Chicago Radium Institute 1912

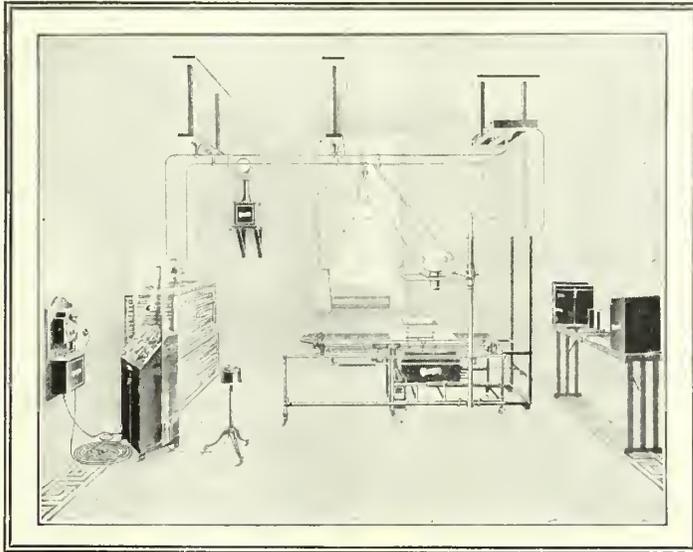
Apparatus for Quantitative Measurement of Radium
Applicators and Filters

Standardization Certificates Bureau of Standards Washington, D. C.

FRANK H. BLACKMARR, M. D.

Telephones Majestic 7044 and 7045

1513-1517 Marshall Field Annex Building, 25 East Washington Street, Chicago, Illinois

Sustained Quality

THE reward of conscientious manufacturing effort is never obscure—it is an ultimate realization.

The reputation enjoyed by a manufacturer today is, in the great majority of instances, the culmination of years of close adherence to a high standard.

The Victor Trade Mark on X-Ray and Electro-Physiotherapy Apparatus is universally recognized today as the symbol of quality—in materials, workmanship, design and performance.

A Victor announcement of some new development is accepted by the initiated at face value, for they know that conservatism prevails in the descriptive literature and that the product is offered the profession only after the best engineering skill has approved it.

Add to this the most comprehensive service organization of trained men specializing in this field, extending a personalized service to the user of Victor apparatus, then you have the predominant reasons for the prevalence of Victor installations.

Victor X-Ray Corporation

General Offices and Factory:

Jackson Blvd. at Robey St.

Chicago

Territorial Sales Distributors:

BUSH ELECTRIC CORPORATION, 334 Sutter Street, San Francisco, Cal.

VICTOR ELECTRIC LOS ANGELES, 930 Hill Street, Los Angeles, Cal.

DIRECTLY and INDIRECTLY

Liquid Peptonoids

IS AN IMPORTANT NUTRITIONAL AID IN THE SICK ROOM

DIRECTLY

BECAUSE it is acceptable when all other food is rejected *and* offers immediately available nitrogen *and* calories—in sufficient amounts to be *of* real importance in emergency feeding—THEREBY saving tissue waste *and* preventing collapse.

INDIRECTLY

BECAUSE it sets the digestive pendulum in motion, kindles the appetite *and* creates food tolerance—THUS speeding the moment when more substantial nourishment may be added to the dietary.

Also DRY PEPTONIDS (Soluble). 40% Protein—51.5% Carbohydrate

THE ARLINGTON CHEMICAL COMPANY
YONKERS, N. Y.

Thromboplastin, Squibb

is made in accordance with the direction of Dr. Alfred F. Hess, of the Laboratory of the New York City Department of Health. It contains kephalin, one of the active principles upon which the coagulating power of Thromboplastin depends. This kephalin is the lipoid substance described by Hirschfelder. It is rendered aseptic by the addition of 0.3 per cent tricresol, and standardized for haemostatic power. *Thromboplastin, Squibb* is supplied in 20 cc. vials. Two preparations are available, one for local application and one for hypodermic use. Orders should specify clearly which preparation is desired. Price per vial, \$1.00. A date well within the limit of potency is stamped on each vial. It should be kept cool.

Leucocyte Extract, Squibb

Prepared from healthy leucocytes according to Hiss. Indicated in general acute systemic infections where bacteriological diagnosis is uncertain. Also used in conjunction with the specific serums and vaccines in the treatment of Erysipelas, Meningitis, Lobar Pneumonia, Septicemia, Pyemia and Furunculosis.

In 10 cc. vials at \$2.00.

Literature Upon Request

TELEGRAPH OR MAIL YOUR ORDERS TO

908 Butler Building **FRED I. LACKENBACH** San Francisco, Cal.

Telephone Sutter 3122 (Private Exchange)



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

108 N. State Street
CHICAGO

50 Union Square
NEW YORK

LONDON
PARIS

NOTICE

Young doctor to take over established
country practice in Monterey County.
Good for \$5000 per year.

Nothing for sale.

Address: Box 308 Antioch, California.

WANTED

A ten kilowatt transformer for X-Ray
for 220 alternating current. Address
Dr. A. B., Care California State Journal
of Medicine.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg NEW YORK Fifth Av. 842 St.



BANKSIA PLACE SANITARIUM

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Superintendent, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

The Laboratories of
REED & CARNRICK
 Are Devoted to Making

Organic Physiological Products

Full particulars concerning these and answers to all queries will be gladly given. Please remember that in writing to REED & CARNRICK you will be answered by medical men thoroughly trained in hospital work and practice and not by theoretic laboratory workers.

REED & CARNRICK
 42-44-46 Germania Avenue
 Jersey City, N. J.

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiapella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | G. M. O'Malley, Crockett..... | C. T. Wetmore, Hercules..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | W. H. Walker, Willows..... | Bi-monthly. |
| Humboldt County Medical Society..... | E. J. Hill, Eureka..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | C. S. Brooks, El Centro..... | 3d Monday. |
| Kern County Medical Society..... | C. S. Compton, Bakersfield..... | F. A. Hamlin, Bakersfield..... | 1st Tuesday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | 1st & 3d Thursday except July, Aug., Sept. |
| Los Angeles County Medical Society..... | Rea Smith, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 2d Thursday each month |
| Marin County Medical Society..... | Arthur H. Mays, San Rafael..... | W. F. Jones, San Rafael..... | Monthly. |
| Mendocino County Medical Society..... | Samuel Leroy Rea, Ukiah..... | O. H. Beckman, Fort Bragg..... | 1st Thursday. |
| Merced County Medical Society..... | D. W. Zirker, Merced..... | Brett Davis, Merced..... | 1st Saturday. |
| Monterey County Medical Society..... | Martin McAulay, Salinas..... | T. C. Edwards, Salinas..... | 1st Tuesday. |
| Napa County Medical Society..... | J. E. Rogers, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | W. C. Du Bois, Santa Ana..... | J. C. Crawford, Santa Ana..... | 1st Saturday every 2d month. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 2d Monday. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 3d Tuesday. |
| Sacramento Society for Medical Improvement..... | W. A. Beattie, Sacramento..... | H. Zimmerman, Sacramento..... | 1st Monday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Tuesday. |
| San Bernardino Medical Association..... | C. F. Whitmer, Colton..... | Chas. L. Curtiss, Redlands..... | 2d and 4th Tuesdays. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | Every Tuesday. |
| San Francisco County Medical Society..... | H. E. Alderson, San Francisco..... | Le Roy H. Briggs, S. F..... | 4th Friday, except July and August. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 1st Saturday of each month. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | C. S. Stevens, Santa Barbara..... | H. E. Henderson, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | Fred H. Tebbe, Weed..... | C. W. Nutting, Etna Mills..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | F. W. McKibbin, Oakdale..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Bly, Red Bluff..... | 1st Tuesday. |
| Tulare County Medical Society..... | A. W. Preston, Tulare..... | E. R. Zunwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | Every two months. |
| Ventura County Medical Society..... | T. W. Mott, Santa Paula..... | W. R. Livingston, Oxnard..... | 1st Tuesday, except July, Aug. and Sept. |
| Yolo County Society for Medical Improvement..... | M. B. Bransord, Woodland..... | Lila J. Beebe, Woodland..... | Meets every 2 months. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

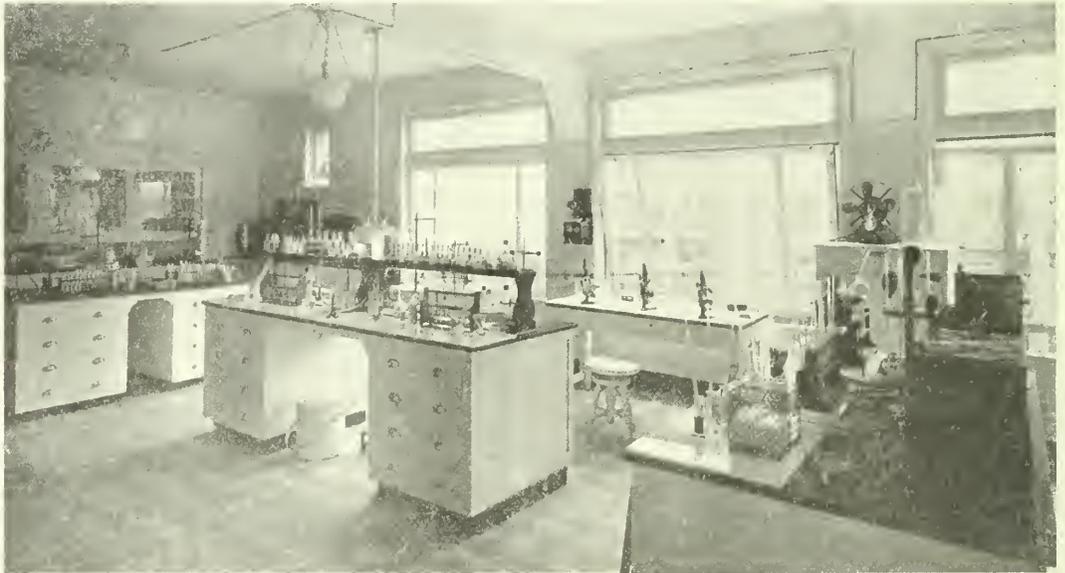
REX DUNCAN, M. D.
Medical Director

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT - ACCURATE - DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *This should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhoea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diabetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco - Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California State Journal of Medicine

ISSUED MONTHLY OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Vol. XIX, No. 3

MARCH, 1921

\$1.00 a Year

CONTENTS

| | | | | | |
|---|-----|--|-----|---|---------|
| Editorials | 93 | Surgery of the Chest. By Chas. D. Lockwood, M. D..... | 105 | Teeth, Tonsils and Sinuses. By Robt. B. Sweet, M. D. | 116 |
| Original Articles: | | Prostatectomy Cases, Post-Operative Treatment. By H. A. Rosencrantz, M. D..... | 107 | Climacteric Hypertension. By Roland Cummings, M. D.... | 116 |
| Success: As Applied to Urology. By E. Spence Dupuy, M. D. | 98 | Post-Maturity of the Foetus. By Norman H. Williams, M. D..... | 111 | Provisional Program of the 50th Annual Session of the Medical Society, State of California. May 10, 11, 12, 1921, Coronado..... | 119-131 |
| Stiffness in the Extremities Followed by Accident and Injury. By A. L. Fisher, M. D. | 100 | Low Haemoglobin in Our Surgical Cases. By W. H. Gilbert, M. D..... | 113 | Book Reviews..... | 131 |
| Recent Developments in Radium Therapy.. By Rex Duncan, M. D..... | 102 | | | | |

(Contents continued on page IX)

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

FRED I. LACKENBACH

BIOLOGIC DEPOT

BACTERIOLOGICAL · SEROLOGICAL
AND CHEMICAL WORK

S
C
I
E
N
C
E

I

N ORDER TO FACILITATE PROMPT AND EFFICIENT SERVICE TO THE MEDICAL PROFESSION AND TO INSTITUTIONS, WE HAVE CONCLUDED ARRANGEMENTS WITH MR. FRED I. LACKENBACH, 908 BUTLER BUILDING, SAN FRANCISCO, CALIFORNIA, WHO WILL CARRY AN AMPLE STOCK OF ARSPHENAMINE AND NEOARSPHENAMINE (D. R. L.) AT ALL TIMES, AND ACT AS SPECIAL DISTRIBUTING AGENT FOR OUR PRODUCTS IN CALIFORNIA. THESE DRUGS WILL IN FUTURE, THEREFORE, BE READILY OBTAINABLE DIRECT FROM HIM AT LOWEST CURRENT PRICES.

DERMATOLOGICAL RESEARCH LABORATORIES

| | |
|----------------------------|-------------------------|
| NEOARSPHENAMINE (D. R. L.) | ARSPHENAMINE (D. R. L.) |
| .90 Ampule . \$2.00 | .45 Ampule . \$1.25 |
| .75 Ampule . 1.75 | .30 Ampule . 1.00 |
| .60 Ampule . 1.50 | .15 Ampule . .75 |
| | 6 Ampule . \$1.50 |
| | 3 Ampule . \$1.05 |
| | 5 Ampule . 1.40 |
| | .2 Ampule . .80 |
| | 4 Ampule . 1.25 |
| | .1 Ampule . .50 |

(10% Discount on 10 Tubes. 20% Discount on 100 Tubes or More)

SPECIAL QUOTATIONS TO PUBLIC HOSPITALS AND FREE CLINICS ON APPLICATION

I
N
D
U
S
T
R
Y

908 BUTLER BUILDING

SAN FRANCISCO

CABLE ADDRESS "SERVMS S-F" · TELEPHONE SVTTER 3122

Luer Syringe Price List

| Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each | Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each |
|-----------------|----------|---------------|--------------------|---------------------|-----------------|----------|---------------|--------------------|---------------------|
| Tuberculin..... | ¼ c.c. | \$2.25 | \$1.65 | \$1.40 | Serum..... | 5 c.c. | \$2.50 | \$1.90 | \$1.55 |
| Tuberculin..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Serum..... | 10 c.c. | 3.25 | 2.40 | 2.05 |
| Gray Oil..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Arsphenamine.. | 20 c.c. | 4.50 | 3.25 | 2.75 |
| Tuberculin..... | 1 c.c. | 2.00 | 1.50 | 1.25 | Eccentric Tip.. | 20 c.c. | 5.00 | 3.75 | 2.75 |
| Subcutaneous... | 1½ c.c. | 1.25 | .90 | .80 | Arsphenamine.. | 25 c.c. | 5.00 | 3.75 | 3.25 |
| Precision..... | 1½ c.c. | 2.00 | 1.50 | 1.30 | Arsphenamine.. | 30 c.c. | 5.75 | 4.35 | 3.75 |
| Subcutaneous... | 2 c.c. | 1.40 | 1.00 | .80 | Eccentric Tip.. | 30 c.c. | 6.75 | 5.35 | 3.75 |
| Precision..... | 2 c.c. | 2.25 | 1.75 | 1.50 | Arsphenamine.. | 50 c.c. | 8.00 | 6.00 | 5.00 |
| Lachrymal..... | 3 c.c. | 3.50 | 2.65 | 2.25 | Eccentric Tip.. | 50 c.c. | 9.00 | 7.00 | 5.00 |
| Vaccine..... | 3 c.c. | 2.00 | 1.45 | 1.25 | Arsphenamine.. | 100 c.c. | 12.00 | 9.00 | 7.50 |
| Dental..... | 4 c.c. | 2.25 | 1.65 | 1.35 | Eccentric Tip.. | 100 c.c. | 13.00 | 10.00 | 7.50 |

Return both parts. New Syringe supplied at cost of broken part.

Fred I. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

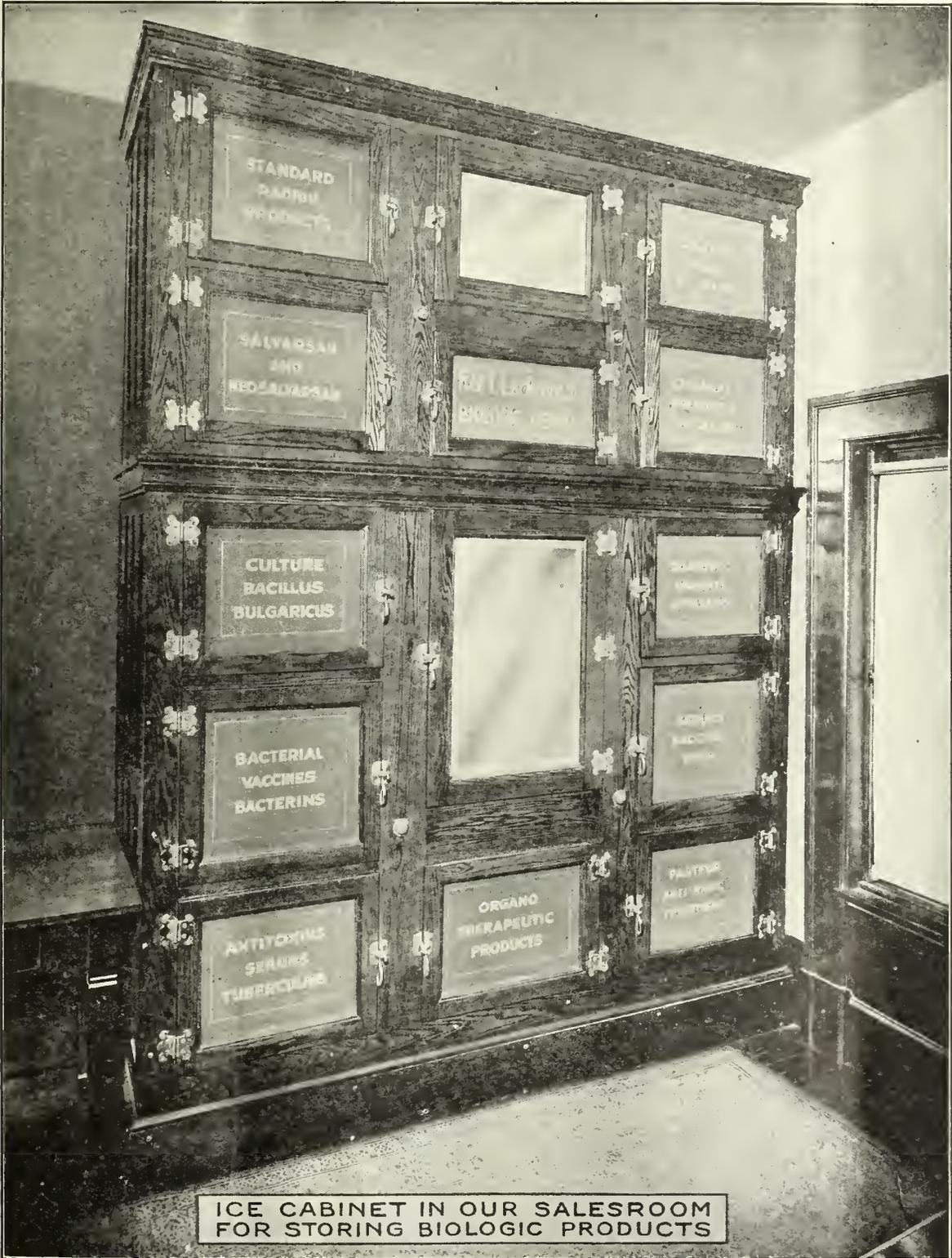
135 STOCKTON STREET
TEL. SUTTER 3122

FRED I. LACKENBACH
BIOLOGIC DEPOT

Our Salvarsan Service

- ☞ We supply complete Sterilized Outfit consisting of graduated reservoir, tubing, observation tube, Luer glass connection and two suitable needles; also 250 c.c. flasks of freshly double-distilled water and sterile salt solution with 15% sodium hydroxide, exactly enough to neutralize the dose of Arsphenamine—all for \$6.00. The Salvarsan solution may be effected in the flask containing the double-distilled water.
- ☞ When you have your own outfit we can send the freshly double-distilled water, sterile salt solution and NaOH q. s. for \$1.00.
- ☞ For concentrated solutions we supply 20 c.c. Luer Syringe outfit with suitable needles, mixing flask containing freshly double-distilled water, all sterilized and ready for use—at \$6.00 complete.
- ☞ These outfits and solutions are the very best that money can buy. They are the culmination of years of practical experience and painstaking effort.
- ☞ In San Francisco we loan out gravity outfit at \$2.50 and 20 c.c. Luer outfit at \$1.50 complete.
- ☞ For immediate use we prepare the solution for \$1.00. The actual cost of preparation, however, is only 50c. since the flask of double-distilled water would be 50c.

Wassermann Test \$5.00



ICE CABINET IN OUR SALESROOM FOR STORING BIOLOGIC PRODUCTS

Biologic Products should be kept cool and dark at a temperature of 40°-50° F.

Fred I. Lackenbach, Biologic Depot
 SAN FRANCISCO
 MAINTAINS TWO OF THESE IMMENSE STORAGE REFRIGERATORS

Fred I. Lackenbach receives all supplies direct from the producer at frequent intervals. Druggists and Jobbers with limited output can not possibly maintain this efficient service.

Vaccine Virus to properly retain its efficacy should be kept on ice

Gonococcus Glycerol-Vaccine

Stable and Effective

Advantages:

- 1- Will not deteriorate. 2- Free from autolytic products.
- 3 - In preliminary trials has not produced toxic reactions even in large doses.

The types of cases reported to us as favorably influenced by Gonococcus Glycerol-Vaccine are chronic gonorrhoeal infections, including gonorrhoeal rheumatism, epididymitis, prostatitis and posterior urethritis.

Further Information on Request

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE NEW YORK

B & B Surgical Dressings

Better Than You Expect

We have studied 27 years, under surgical advisers, to excel in all B & B products.

B & B Cotton and Gauzes come to you utterly sterile. They are sterilized in the making, then sterilized again after packing.

Incubator tests of center fibers prove the packages sterile to the core.

B & B Adhesive is a rare achievement. Three B & B experts have each spent more than 20 years to perfect this product for you.

B & B Handy-Fold Plain Gauze comes in pads, each in a parchmine envelope, sterilized after sealing.

B & B Handy-Package Cotton can be used without removing the roll.

B & B Plaster Paris Bandages carry extra plaster for finishing. They are wrapped in water permeable paper.

B & B Formaldehyde Fumigators conform to U. S. Public Health Service standards.

Each is a model

Each B & B product is a model creation. Every detail indicates skill, care and efficiency. You will find in each one some unique perfections, to increase your respect for this brand.

They are made in model laboratories. They are made by masters. The highest ideals underlie them.

Investigate them. See what 27 years have accomplished under these B & B standards.

BAUER & BLACK Chicago New York Toronto

Makers of Sterile Surgical Dressings and Allied Products



Ideal Adhesive

One of the finest examples of B & B attainments.



B & B Formaldehyde Fumigators

Accord in strength with U. S. Public Health Service standards.



Phenol Coefficient—51.98

The only type of cake soap which can properly be called germicidal.

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH—That vaccination against all three infections does definitely protect against all three.
- FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count

Write for Therapeutic Index Price List

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients).

Includes medical and nursing care, board and laundry.

Medical Director, Dr. Philip King Brown

APPLY OFFICE

AREQUIPA

401 Medical Bldg., San Francisco

Phone Franklin 844

FOR SALE AT A SACRIFICE

House suitable for a Doctor's home or Sanatorium with 11 rooms that can be easily increased to seventeen. Corner lot, 114 x 125. House and grounds in A-1 condition; garage for six cars, lawns, palms, shade trees and driveways. On Dolores street, in the warm belt, with a view of the City. Modern improvements, beveled mirrors, running water in all rooms. Seen by appointment only.

E. E. KORTICK

INSURANCE EXCHANGE BUILDING.

Room 12.

Kearny 3561

(Evening) Residence Phone Pacific 7406

BUILDS
AND
RESTORES TISSUE

OVALTINE

To build and restore tissue to the best advantage requires that the materials for construction and restoration be in such form and such proportion that, on the one hand, the anabolic function may proceed unhindered, and, on the other, that a nice adjustment and distribution of the constructive elements may be brought about.

"Ovaltine" with its wealth of essential food elements, easy of digestion and assimilation; with its natural iron, calcium and phosphorus constituents; with its enzymic principles and accessory food factors; provides constructive and restorative material for every tissue of the body.

THE WANDER COMPANY

37 South Wabash Avenue
Chicago, Ill.

Works: Villa Park, Ill.

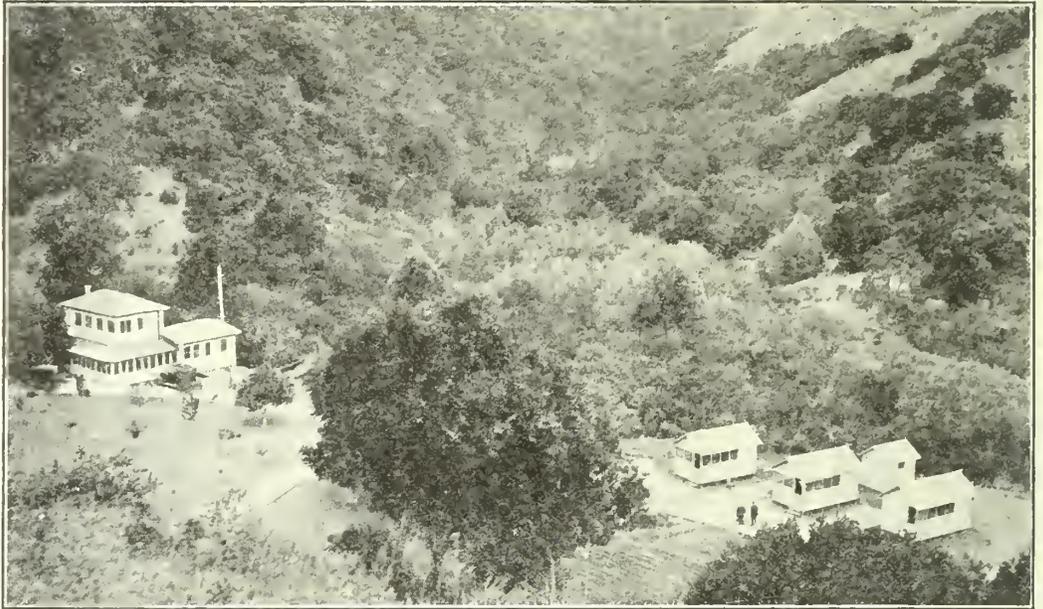
Samples and literature mailed to physicians on signed request.

Obtainable from druggists in 8 oz., 17 oz., 5 lb., and 10 lb. tins.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS



SOME OF THE COTTAGES

□
*Entire Lack
of Hospital
Atmosphere*

□
*Rates
Reasonable*

□
Climate Ideal

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR

FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN C. YATES, San Diego, President

JOHN H. GRAVES, San Francisco, President-Elect.

WM. DUFFIELD, Los Angeles, 1st Vice-Pres. JOSEPH CATTON, San Francisco, 2d Vice-Pres.

SAXTON POPE, San Francisco, Secretary ALFRED C. REED, San Francisco, Editor

COUNCILORS

First District—San Diego, Riverside, Orange, San Bernardino and Imperial Counties.

J. C. KING, Banning
(Term expires 1921)

Second District—Los Angeles, Santa Barbara, Ventura and Kern Counties.

WM. H. KIGER, Los Angeles
(Term expires 1922)

Third District—San Luis Obispo and Monterey Counties.

T. C. EDWARDS, Salinas
(Term expires 1921)

Fourth District—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties:

GEORGE H. AIKEN, Fresno
(Term expires 1921)

Fifth District—Santa Clara, San Mateo, San Benito and Santa Cruz Counties.

FRANK H. PATERSON, San Jose
(Term expires 1923)

Sixth District—San Francisco County.

C. G. KENYON, San Francisco, Chairman
(Term expires 1922)

Seventh District—Alameda, Contra Costa, San Joaquin and Calaveras Counties.

EDW. N. EWER, Oakland
(Term expires 1923)

Eighth District—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.

JAMES H. PARKINSON, Sacramento
(Term expires 1922).

Ninth District—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.

ANDREW W. HOISHOLT, Napa
(Term expires 1923)

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); H. A. L. Ryfkogel, San Francisco (term expires 1921); C. Van Zwalenburg, Riverside (term expires 1923).

CALIFORNIA STATE JOURNAL OF MEDICINE

BUTLER BUILDING, SAN FRANCISCO

CONTENTS - - Continued

| | |
|--|-----|
| State Society—Railroad Receipt Certificate Plan, Coronado, May 10, 11, 12..... | 132 |
| County Society Reports: | |
| Alameda | 133 |
| Contra Costa..... | 133 |
| Fresno | 133 |

| | |
|---------------------|-----|
| Kern | 133 |
| Los Angeles..... | 133 |
| Orange | 135 |
| San Francisco | 135 |
| Santa Barbara..... | 135 |
| San Joaquin | 135 |
| Santa Cruz | 135 |

| | |
|---|-----|
| Tulare-Kings | 136 |
| Clinical Department: | |
| Gall Bladder Localization..... | 136 |
| Children's Department University of California Hospital | 136 |
| Obituary—Dr. J. O. Hirschfelder | 137 |
| Deaths | 138 |



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.



HYDROPATHIC DEPARTMENT

Address Livermore Sanitarium, Livermore, Calif.

PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

*Dr. Zander's Mechanical Swedish
Apparatus,
Hydrotherapy, Massage and Manipulations
Electrotherapy, Thermo-penetration,
Oxygen Vapor Inhalations, Heliotherapy,
Proctoclysis and Corrective-Gymnastics*

We are equipped with every known modern mechanical device of scientifically proven efficiency for the relief of suffering. We maintain every facility for recuperation that is to be found in the best of European Spas.

Our Institute was primarily designed for the relief of persons suffering from chronic disorders, and our equipment is especially assembled for their treatment.

SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED.

The Physicians Institute endeavors to meet a great and necessary co-operative role with the Physician and Surgeon of San Francisco in their fight with intractable morbid conditions. The Physicians Institute is simply a unique and efficient therapeutic agent available to all physicians who want to retain their patients, but desire to place them in the hands of specially trained technicians who are equipped with the required modern therapeutic appliances and who make a specialty of coping with conditions as indicated above.

War-trained "aids." Graduate nurses.

Best references. Inspection invited.

Mrs. N. A. Karpaty,
Charge of Women's Dept.

N. A. Karpaty, B. Sc.,
Director.

SYPHILO-DIAGNOSIS

DARKFIELD FOR SPIROCHETES

WASSERMANN:

TWO ANTIGENS—COLD AND WARM REACTION

LANGE COLLOIDAL GOLD REACTION

NOGUCHI REACTION

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES

133 GEARY STREET, SAN FRANCISCO

Telephone SUTTER 1015

The Seymour Sanatorium

Banning, California

SITUATED in the broad San Gorgonio pass at an elevation of 2,400 feet, with inspiring views of Mt. Grayback and old San Jacinto on either hand, near, yet not upon the desert, the SEYMOUR SANATORIUM is exceptionally well located both from a climatic and environmental standpoint.

Here nature gives her best, and all modern means are used to assist and reinforce her efforts.

Careful study of each case, strict individualization in treatment and painstaking attention to detail, assure to the patient the attainment of the maximum benefit from the sanatorium sojourn.

The rates are very moderate

CHARLES E. ATKINSON, M. D., Medical Director



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Ætna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Ætna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Ætna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Ætna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Ætna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1920 - - - - \$188,113,036.63

If you are not acquainted with the Ætna Agent in your town write direct to
J. R. MOLONY, Manager, Western Branch
Department "C," 333 Pine Street, San Francisco, Calif.

ÆTNA LIFE INSURANCE COMPANY

AFFILIATED WITH

ÆTNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

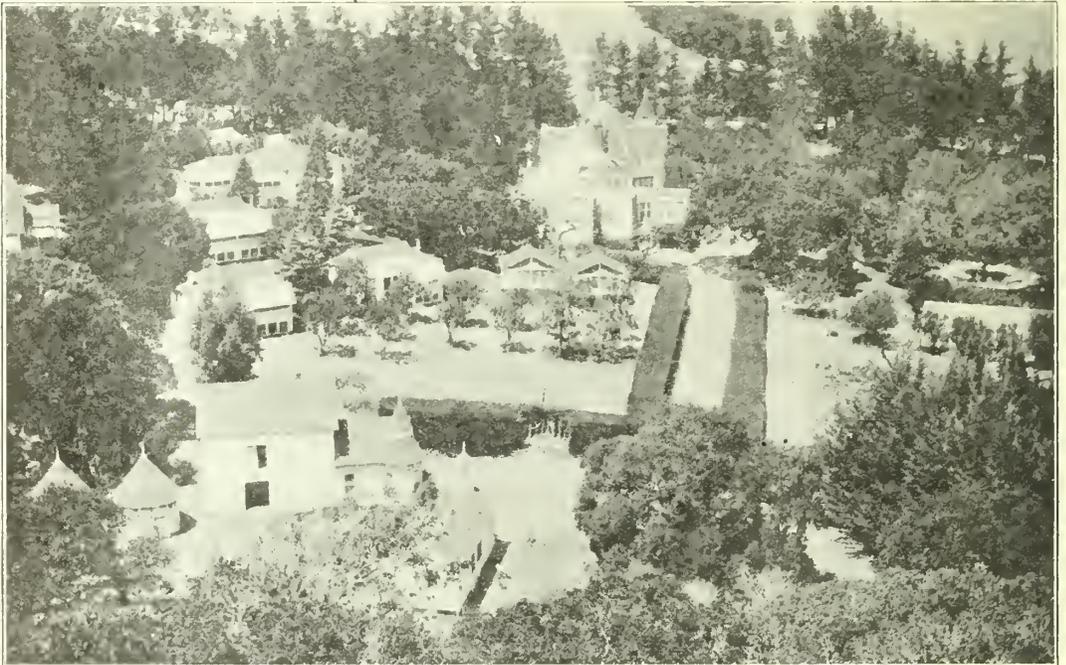
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont



USE THERMOWEVE

The latest and most practical Electrical heating blanket wherever uniform heat and better elimination is desired.

THE THERMOSTAT,

as shown in cut, is operated from the heat of the blanket. The compensating bar, being thermos metal, is sensitive to heat and cold.

It is infallible in its action.

It is adjustable to any temperature of heat desired.

You simply turn the indicator hand to the point on the dial corresponding to the maximum degree of heat required.

The circuit will then automatically open and close.

This keeps the blanket at an even temperature and under perfect control.

THE FLEXIBLE FILLER

Is made of heavy cotton warp, forming a one-piece fabric in which is woven a small doubly insulated cable of finely drawn copper wire.

There can be no cold spots.

It is strong and durable and will last indefinitely.

Correspondence Solicited

Will mail our interesting booklet upon request.

THE ELECTROTHERM CO., INC.

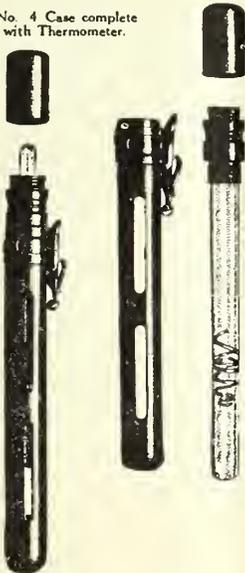
252-254 San Fernando Blvd.

Los Angeles, California

Phone Lincoln 1967

Always Sterile And Always At Hand

No. 4 Case complete with Thermometer.



At the left, the outside case. Above, the glass tube with spring and the screw lock cap.

THE MORNEAU SANITARY THERMOMETER CASE

carries your fever thermometer always sterilized and ready. The thermometer is carried submerged in a sterile solution, in a case no larger than your fountain pen, and just as handy.

It gives you positive assurance against disease infection from a bacteria laden thermometer, insufficiently sterilized just prior to use.

The Morneau is regularly fitted with the Morneau One-Minute Thermometer, the only successful one having the marking on the inside of the glass, preventing their being removed by the sterilizing solution. It will carry any thermometer.

If your own dealer does not have one, write us direct, and we will ship one to you through him.

- No. 4 — Equipped with Morneau Thermometer and pocket clip - - - - \$4.00
- Case alone - - - - \$2.50
- No. 5 — With Morneau Thermometer, fitted with a gold chain and pin - - - - \$5.00
- Case alone - - - - \$3.50
- Morneau One-Minute Thermometer - - - - \$1.50

Morneau
SANITARY
THERMOMETER CASE
COMPANY
APPLETON — WISCONSIN

The
Management
of an
Infant's Diet

Constipation

In a very large percentage of cases of constipation in early life, this annoying condition is due largely to some fault in the diet, and usually the difficulty can be easily traced to an incomplete digestion of protein or of fat. By changing the food and advising a daily diet prepared according to

The Mellin's Food Method of Milk Modification

the condition is very often corrected immediately, for the reason that Mellin's Food helps materially in the digestion of cow's milk. In cases where the condition has persisted for some time, simple changes in the proportion of Mellin's Food, milk and water will soon bring about normal stools.

Practical suggestions relative to the readjustment of the diet are set forth clearly in the chapter on "Stools" in our book, "Formulas for Infant Feeding." We also have a pamphlet devoted particularly to the subject, and all of this literature will be sent to any physician upon request.

Mellin's Food Company,

Boston, Mass.

JUST PUBLISHED

PSYCHO-PATHOLOGY

By Edward J. Kempf, M.D., Clinical Psychiatrist to St. Elizabeth's Hospital (formerly Government Hospital for the Insane), Washington, D. C., author of "The Autonomic Functions and the Personality." 762 pages + xxiii, 6 3/4 by 9 3/4, with 97 illustrations. Printed on beautiful India Tint paper, and bound in silk cloth binding, with gold stamping. Price, \$9.50.

A complete book, elaborating the new epoch in the study and treatment of the adjudicated insane.

Abnormal behavior is one of the most interesting topics for study. When the principles underlying it are mastered many mysteries that have perplexed medical men, criminologists, and lawyers are solved. Doctor Kempf has rendered a real service to physicians in the writing of "PSYCHOPATHOLOGY."

The book is handsomely printed on India Tint paper, and the illustrations are beautiful specimens of the engraver's art

 Just sign the attached coupon and mail, and the book will be sent at once.

C. V. Mosby Company

MEDICAL PUBLISHERS

ST. LOUIS

U. S. A.

Send for a copy of our new 96-page catalog

PARTIAL TABLE OF CONTENTS

The Physiological Foundations of the Personality; The Psychology of the Family; The Universal Struggle for Virility, Goodness and Happiness; Influence of Organic and Functional Inferiorities upon the Personality; Mechanistic Classification of Neuroses and Psychoses Produced by Distortion of Autonomic-Affective Functions; The Mechanism of the Suppression or Anxiety Neuroses; Repression or Psychoneuroses, Their Mechanisms and Relation to Psychoses Due to Repressed Autonomic Cravings; Benign Compensation or Regression Neuroses, with or without Dissociation of Personality; Manic-Depressive Psychoses; Elimination or Simulation for Wish-Fulfillment in Affective Crises; Pernicious Repression Compensation Neuroses; The Psychopathology of Paranoia; The Psychopathology of the Acute Homosexual Panic; Acute Pernicious Dissociation Neuroses; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Defensive Hatred, Eccentric Paranoid Compensations and Pernicious Deterioration; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Crucifixion and Catastrophic Adaptations to the Repressed Cravings; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Hebephrenic Adaptations; Predominance of Excretory Erotic Interests; Reconsideration of the Conditioned Autonomic Affective Determinants of Abnormal Variations of Behavior; Psychotherapeutic Principles.

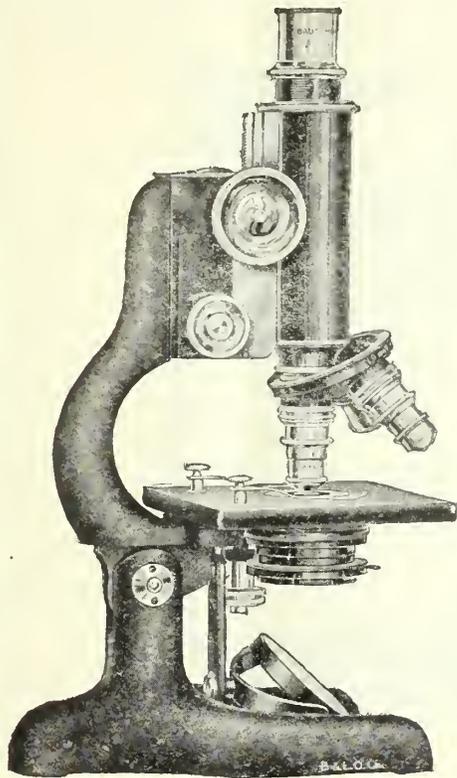
C. V. Mosby Co. (Calif.)

St. Louis
Send me the new book by Edward J. Kempf, M.D., "PSYCHOPATHOLOGY," for which I enclose \$9.50, or you may charge to my account.

Name.....

.....

.....



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA

JOHNSTON-WICKETT CLINIC

Anaheim, California

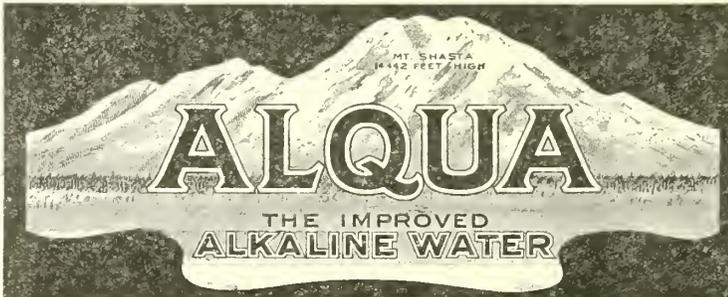
STAFF

DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. V. P. OSBURN
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.



ALQUA
THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLED AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U.S.A.

Grageroff & Papazoni

Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

Readily Soluble

Practically Free from Toxicity

Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you order direct from

H. A. Metz Laboratories, Inc.
122 Hudson Street,
NEW YORK CITY

Adrenalin in Medicine

6—In Endocrinology

THE action of Adrenalin is so fleeting as to narrow the scope of its utility in organotherapy. Its important place in clinical endocrinology is that of a diagnostic indicator of deviations from the normal secretory activity of certain glands.

Hyperthyroidism can be detected by the Goetsch test. This test is based on the fact that thyroid secretion sensitizes the sympathetic nerve endings to the action of Adrenalin. The technique consists of the subcutaneous injection of 0.5 cc Adrenalin 1:1000 and the subsequent observation of objective and subjective phenomena.

Blood-pressure readings are taken over a period of one and one-half hours at intervals varying from two and one-half minutes at the beginning of the reaction to ten minutes at the end. In positive cases the systolic blood-pressure rises at least ten points during the first fifteen minutes with an accompanying increase of about ten beats a minute in the pulse-rate. Soon there is noted a slight fall in systolic pressure and then a secondary rise. In about ninety minutes the blood-pressure is back to normal.

The subjective symptoms

are sometimes striking. There are heart consciousness, apprehension, and marked tremor and pallor occasionally followed by flushing and sweating. The greatest diagnostic importance of the Goetsch test is in distinguishing cases of mild hyperthyroidism from those of incipient tuberculosis.

A satisfactory test for suprarenal function can be performed by injecting subcutaneously fifteen to twenty minims of Adrenalin 1:1000 and estimating the consequent variations in blood sugar. In cases of suprarenal irritability there is an increase in blood sugar which comes on in about thirty minutes and lasts for several hours. A transient glycosuria may likewise be noted.

Loewi's test for pancreatic diabetes is dependent upon the fact that the suprarenal glands and the pancreas are physiological antagonists. In pancreatic diabetes there is impairment if not destruction of the secretory cells which allows certain Adrenalin effects to be more pronounced. One or two drops of Adrenalin 1:1000 should be instilled into one eye. In positive cases—cases of pancreatic insufficiency—there will be a prompt dilatation of the pupil.

ADRENALIN
ORIGINAL
P. D. & CO.
TRADE MARK

PARKE, DAVIS & COMPANY

QUARTZ MERCURY VAPOR ULTRA VIOLET LIGHT

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, specula, endoscopes, proctoscopes, laryngoscopes pharyngeal, nasal, urethral, vaginal, rectal, uterine lenses and radiating tubes for the application of ultra-violet emanations.

THE PAMBRUN DEEP PENETRATION FILTER SYSTEM

Service in technique
Service in instruction

Service in installation
Service in maintenance

KROMAYER UNIT
WATER COOLED

ALPINE SUN UNIT
AIR COOLED

L. B. PAMBRUN

220 Phelan Bldg.

Phone Sutter 2322

San Francisco, U. S. A.

Representing
Hanovia Chemical & Mfg. Company
of Newark, N. J.

Prices and Terms on Application

San Joaquin Valley Radium Institute

of
FRESNO, CALIF.

This institution is equipped with the most modern type of emanation apparatus and necessary appliances for treatment of all diseases amenable to radium therapy.

We invite inquiries and wish to cooperate with the medical profession with reference to radium therapy.

GEO. H. SCIARONI, M. D.,
Medical Director,
108-112 Forsyth Bldg.,
Fresno, Calif.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

Ethical

Reliable

DIAGNOSTIC LABORATORIES

OF

GRANT & WILSON

PATHOLOGISTS

BACTERIOLOGICAL
CHEMICAL
CLINICAL
METABOLIC
PATHOLOGICAL
SEROLOGICAL

327 MERCHANT'S NATIONAL BANK BLDG.

Los Angeles, Cal.

Phone 64536

Prompt

Accurate

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☞ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☞ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☞ A telephone call or postal card will bring our representative.

Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
 X-Ray and High Frequency Coils and Machines
 Interrupterless X-Ray Transformers (Three Sizes)
 Coolidge Tube Transformers and Controls
 Electric Bakers (Limb and Body)
 Ozone Generators—Single, Double and Quadruple
 Electric Light Bath Cabinets with Thermo-Vacuum Space
 Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and
 Coolidge Tube Control for Fluoroscopy

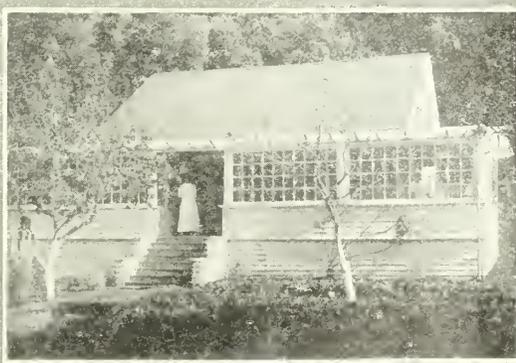
REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for
 price lists and descriptive literature

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

Colfax School for the Tuberculous

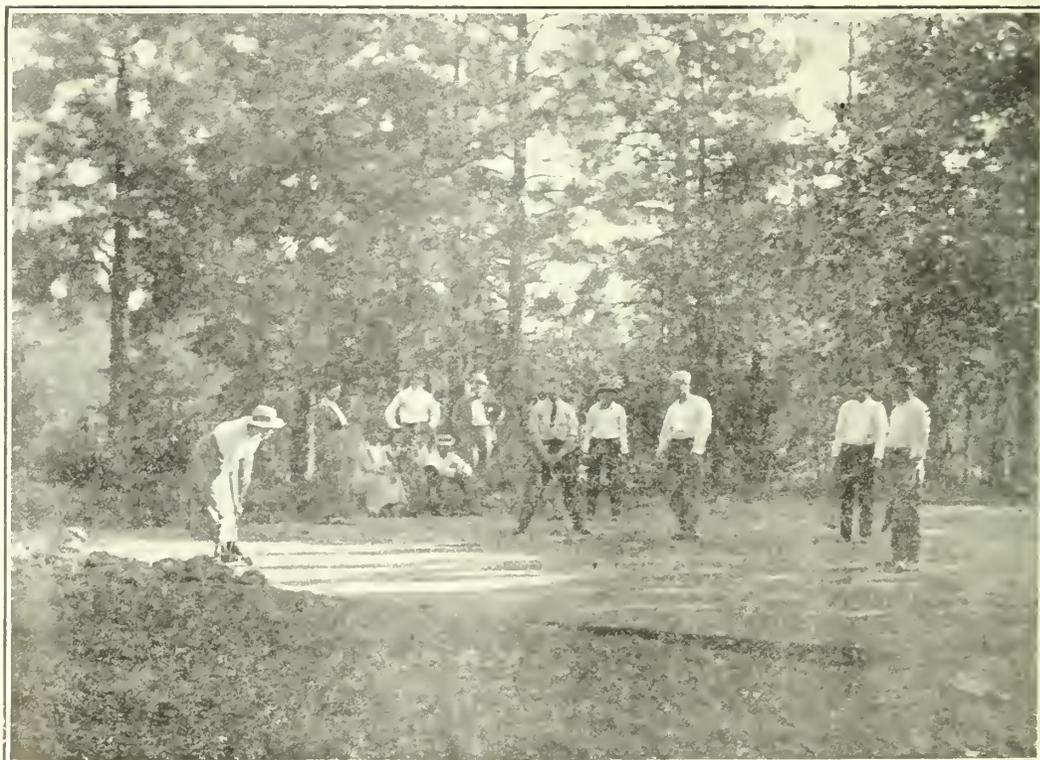
Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

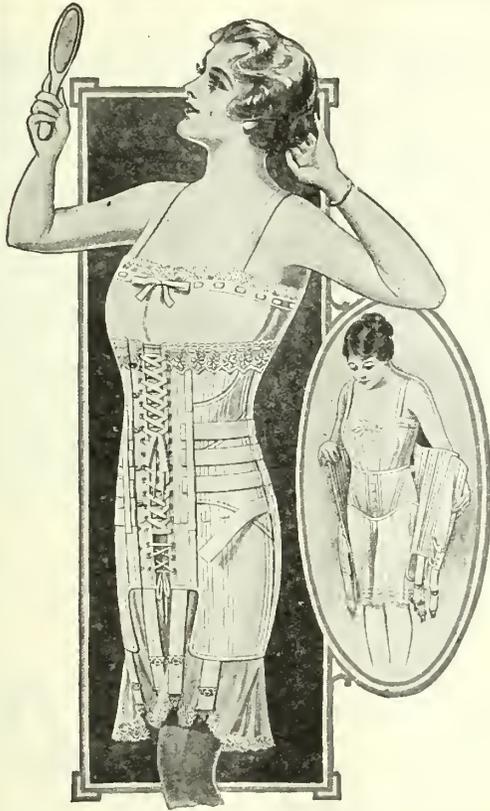
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





TRAVERS Surgical Co.

SAN FRANCISCO, CAL.

Phone Sutter 4 6 5 1 372 Sutter Street

SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES

Travers' Surgical Corset

This Corset of special benefit for correcting Entroposis. It is laced in front with an inner belt to support the abdomen as desired and is a most perfect corset. This corset is recommended by physicians for use after operations and for many ailments.

Expert fitter in charge.

Pituitary Liquid

is the perfect preparation of Posterior Pituitary active principle. It, too, is without preservatives— $\frac{1}{2}$ c. c. obstetrical, 1 c. c. surgical.

Corpus Luteum (Armour)

is true substance and will give results. Powder 2 and 5 gr. capsules and 2 and 5 gr. tablets.

Surgical Catgut Ligatures

Plain and chromic, regular (60 inch) emergency (20 inch) Iodized (60 inch).

Strong and sterile



An Incomparable Product

The Suprarenalin (Epinephrin U. S. P.) preparations are now available.

Suprarenalin Powder - - - 1 grain vials
Suprarenalin Solution, 1:1000 - 1 oz. bottles
Suprarenalin Ointment, 1:1000 - - tubes

Suprarenalin designates the astringent, hemostatic and pressor principle of the Suprarenal Gland as isolated by the Armour chemists.

Suprarenalin Solution is the incomparable preparation of the kind. It is water-white, stable and non-irritating and is entirely free from chemical preservatives.

Suprarenalin ointment is bland and its effects very lasting.

ARMOUR AND COMPANY

CHICAGO

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Hiford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 millamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.

LEADED GLOVES AND APRONS. (New type glove, lower priced.)
FILING ENVELOPES with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST
GEO. W. BRADY & CO.

781 So. Western Ave. CHICAGO

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

Fine Grades In Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary San Francisco, Cal.

Walters Surgical Company

"THE HOUSE THAT AIMS TO SERVE"

441 SUTTER STREET

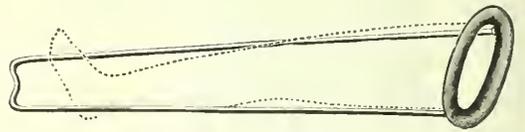
Between Powell and Stockton Streets

Phone Douglas 4017

SURGICAL INSTRUMENTS HOSPITAL SUPPLIES

- TRUSSES
- ABDOMINAL SUPPORTERS
- ELASTIC HOSIERY
- ORTHOPEDIC APPLIANCES

We Carry All the Late Patterns of U. S. Army
Splints, Including Jones', Thomas'
and Hodgens'



THOMAS' KNEE SPLINT

NOTICE

Physician's widow disposing of surgical instruments and microscope. For inspection at

TRAVERS SURGICAL CO.
372 Sutter St., San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)
526 California Street, San Francisco, Cal. COMMERCIAL
Member of the Federal Reserve System. Member of the Associated Savings Banks of San Francisco
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

DECEMBER 31, 1920

| | | | |
|----------------|------------------------------|-------------------------------|--------------|
| Assets | \$69,878,147.01 | Capital Actually Paid Up..... | 1,000,000.00 |
| Deposits | 66,338,147.01 | Reserve and Contingent Funds | 2,540,000.00 |
| | Employees' Pension Fund..... | | \$343,536.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

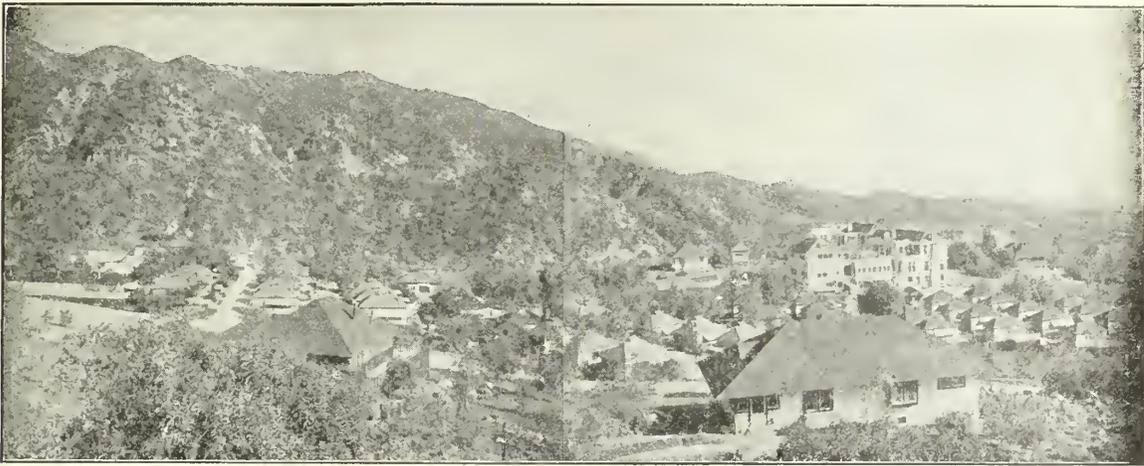
BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.

POTTENGER SANATORIUM

For Diseases of the Lungs and Throat

MONROVIA,
CALIFORNIA



A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.
Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

| | |
|------------------|---|
| Finest Materials | ✓ |
| Best Package | ✓ |
| Quick Delivery | ✓ |
| | |

ABBOGRAM



Dr. W.C. Abbott Pres. Dr. A.S. Burdick V.P.

| |
|---------------|
| RECEIVERS NO. |
| CHECK |
| TIME FILLED |

TELEGRAPH ORDERS ARE FILLED AND SHIPPED WITHIN AN HOUR OF RECEIPT

MARCH 1st

19 21

To ALL DOCTORS

Street & No. PRACTICING MEDICINE IN THE

Place U. S. AND CANADA

RUSH

HAVE YOU TRIED BENZYL BENZOATE, ABBOTT? IT IS A WINNER. CHLORAZENE, BARBITAL AND CINCHOPHEN, ABBOTT, ARE GOING WELL. ACRIFLAVINE, ABBOTT, IS A SUCCESS. ORDER SEASONAL SUPPLIES NOW THROUGH YOUR DRUGGIST OR DIRECT. THE NEW ABBOTT PRICE LIST IS READY. SEND FOR IT.

Branches

NEW YORK SAN FRANCISCO SEATTLE

Sender The Abbott Laboratories

4739 Ravenswood Ave., Dept. Chicago, Ill.

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco



Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of

Crutches Sold
or Rented
Arch-Support
Fitting
a Specialty

ARTIFICIAL LIMBS
and
ORTHOPEdic
APPLIANCES

Bonded Manufacturers for
U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEdic APPLIANCES
Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street

Between Post and Sutter Streets
SAN FRANCISCO

Do You Need an Assistant or Locum Tenens?

Fully qualified physician desires to become assistant to busy man, or resident for institution. Highest references of both character and ability. Aged 35 years. Remuneration secondary if good place. Will guarantee satisfaction. Send particulars. Address Physician, 951 Euclid Ave., Ontario, Calif.



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400

SAN FRANCISCO

In Case of Hernia

Prescribe the

Benjamin Natural Support

Each support is made complete for each individual case; the rule being to make pads soft and covering a large enough surface that opening is kept closed. Face of pad made to contour of body.

Non-elastic webbing about hips; pressure applied by flat spring over pad. Hernia is thereby retained without impairing circulation. No need for tight belt or hip-spring.

Comfortable as well as Secure!

When you think of a support for any form of hernia,—think of

M. J. BENJAMIN

Exclusive Maker the Benjamin
Natural Support

Suite 214 Douglas Bldg., Cor. 3rd and Spring
Hours, 9:00 to 5:00. Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES
1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.
Phone Franklin 4556

Tuberculosis

ALTA SANATORIUM

DR. BURT F. HOWARD
Medical Director

MRS. B. E. TAYLOR
Nurse-Matron

Alta, Placer Co., California

S.cience O.f S.ervice

—the answer to an emergency call from a contract holder of The Medical Protective Company, has been prepared over the course of twenty-three years of doing one thing right; —in the handling of over 12,000 claims and suits in but a single line of legal endeavor.

*For Medical Protective Service
Have a Medical Protective Contract*

The Medical Protective Co.
of
Fort Wayne, Indiana

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabil-
izer and combination fluoroscopic and radio-
graphic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB

REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

DR. WM. B. WRIGHT, JR.

Practice limited to Nose and Throat.

Formerly associated with Dr. Justus
Matthews of Minneapolis.

1123 Chapman Bldg., Los Angeles.

Telephone 65943

"We Get the Coin" "We Pay"



Special attention to doctor's accounts.
Personal calls throughout Southern California.
No Collection—No Charge.
We pay monthly.
Our rate one-half of the amount collected.

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.
426 So. Spring Street, Los Angeles, California

KENILWORTH SANITARIUM

KENILWORTH, ILL.
Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of
nervous and mental diseases. Approved diag-
nostic and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with forced ventilation. Elegant
appointments. Bath rooms en suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to
KENILWORTH SANITARIUM
Kenilworth - - - Illinois



SOUTHERN SIERRAS SANATORIUM

BANNING, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT



DR. E. S. SMITH—Medical Directors—DR. J. P. FREY

DOCTORS' SMOCKS,
OPERATING GOWNS

and
COATS

DENTISTS' JACKETS
Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.

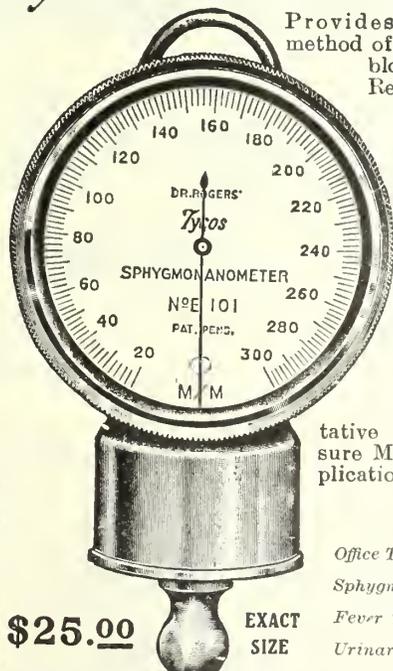
A. S. W. GRUNDY
SAN FRANCISCO

970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

OAKLAND

2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

Tycos SPHYGMOMANOMETER



Provides a simple method of determining blood pressure. Recognized as embodying every essential possible in a portable manometer. Made of non-corrosive materials. No friction. Stationary dial. Self verifying.

Tycos authoritative Blood Pressure Manual on application.

Office Type
Sphygmomanometer
Fever Thermometers
Urinary Glassware

\$25.00

EXACT
SIZE

Taylor Instrument Companies, Rochester, N. Y.

21-M



St. Francis Hospital and Training School for Nurses

N. E. Corner BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

**Five Operating Rooms
Every Modern Appliance**

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY

Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco

Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

Dickson-Bull Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue

Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Cystoscopy Urethroscopy
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

INTESTINAL DISTURBANCES

Caused by BACTERIAL INFECTIONS
OR
BILIARY INSUFFICIENCY

Have Been Successfully Treated
With Either

BULGARA TABLETS, H. W. & D.
(BACILLI BULGARICI)

OR

GLYCOTAURO TABLETS, H. W. & D.
(STANDARDIZED OX-BILE)

As May Be Indicated

Samples and information upon request

HYNSON, WESTCOTT & DUNNING
BALTIMORE

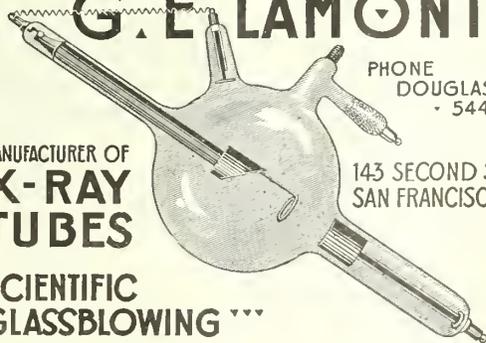
G. E. LAMONT

PHONE
DOUGLAS
- 5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING *****



We Strive to Please Both
Physician and Patient

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 DEPENDABLE STORES 14
SAN FRANCISCO



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

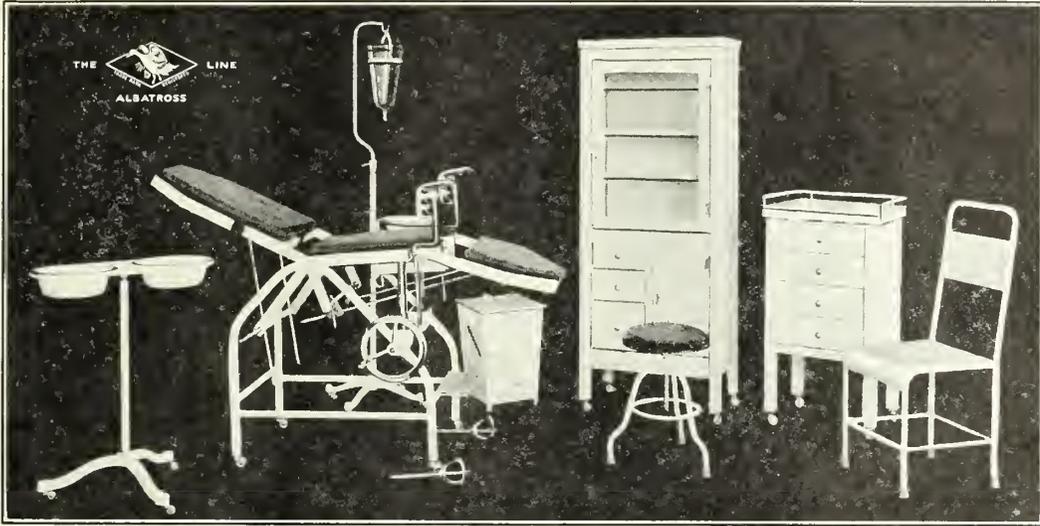
PHONE MARKET 8048

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.
The advice of the hospital staff is always at the
disposal of the patients' physicians.

A Pacific Coast Product With a National Reputation



Office or Industrial Group

Group of articles of the "Albatross Line" recommended for the office, small hospitals and industrial plants. The complete line—over 100 styles and kinds—shown in our catalog. Let us send it to you.

Albatross Metal Furniture Company
 PORTLAND - - OREGON

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
 San Francisco
 Phone Market 2934

931 Maine Street
 Vallejo
 Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, Canal Zone and Philippine Islands.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of the previous calendar year, also 10 cents; two years old, 20 cents; three years old, 25 cents; in other words, 5 cents additional is charged for each year preceding the last calendar year.

REMITTANCES should be made by check, draft, registered letter, money or express order. Currency should not be sent unless the letter is registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "Medical Society, State of California."

VOLUMES begin with the first of January. Subscriptions may commence at any time.

CHANGE OF ADDRESS notice should give both the old and the new address, and state whether the change is permanent or temporary. The change notice must reach us ten days in advance of the date of the issue which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he presents a letter showing authority or making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must have their contributions typewritten—double-spaced and with ample margins—before submitting them. The expense is small to the author—the satisfaction is great to the editor and printer. We cannot promise to return unused manuscript, but try to do so in every instance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if necessary to elucidate the text, will be furnished by The Journal when satisfactory photographs or drawings are supplied by the author. Each illustration, table, etc., should bear the author's name on the back. Photographs should be clear and distinct; drawings should be made in black ink on white paper. While we cannot guarantee to return used photographs and drawings, we use our best endeavors to do so after the article is published, if the word "return" is written on the back of each.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

USEFUL IN
NERVOUS DISORDERS

"Horlick's"

The Original Malted Milk

1. Served hot, as a sedative in insomnia.
2. As a vehicle for the administration of hypnotics.
3. In the dietetic treatment of neurasthenia.
4. For drug addicts, during the state of withdrawal.
5. In the digestive and nervous weakness of invalids, convalescents and the aged.

Avoid Imitations

For printed matter and samples address

HORLICK'S - Racine, Wis.

FREE

With every order of Arsphenamine we are giving an individual container of sterile distilled water suitable for making a proper Arsphenamine solution.

We are prepared to fill orders for all brands and sizes on short notice. Special discounts made on orders of 10 ampules or more.

We are special agents for the Sanborn Blood Pressure Apparatus. Best and most satisfactory instrument on the market for the price, \$17.50.

Special prices on Luer syringes, etc.

Write or Phone

M. L. ADLER & COMPANY

Dealers in Physicians' and Hospital Supplies.

703 New Pantages Bldg.,

LOS ANGELES, CALIFORNIA

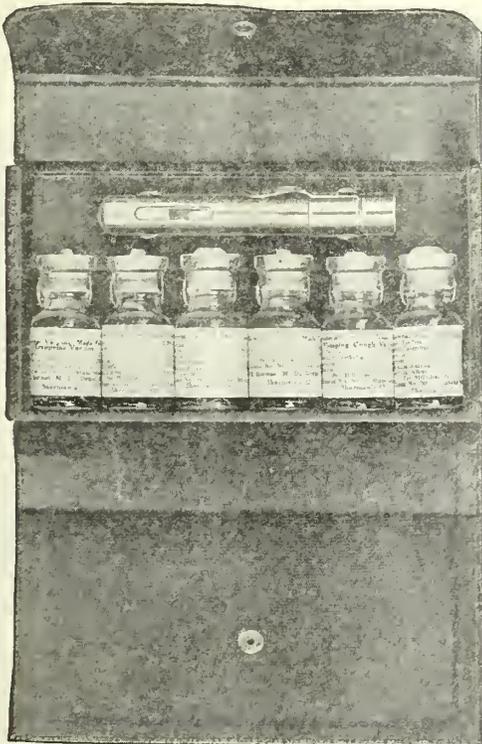
63339—PHONES—67067

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. Associate Staff—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. E. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. Consulting Staff—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. Pathologist—E. V. Knapp, M. D. Roentgenologist—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,
W. H. HILL, M. D., Resident Physician.

**SHERMAN'S
VACCINE CASE**

The best immunizing response in Pneumonia is obtained during the first twenty-four hours after the initial chill. Every hour being vitally important, successful immunologists make inoculations in Respiratory Infections at their first call.

Be prepared; carry an assortment of Sherman's Polyvalent Vaccines and self-sterilizing syringe in this convenient case.

Your dealer will be pleased to supply you.

G. H. Sherman, M. D.

DETROIT - - MICHIGAN

Largest Producer of Stock and Autogenous Vaccines

PNEUMOCOCCUS ANTIGEN

(Partially Autolyzed Pneumococci)

FOR THE TREATMENT OF PNEUMONIA

Prepared according to the method of Dr. E. C. Rosenow, Mayo Foundation

Indicated in the treatment of the primary infections due to pneumococci of the various types with resulting clinical lobar pneumonia.

The extensive use of Pneumococcus Antigen by physicians has more than justified the belief of Dr. Rosenow and his co-workers that the Antigen is of decided assistance in combating pneumococcus infections.

THE PACKAGE

Pneumococcus Antigen is supplied only in 5 c. c. rubber-capped ampoule vials (20 billion partially autolyzed pneumococci in each cubic centimeter). Order as V-903.

ELI LILLY & COMPANY, Indianapolis, U. S. A.



Infant Feeding

Diet Materials

MEAD'S DEXTRI-MALTOSE

Individual infant feeding requires attention—to food salts—to carbohydrates—to proteids—to fats.

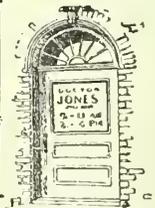
Dextri-Maltose is Malt Sugar (Dextrins and Maltose) supplied to the physician in packages that contain different food salts to suit different feeding conditions.

Cow's milk modified with the proper form of "D-M" and water gives gratifying results in most cases of bottle feeding.

Write for any of these interesting pieces of literature.

- "Food Salts in Infant Feeding"
- "Very Young Infants"
- "Key for Modifying Cow's Milk"

| | | |
|--|---|--|
| <p>No. 1 DEXTRINS and MALTOSE with Sodium Chloride</p> <p>For the average baby.</p> | <p>No. 2 DEXTRINS and MALTOSE Plain Unsalted</p> <p>For the average baby. Any salt can be added.</p> | <p>No. 3 DEXTRINS and MALTOSE with Potassium Carbonate</p> <p>For the Constipated Baby.</p> |
|--|---|--|



FREQUENT
Visits to the Doctor's
Office where the baby is
weighed and where an individual formula
is prescribed is far more satisfactory than to
have the mother follow printed instructions on
a label—that is why directions are left off the
"D-M" package.

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.



Rheumatism—Then and Now

Formerly the complaint "Rheumatism" promptly brought forth a prescription for Salicylates, simple or complex.

Relief, or even cure, was obtained, though sometimes only after fairly prolonged administration.

The constipating, heart-depressant, kidney-irritant and cumulative toxic by-effects were either not fully realized, or passed up as "necessary evils."

Nowadays, the physician writes "ATOPHAN," happy to be able to do so much better for his patient.

Quicker, cleaner-cut results, markedly devoid of those "it-can't-be-helped" drawbacks.

U. S. A. Made and Available Everywhere

Complete Information and Ample Trial Quantity from

SCHERING & GLATZ, Inc., 150 Maiden Lane, NEW YORK

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

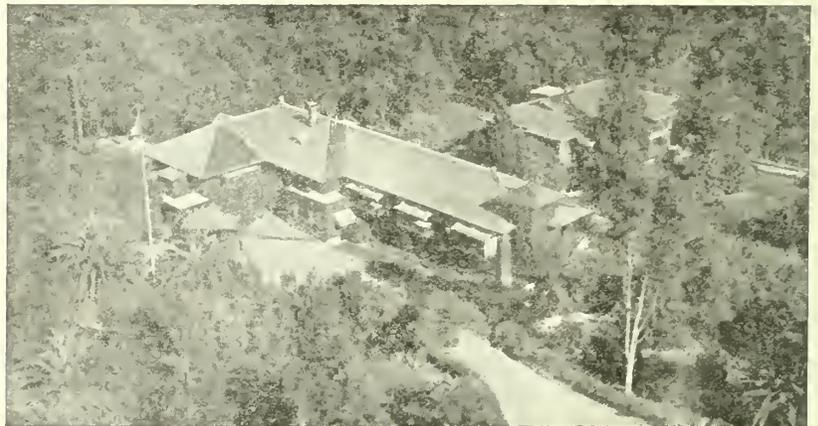
LAS ENCINAS

PASADENA, CALIFORNIA



A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped.

Climate Ideal the Year Around.
Cuisine Excellent.
Adequate Dairy and Poultry Plant.
Outdoor Sports and Recreation of All Kind.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.

Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.
Sun Parlors and Library.
Homelike and comfortable.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

FOR TUBERCULOSIS

BANNING

CALIFORNIA



DR. J. C. KING'S SANATORIUM

Many years of successful results.
 Altitude: 2500 feet. Dry climate.
 Trained nurses. Excellent food.
 Send for Circular.

ALLAN L. BRAMKAMP, A. B., M. D.

JOHN C. KING, M. D.

Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

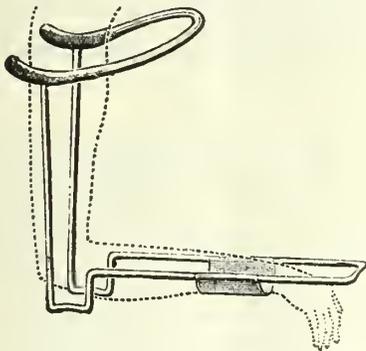
C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.



Lakeside 2808

P. L. ANSELL X-RAY LABORATORY

Thomson Building
Oakland

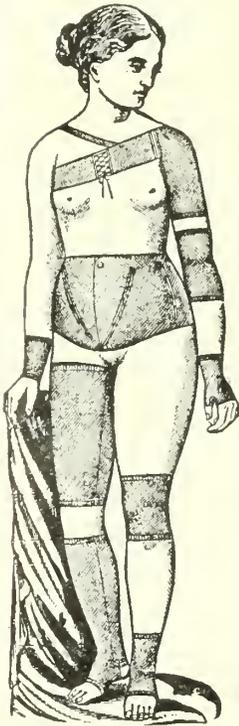
Widemann's Evaporated Goat Milk



Baby Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
San Francisco, Cal.



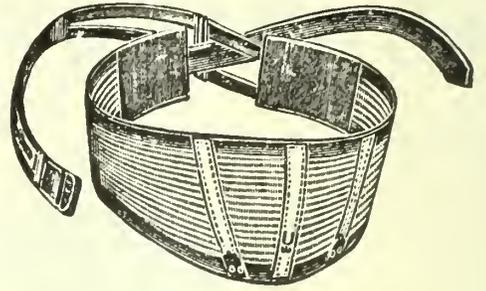
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS

TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DOCTORS' COLLECTIONS

Free Memberships.

Collections on Commission.
Protection Against Delinquents.
Engraved Membership Certificate.
Retention of Patronage.

Thousands are already members. Why not you?
Universal endorsement. References, National Bank of Commerce, Bradstreets, or publishers of this Journal.

SEND FOR LIST BLANKS.

Physicians and Surgeons Adjusting Assn.
Railway Exchange Bldg., Desk 1
Kansas City, Mo.

(Publishers Adjusting Association, Inc., Owners Est. 1902)

FOR SALE

Furniture for office and ten-room and ward hospital in well improved town in thriving dairying section 100 miles from San Francisco. Population of town 1200. Finest opening in California for good man. Two-year lease on building may be secured.

Address Dr. W., California State Medical Journal.

Home School for Nervous and Backward Children

Most approved methods of physical and mental development through motor activities and sense training. Outdoor study and play the entire year.

Beautiful estate devoted to the welfare and happiness of the children. Ideal home life.

THE CEDARS

ROSS, MARIN CO., CAL.

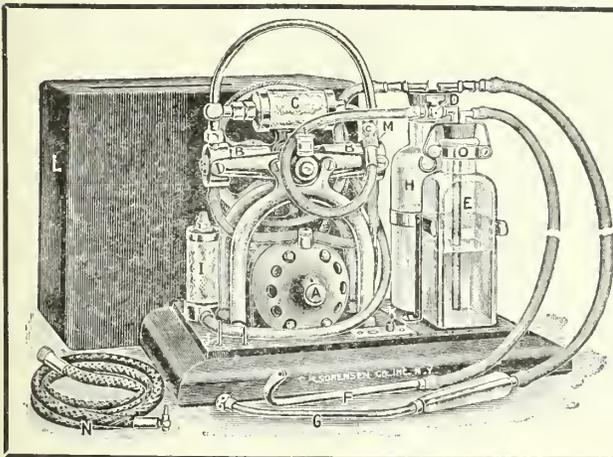
C. C. Myers, Principal.

Cancer Odors

—and the malodorous dejecta of typhoid and other intestinal cases come under the same category—

can be made materially less prejudicial to the nurse's health if you permit her to insert a tuft of "Nazeptic Wool" in each nostril before she dresses the cancer or empties the used vessel. "Nazeptic Wool" is absorbent cotton medicated with phenol, eucalyptol, methyl-salicylate and menthol; such odors, when filtered through the "Wool" during inhalation, are materially antisepticized. Samples are available.

SHARP & DOHME *of Baltimore*



The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

For particulars write

Bischoff's Surgical House

Dealers in Physicians and Hospital Supplies

1702-6 Telegraph Ave.

Oakland, Cal.

Microscope Exchange

EXPERT REPAIRING

FOR SALE

| | |
|-----------------------------------|---------|
| B. & L. Physician Microscope..... | \$80.00 |
| Leitz Microscope | 70.00 |
| B. & L. Physician Microtome..... | 50.00 |
| Beck Microscope | 45.00 |
| German Prism Binoculars..... | 40.00 |

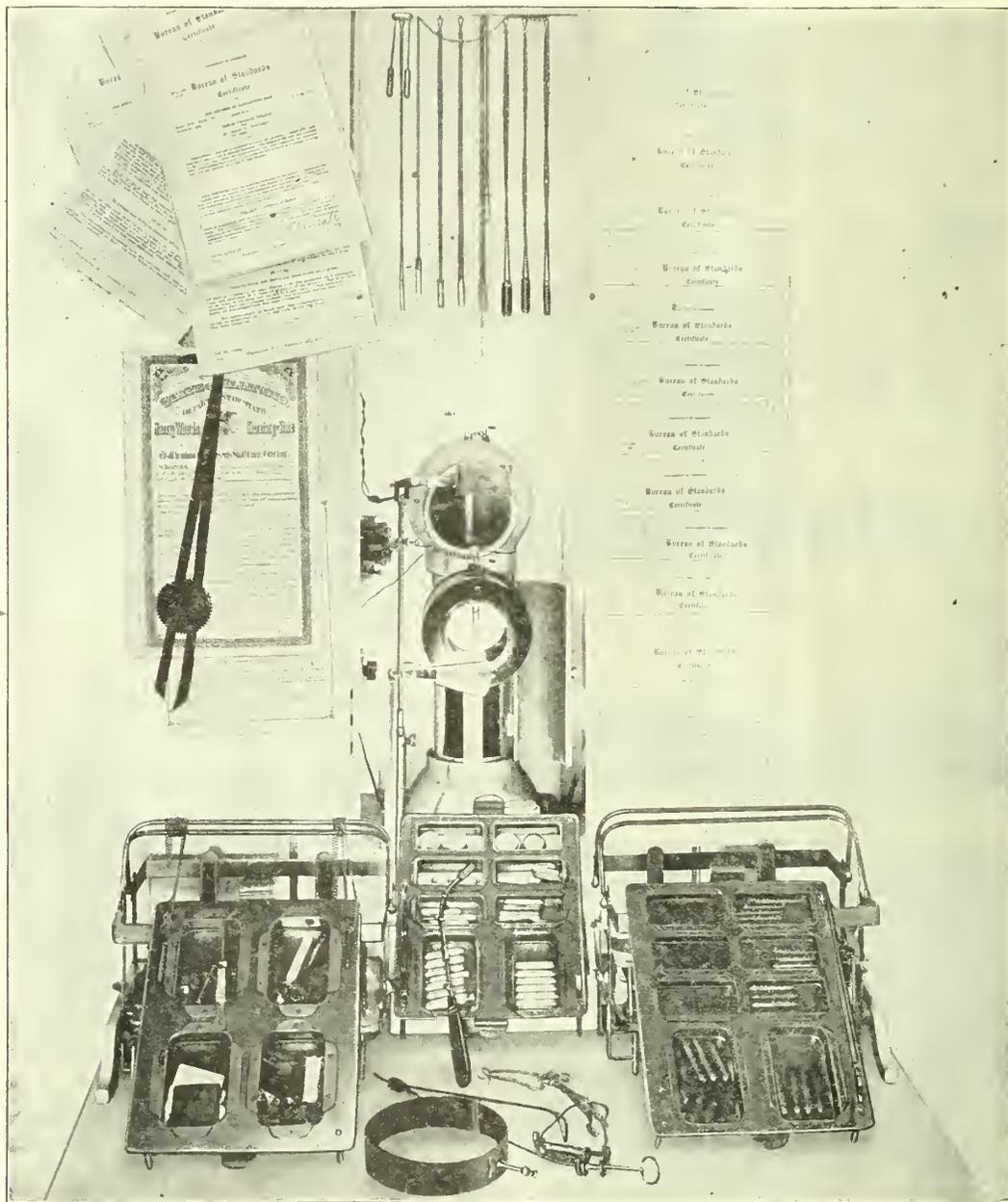
First-class Condition

Agency for Leitz & Zeiss Microscope.

Skin Lesions

RADIUM

Cancer



Incorporation Certificate of the
Chicago Radium Institute
1912

Apparatus for
Quantitative Measurement
of Radium
Applicators and Filters

Standardization Certificates
Bureau of Standards
Washington, D. C.

FRANK H. BLACKMARR, M. D.

Telephones Majestic 7044 and 7045

1513-1517 Marshall Field Annex Building, 25 East Washington Street, Chicago, Illinois



Co-operation

THE Victor X-Ray Corporation does far more than develop, manufacture and sell X-ray apparatus. It is more than a purely commercial institution. Ever since the X-rays were practically applied it has acted as a technical counselor and engineer to physicians and surgeons. For nearly a generation it has placed its facilities, its accumulated electrical and physical knowledge, its wide experience in manufacturing X-ray apparatus and in installing that apparatus in hospitals and offices at the disposal of the medical profession.

From the day of its foundation the Victor X-Ray Corporation has steadily pursued this policy of co-operation. Physicians and surgeons have brought to it their problems. As a result it has developed in its research laboratories apparatus which is to be found in the foremost hospitals and practitioners' offices.

Every physician recognizes the invaluable aid that the X-rays lend in diagnostics and therapeutics. The time is rapidly approaching when every physician will install his own X-ray apparatus.

To keep progressive physicians informed of the improvements that are made in X-ray equipment and to set forth new applications of the X-ray, the Victor X-Ray Corporation publishes "Service Suggestions."

"Service Suggestions" will be sent free of charge to physicians on request, whether or not they are users of Victor apparatus. The publication of the organ is merely part of the service rendered by the Victor X-Ray Corporation to the medical profession.

The Victor X-Ray Corporation feels that its responsibility does not end with the manufacture of the most efficient apparatus that can be designed. It studies a physician's requirements before it supplies a machine; it gives practical guidance in the operation of the machine when called upon to do so; and through its many service stations it is always ready to keep its machines in perfect condition. And lastly, it publishes "Service Suggestions" to chronicle X-ray progress.

Victor X-Ray Corporation

General Offices and Factory

Jackson Blvd. at Robey St.

Chicago

Territorial Sales Distributors:

San Francisco, Calif., Bush Electric Corporation, 334 Sutter Street
 Los Angeles, Calif., Victor Electric Los Angeles, 930 Hill Street

HAY FEVER MEMORANDA

Early Spring Type. Patients whose hay fever develops in late March, April or beginning of May should be tested with pollens of early flowering trees.

Late Spring Type. Patients whose hay fever develops in the latter part of May, or during June, should be tested with the pollens of the chief grasses, such as orchard grass, timothy, red top—and certain early flowering weeds.

ARLCO-POLLEN EXTRACTS

For *Cutaneous Tests* and *Treatment* cover early and late spring, *also* summer and autumn.

Literature and List of Pollens on Request.

THE ARLINGTON CHEMICAL CO.

YONKERS,
N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg NEW YORK Fifth Av. & 42 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS

and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices
108 N. State Street 10 Union Square LONDON
CHICAGO NEW YORK PARIS

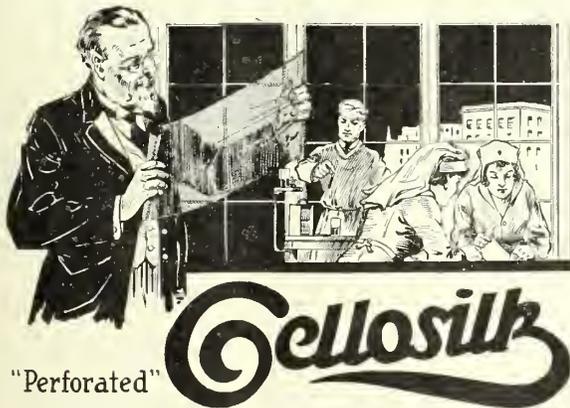
TO HER DOCTOR FROM A PATIENT WITH APPENDICITIS

Most people here have automobiles, but now only sleighs can be used for travel. There is a little danger of our being snowed in at any time. The woman I am boarding with has been a trained nurse, and her husband an ambulance driver, and connected with hospitals in various ways. They tell me that I am in no danger and they believe that in case of emergency they could safely perform an operation themselves with whatever instruments they happened to have.

Will you please advise me what to do?

Distinguette—Those impossible Boches hurled a 42 centimeter projectile into my vegetable garden. Morceauyette—Mon Dieu! And did they shell your peas?—Judge.

If the ladies of King Arthur's court could talk anything like the ladies of the present there were many sleepless knights.—Judge.



"Perforated"

The Modern Dressing Tissue

Non-adherent
Transparent
Sterilizable

A Direct Dressing for Wounds Requiring Air and Drainage.

Does not adhere to newly forming granulations—does not tear or destroy newly formed tissues when removed—eliminates pain—progress of wound is watched through the dressing without removing it.

Especially useful for Skin Grafting, Skin Operations, and all Granulating Wounds.

Does not replace Impervious Cellosilk—both forms are serviceable for every physician, surgeon and hospital.

Your regular supply house will furnish you the professional size rolls, 9 in. x 12 ft., packed in handy container at following prices. Special sizes for hospitals.

Perforated Form—"Standard Perforate," \$2.00.

Impervious Form—For wet dressing coverings, drains, burns, etc.

"Standard" (single weight), \$1.25.

"Standard Heavy" (double weight), \$1.75.

Literature and Samples Sent on Request

MARSHALLTOWN LABORATORIES, INC.

Marshalltown, Iowa

BANKSIA PLACE SANITARIUM



Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Superintendent, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 686.

\$25.00

SPECIAL COURSES at

\$25.00

The Chicago Polyclinic and The Post-Graduate Medical School of Chicago

The Thirtieth Annual Special Course Will Commence

at The Chicago Polyclinic **AND** at The Post-Graduate Medical School of Chicago
 Monday, April 4, 1921 Monday, May 2, 1921

and will continue THREE weeks at each institution. These courses which have given such satisfaction for so many years have for their purpose the presentation in a condensed form of the advances which have been made during the year previous in the following branches: Surgery, Orthopedics, Gynecology, Obstetrics, Genito-Urinary, Stomach and Rectal Diseases and in border-line medical subjects. Fee for each of the above courses \$25.00. Special Operative Work on the Cadaver and Dogs, and General and Special Laboratory Courses. Special evening lectures during the course. For further information address:

THE CHICAGO POLYCLINIC
 M. L. Harris, M. D., Sec'y.
 219 W. Chicago Ave., CHICAGO

THE POST-GRADUATE MEDICAL SCHOOL OF CHICAGO
 Emil Ries, M. D., Sec'y.
 2400 South Dearborn Street CHICAGO, ILLINOIS

Remember the Dates
 of the
 State Meeting
 May 10-11-12, '21
 Coronado



*Announcing
 A New Location*

PERCY J. MEYER & CO.

Largest Pacific Coast Dealers in

Surgical Instruments
 Hospital Equipment
 Orthopedic Appliances

Formerly

359 Sutter Street

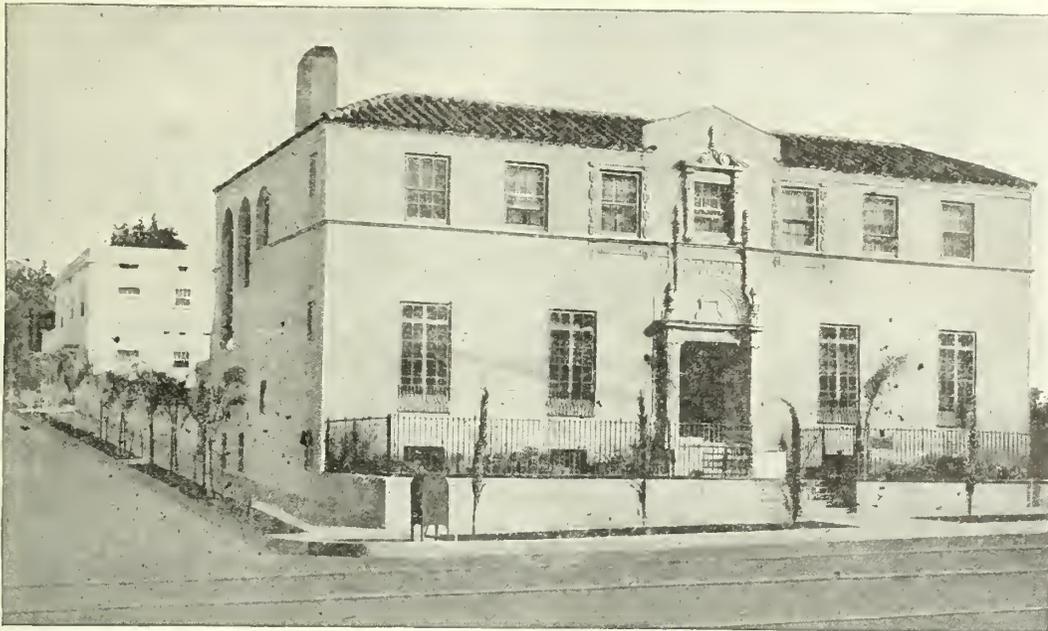
Now Located

379 Geary Street

SAN FRANCISCO

(Next to Stewart Hotel)

Telephone Sutter 3425



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M. D.
Medical Director

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT ~ ACCURATE ~ DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *It should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhoea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each . . . | \$1.00 |
| Urine, Acetone or Diacetic Acid, each . . . | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

M.E.C.

BOSTON MEDICAL
SEP 20 1921

California State Journal of Medicine

ISSUED MONTHLY OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Vol. XIX, No. 4

APRIL, 1921

\$1.00 a Year

CONTENTS

| | | | | | |
|---|-----|--|-----|--|----------|
| Editorials | 139 | Fractured Femur. By Howard Dignan, M. D..... | 147 | Pet Airedale Undergoes Serious Operation. By Edna B. Breitinger | 156 |
| Reveries of a General Practitioner. By Michael Creamer, M. D. | 143 | Episodic Mental States and Border Line Conditions in Psychiatry. By Chas. L. Allen, M. D. | 150 | Modern Radiotherapy. By F. H. Rodenbaugh, M. D..... | 156 |
| Indications for Infusion of Blood Substitutes and Transfusion of Blood in Cases of Traumatic Hemorrhage and Shock. By Edmund Butler, M. D. | 145 | For Better Treatment for Deaf and Crippled Children. By H. L. Langnecker, M. D.... | 152 | Program of the Fiftieth Annual Session of the Medical Society, State of California, Colorado, May 10, 11, 12, 1921.. | 159, 173 |
| | | Early Diagnosis of Pulmonary Tuberculosis. By John C. King, M. D. | 152 | | |

(Contents continued on page IX)

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

FRED I. LACKENBACH BIOLOGIC DEPOT BACTERIOLOGICAL · SEROLOGICAL AND CHEMICAL WORK

SCIENCE

INDUSTRY

IN ORDER TO FACILITATE PROMPT AND EFFICIENT SERVICE TO THE MEDICAL PROFESSION AND TO INSTITUTIONS, WE HAVE CONCLUDED ARRANGEMENTS WITH MR. FRED I. LACKENBACH, 908 BUTLER BUILDING, SAN FRANCISCO, CALIFORNIA, WHO WILL CARRY AN AMPLE STOCK OF ARSPHENAMINE AND NEOARSPHENAMINE (D. R. L.) AT ALL TIMES, AND ACT AS SPECIAL DISTRIBUTING AGENT FOR OUR PRODUCTS IN CALIFORNIA. THESE DRUGS WILL IN FUTURE, THEREFORE, BE READILY OBTAINABLE DIRECT FROM HIM AT LOWEST CURRENT PRICES.

DERMATOLOGICAL RESEARCH LABORATORIES

| | | | |
|----------------------------|---------------------|-------------------------|--------------------|
| NEOARSPHENAMINE (D. R. L.) | | ARSPHENAMINE (D. R. L.) | |
| .90 Ampule . \$2.00 | .45 Ampule . \$1.25 | .6 Ampule . \$1.50 | .3 Ampule . \$1.05 |
| .75 Ampule . 1.75 | .30 Ampule . 1.00 | .5 Ampule . 1.40 | .2 Ampule . .80 |
| .60 Ampule . 1.50 | .15 Ampule . .75 | .4 Ampule . 1.25 | .1 Ampule . .50 |

(10% Discount on 10 Tubes. 20% Discount on 100 Tubes or More)

SPECIAL QUOTATIONS TO PUBLIC HOSPITALS AND FREE CLINICS ON APPLICATION

908 BUTLER BUILDING SAN FRANCISCO

CABLE ADDRESS "SERVMS S.F." · TELEPHONE SVTTER 3122

Luer Syringe Price List

| Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each | Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each |
|-----------------|----------|---------------|--------------------|---------------------|------------------|----------|---------------|--------------------|---------------------|
| Tuberculin..... | ¼ c.c. | \$2.25 | \$1.65 | \$1.40 | Serum..... | 5 c.c. | \$2.50 | \$1.90 | \$1.55 |
| Tuberculin..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Serum..... | 10 c.c. | 3.25 | 2.40 | 2.05 |
| Gray Oil..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Arsphenamine.. | 20 c.c. | 4.50 | 3.25 | 2.75 |
| Tuberculin..... | 1 c.c. | 2.00 | 1.50 | 1.25 | Eccentric Tip... | 20 c.c. | 5.00 | 3.75 | 2.75 |
| Subcutaneous... | 1½ c.c. | 1.25 | .90 | .80 | Arsphenamine.. | 25 c.c. | 5.00 | 3.75 | 3.25 |
| Precision..... | 1½ c.c. | 2.00 | 1.50 | 1.30 | Arsphenamine.. | 30 c.c. | 5.75 | 4.35 | 3.75 |
| Subcutaneous... | 2 c.c. | 1.40 | 1.00 | .80 | Eccentric Tip... | 30 c.c. | 6.75 | 5.35 | 3.75 |
| Precision..... | 2 c.c. | 2.25 | 1.75 | 1.50 | Arsphenamine.. | 50 c.c. | 8.00 | 6.00 | 5.00 |
| Lachrymal..... | 3 c.c. | 3.50 | 2.65 | 2.25 | Eccentric Tip... | 50 c.c. | 9.00 | 7.00 | 5.00 |
| Vaccine..... | 3 c.c. | 2.00 | 1.45 | 1.25 | Arsphenamine.. | 100 c.c. | 12.00 | 9.00 | 7.50 |
| Dental..... | 4 c.c. | 2.25 | 1.65 | 1.35 | Eccentric Tip... | 100 c.c. | 13.00 | 10.00 | 7.50 |

Return both parts. New Syringe supplied at cost of broken part.

Fred I. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

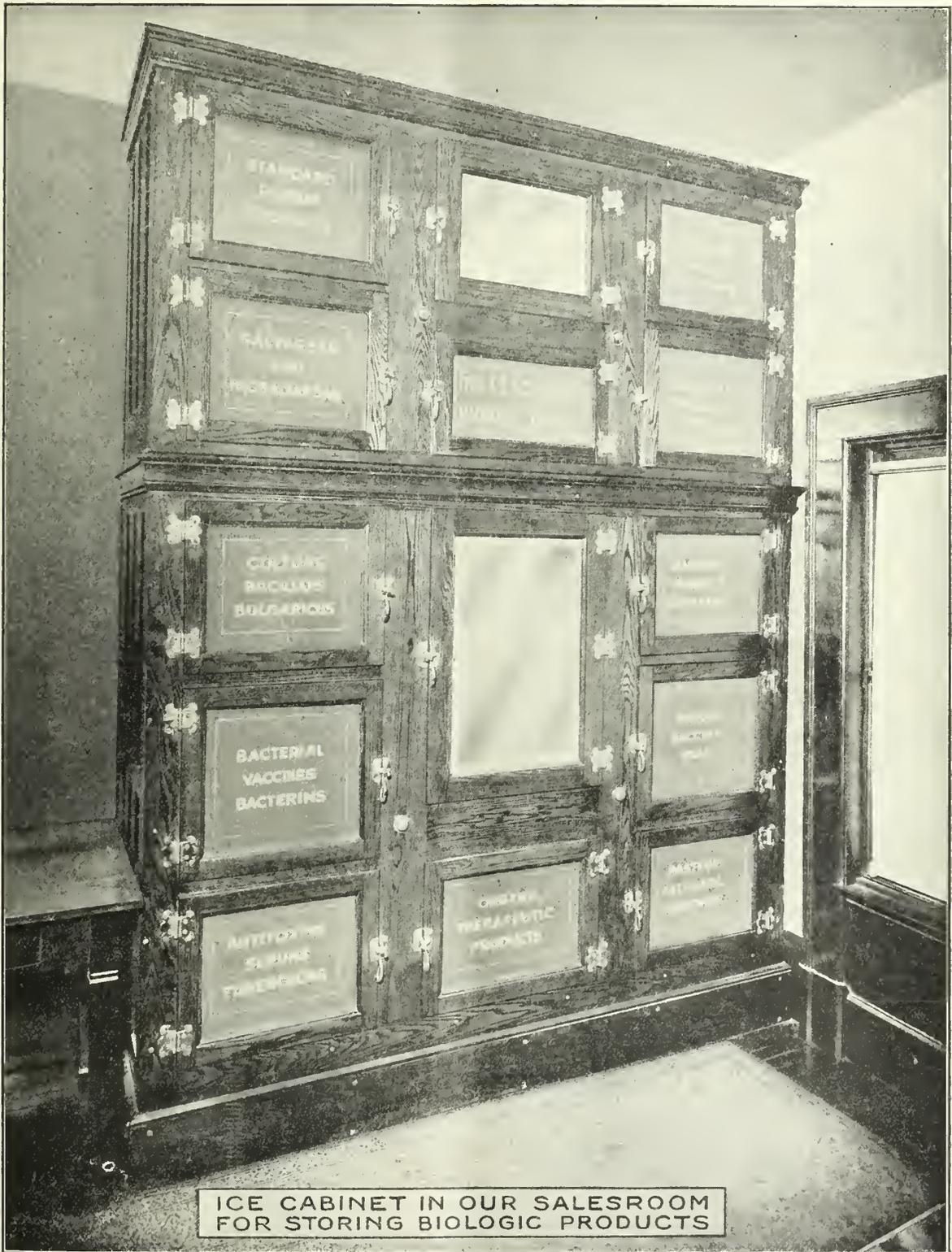
135 STOCKTON STREET
TEL. SUTTER 3122

FRED I. LACKENBACH BIOLOGIC DEPOT

Our Salvarsan Service

- ¶ We supply complete Sterilized Outfit consisting of graduated reservoir, tubing, observation tube, Luer glass connection and two suitable needles; also 250 c.c. flasks of freshly double-distilled water and sterile salt solution with 15% sodium hydroxide, exactly enough to neutralize the dose of Arsphenamine—all for \$6.00. The Salvarsan solution may be effected in the flask containing the double-distilled water.
- ¶ When you have your own outfit we can send the freshly double-distilled water, sterile salt solution and NaOH q. s. for \$1.00.
- ¶ For concentrated solutions we supply 20 c.c. Luer Syringe outfit with suitable needles, mixing flask containing freshly double-distilled water, all sterilized and ready for use—at \$6.00 complete.
- ¶ These outfits and solutions are the very best that money can buy. They are the culmination of years of practical experience and painstaking effort.
- ¶ In San Francisco we loan out gravity outfit at \$2.50 and 20 c.c. Luer outfit at \$1.50 complete.
- ¶ For immediate use we prepare the solution for \$1.00. The actual cost of preparation, however, is only 50c. since the flask of double-distilled water would be 50c.

Wassermann Test \$5.00



ICE CABINET IN OUR SALESROOM FOR STORING BIOLOGIC PRODUCTS

Biologic Products should be kept cool and dark at a temperature of 40°-50° F.

Fred I. Lackenbach, Biologic Depot
 SAN FRANCISCO

MAINTAINS TWO OF THESE IMMENSE STORAGE REFRIGERATORS

Fred I. Lackenbach receives all supplies direct from the producer at frequent intervals. Druggists and Jobbers with limited output can not possibly maintain this efficient service.

Vaccine Virus to properly retain its efficacy should be kept on ice

GONOCOCCUS GLYCEROL-VACCINE

Stable and Effective

Advantages:

- 1- Will not deteriorate. 2- Free from autolytic products.
- 3 - In preliminary trials has not produced toxic reactions even in large doses.

The types of cases reported to us as favorably influenced by Gonococcus Glycerol-Vaccine are chronic gonorrheal infections, including gonorrheal rheumatism, epididymitis, prostatitis and posterior urethritis.

Further Information on Request

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE NEW YORK

B&B Surgical Dressings

Sterile to the Core

Cotton and Gauze sterilized after wrapping

B & B Sterile Dressings are sterilized, of course, in the making. But they are sterilized again after wrapping—by live steam following a vacuum.

They go out sterile to the core. This is proved by testing center fibers in an incubator.

Such high standards—such exactions—apply to every B & B product.

Three masters have each spent over 20 years in perfecting B & B Adhesive.

B & B Handy-Fold Plain Gauze—in pads—comes sealed in parchmine envelopes.

B & B Handy-Package Absorbent

Cotton is used without removing the roll.

B & B Plaster Paris Bandages come wrapped in water permeable paper.

B & B Formaldehyde Fumigators are given unusual strength.

B & B Surgeon's Soap, in a 1% lather, equals in bactericidal strength a 50% solution of carbolic acid.

These standards meet your every requirement. In some respects, we think, they exceed them. They represent the highest developments in this line. A test of one product will win your respect for all. Please make it.



Learn how it excels



Phenol Coefficient—51.98

BAUER & BLACK Chicago New York Toronto

Makers of Sterile Surgical Dressings and Allied Products

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.

SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."

THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.

FOURTH—That vaccination against all three infections does definitely protect against all three.

FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.

SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley California

Producers of Vaccines true to labeled content and count

Write for Therapeutic Index Price List

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients).

Includes medical and nursing care, board and laundry.

Medical Director, Dr. Philip King Brown

APPLY OFFICE

AREQUIPA

401 Medical Bldg., San Francisco

Phone Franklin 844

WANTED

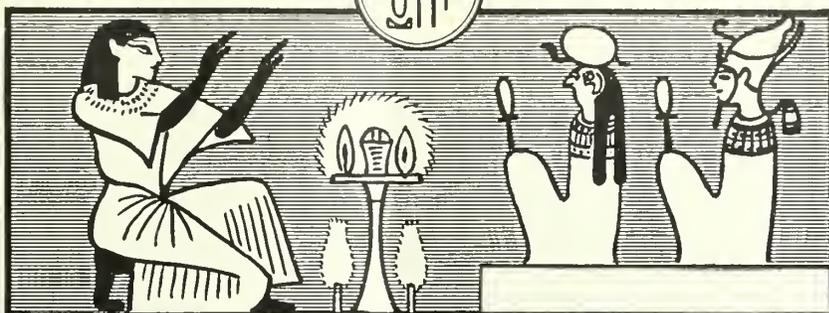
A Resident Interne in a Tuberculosis Sanatorium, single man, salary \$100 per month and maintenance.

Address

Henry Hoit, M. D., Medical Director

La Vina Sanatorium, La Vina, Calif.

Remember the Dates
of the
State Meeting
May 10-11-12, '21
Coronado



FOOD QUALITY IN CONVALESCENCE

In convalescence after disease or operation it is food quality that counts.

"Ovaltine" provides food quality. It contains every element essential for the restoration of impaired function and the rebuilding of tissue wasted by disease.

The proteins of "Ovaltine" are such that they can be given with minimum disturbance of the impaired digestive function or aggravation of the condition of stomach erethism so frequently found in convalescence; its carbohydrates and fats are those most easily digested and assimilated; and its natural mineral salts of calcium, iron and phosphorus derived from milk and eggs effect remineralization indispensable to the convalescent.

OVALTINE

Obtainable from druggists in 8 oz., 17 oz., 5 lb. and 10 lb. tins

SAMPLES AND LITERATURE MAILED UPON SIGNED REQUEST

THE WANDER COMPANY

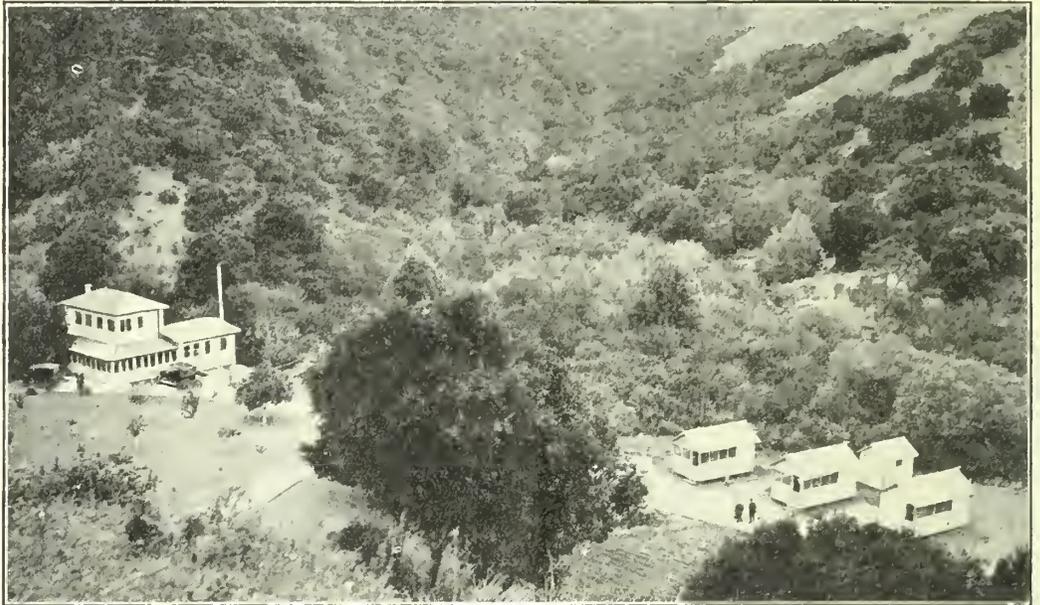
37 SOUTH WABASH AVENUE, CHICAGO, ILL.

Works: VILLA PARK, ILL.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
 of Hospital
 Atmosphere*
 □



SOME OF THE COTTAGES

□
*Rates
 Reasonable*
 □
Climate Ideal
 □

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
 FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN C. YATES, San Diego, President
 JOHN H. GRAVES, San Francisco, President-Elect
 WM. DUFFIELD, Los Angeles, 1st Vice-Pres. JOSEPH CATTON, San Francisco, 2d Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Secretary. ALFRED C. REED, San Francisco, Editor

COUNCILORS

First District—San Diego, Riverside, Orange, San Bernardino and Imperial Counties.

J. C. KING, Banning
 (Term expires 1921)

Second District—Los Angeles, Santa Barbara, Ventura and Kern Counties.

WM. H. KIGER, Los Angeles
 (Term expires 1922)

Third District—San Luis Obispo and Monterey Counties.

T. C. EDWARDS, Salinas
 (Term expires 1921)

Fourth District—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.

GEORGE H. AIKEN, Fresno
 (Term expires 1921)

Fifth District—Santa Clara, San Mateo, San Benito and Santa Cruz Counties.

FRANK H. PATERSON, San Jose
 (Term expires 1923)

Sixth District—San Francisco County.

C. G. KENYON, San Francisco, Chairman
 (Term expires 1922)

Seventh District—Alameda, Contra Costa, San Joaquin and Calaveras Counties.

EDW. N. EWER, Oakland
 (Term expires 1923)

Eighth District—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.

JAMES H. PARKINSON, Sacramento
 (Term expires 1922)

Ninth District—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.

ANDREW W. HOISHOLT, Napa
 (Term expires 1923)

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); H. A. L. Rykogel, San Francisco (term expires 1921); C. Van Zwalenburg, Riverside (term expires 1923).

CALIFORNIA STATE JOURNAL OF MEDICINE

BUTLER BUILDING, SAN FRANCISCO

CONTENTS -- Continued

Correspondence: Resignation of the Editor, 173; A Worthy Appeal, 173; A Section on Dermatology 173
 County Societies: Alameda, 174; Los Angeles, 174; Mendocino, 174; Orange, 174; San Diego,

175; San Francisco, 175; San Joaquin, 175; Siskiyou, 175; Ventura 175
 Clinical Department: Filahiasis by Drs. Hale and Gundrum. 177
 University of California Hospital: Children's Department.. 177

Acute Perforation of Duodenal Ulcer. By Frank J. Gundry, M. D. 178
 New Members, 179; Transferred, 179; Resigned, 180; Deaths 180



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium, Livermore, Calif.

HYDROPATHIC DEPARTMENT



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of HYDROTHERAPY,—coupled where indicated with NAUHEIM,—RADIO ACTIVE CLAY,—CALCIC CARBONATE,—MAGNESIA CARBONATE and SULPHATE BATHS.

Modern modifications of ZANDER APPARATUS, MASSAGE and MANIPULATIONS. ELECTROTHERAPY, THERMO-PENETRATION, HELIOTHERAPY, PROCTOCLYSIS, CORRECTIVE GYMNASTICS and the application of tabulated PHYSICAL EFFICIENCY TESTS

We are equipped with every known modern mechanical device of scientifically proven efficiency for the relief of suffering. We maintain every facility for recuperation that is to be found in the best of European Spas. Add to this a most comprehensive SERVICE ORGANIZATION of TRAINED ATTENDANTS rendering PERSONALIZED SERVICE in every case.

Our Institute was primarily designed for the relief of persons suffering from chronic disorders, and our equipment is especially assembled for their treatment.

We are also prepared to take care of POST-OPERATIVE CONVALESCENTS. Those in need of "RECONSTRUCTION" and "CONDITIONING" will find here ideal facilities, before resuming commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

DOCTOR:—You may have among your patients today, one or several stubborn cases which resisted every method of treatment that you have thus far employed? Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with PHYSIO-THERAPY through our co-operation. Our twenty years of experience in this work is positive assurance to you of the highest grade of SERVICE procurable. **Why not investigate thoroughly about us today?**

Care—Courtesy—Privacy—Comfort.

Best references. Inspection invited.

G. H. Richardson, M. D.,
Medical Director.

N. A. Karpaty, B. Sc.,
Technical Superintendent.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

SYPHILO-DIAGNOSIS

DARKFIELD FOR SPIROCHETES

WASSERMANN:

TWO ANTIGENS—COLD AND WARM REACTION

LANGE COLLOIDAL GOLD REACTION

NOGUCHI REACTION

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES

133 GEARY STREET, SAN FRANCISCO

Telephone SUTTER 1015

The Seymour Sanatorium

Banning, California

SITUATED in the broad San Gorgonio pass at an elevation of 2,400 feet, with inspiring views of Mt. Grayback and old San Jacinto on either hand, near, yet not upon the desert, the SEYMOUR SANATORIUM is exceptionally well located both from a climatic and environmental standpoint.

Here nature gives her best, and all modern means are used to assist and reinforce her efforts.

Careful study of each case, strict individualization in treatment and painstaking attention to detail, assure to the patient the attainment of the maximum benefit from the sanatorium sojourn.

The rates are very moderate

CHARLES E. ATKINSON, M. D., Medical Director



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Ætna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Ætna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Ætna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Ætna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Ætna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1921 - - - - \$204,839,890.53

If you are not acquainted with the Ætna Agent in your town write direct to
J. R. MOLONY, Manager, Western Branch
Department "C," 333 Pine Street, San Francisco, Calif.

ÆTNA LIFE INSURANCE COMPANY

AFFILIATED WITH

ÆTNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

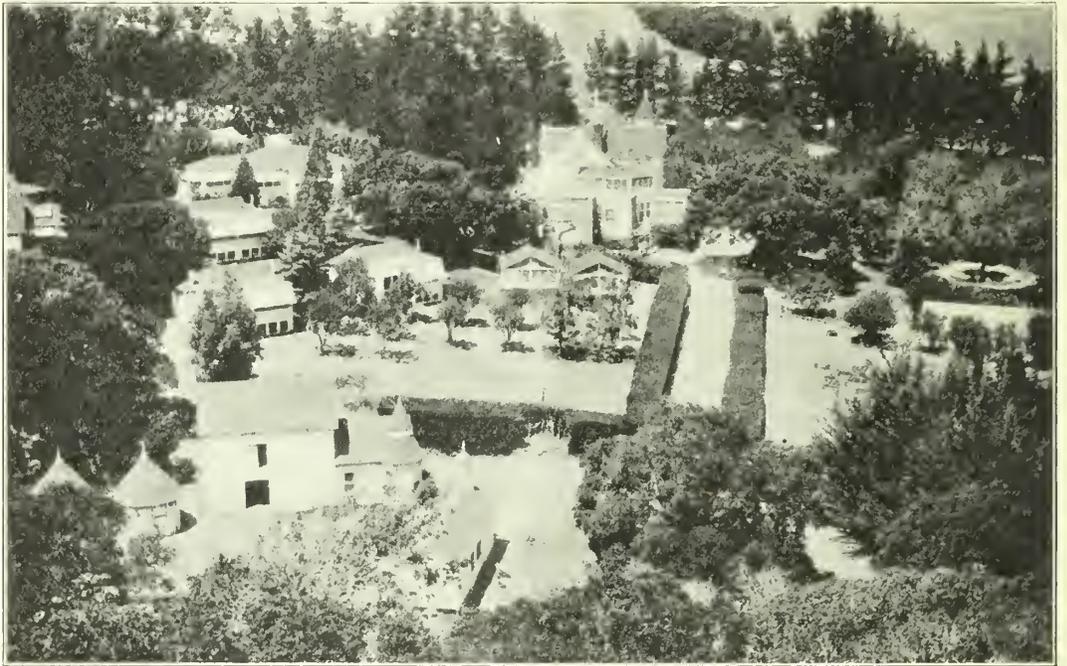
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



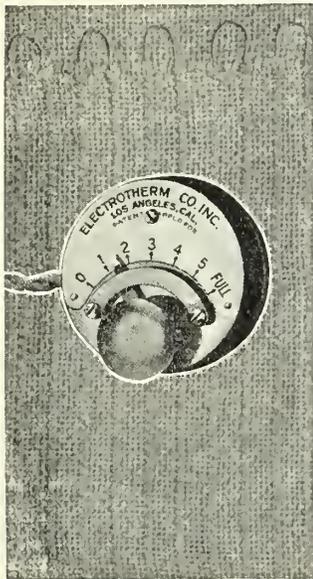
A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont



USE THERMOWEVE

The latest and most practical Electrical heating blanket wherever uniform heat and better elimination is desired.

THE THERMOSTAT,

as shown in cut, is operated from the heat of the blanket. The compensating bar, being thermos metal, is sensitive to heat and cold.

It is infallible in its action.

It is adjustable to any temperature of heat desired.

You simply turn the indicator hand to the point on the dial corresponding to the maximum degree of heat required.

The circuit will then automatically open and close.

This keeps the blanket at an even temperature and under perfect control.

THE FLEXIBLE FILLER

Is made of heavy cotton warp, forming a one-piece fabric in which is woven a small doubly insulated cable of finely drawn copper wire.

There can be no cold spots.

It is strong and durable and will last indefinitely.

Correspondence Solicited

Will mail our interesting booklet upon request.

THE ELECTROTHERM CO., INC.

252-254 San Fernando Blvd.

Phone Lincoln 1967

Los Angeles, California

Always Sterile and
Always at Hand



MORNEAU SANITARY THERMOMETER CASE

This compact and efficient holder keeps your fever thermometer in a sterilizing solution at all times when not in use, obviating any possibility of carrying infectious bacteria.

It is no larger than a fountain pen, just as easy to carry, can not leak, and may be easily refilled.

The Morneau Sanitary Case for thermometers is built for hard usage and should last a life time as it is made of only the highest grade materials. The case is so designed as to permit the use of any standard clinical thermometer, although the Morneau One-Minute Thermometer, made with markings inside the glass, proves the most satisfactory.

Your Supply House Has the Morneau in Stock. So Has Your Druggist. If Not, Write Us.

- No. 4—Equipped with Morneau One-Minute Thermometer with pocket Clip - - - \$4.00
- Case alone - - - - - \$2.50
- No. 5—Equipped with Morneau One-Minute Thermometer, fitted with gold chain and pin \$5.00
- Case alone - - - - - \$3.50
- Morneau One-Minute Thermometer - - \$1.50
- Morneau Half-Minute Thermometer - \$1.50

Morneau
SANITARY
THERMOMETER CASE
.. COMPANY ..
APPLETON — WISCONSIN

**The
Management
of an
Infant's Diet**

Infants' Stools

Regularity in bowel movements contributes much toward normal, healthful progress, and a knowledge of the number and character of the stools during each twenty-four hours is an important part of the general management of early life and assists much in properly adjusting the diet.

Suggestions for the regulation of infants' stools by slight changes in the make-up of the diet and particularly in relation to

Constipated Movements

are given in our book, "Formulas for Infant Feeding," and in a pamphlet devoted especially to this subject. This literature will be sent to physicians who are interested in the matter.

Mellin's Food Company,

Boston, Mass.

JUST PUBLISHED

PSYCHO-PATHOLOGY

By Edward J. Kempf, M.D., Clinical Psychiatrist to St. Elizabeth's Hospital (formerly Government Hospital for the Insane), Washington, D. C., author of "The Autonomic Functions and the Personality." 762 pages + xxiii, 6 3/4 by 9 3/4, with 97 illustrations. Printed on beautiful India Tint paper, and bound in silk cloth binding, with gold stamping. Price, \$9.50.

A complete book, elaborating the new epoch in the study and treatment of the adjudicated insane.

Abnormal behavior is one of the most interesting topics for study. When the principles underlying it are mastered many mysteries that have perplexed medical men, criminologists, and lawyers are solved. Doctor Kempf has rendered a real service to physicians in the writing of "PSYCHOPATHOLOGY."

The book is handsomely printed on India Tint paper, and the illustrations are beautiful specimens of the engraver's art

 Just sign the attached coupon and mail, and the book will be sent at once.

C. V. Mosby Company
MEDICAL PUBLISHERS

ST. LOUIS U. S. A.

Send for a copy of our new 96-page catalog

PARTIAL TABLE OF CONTENTS

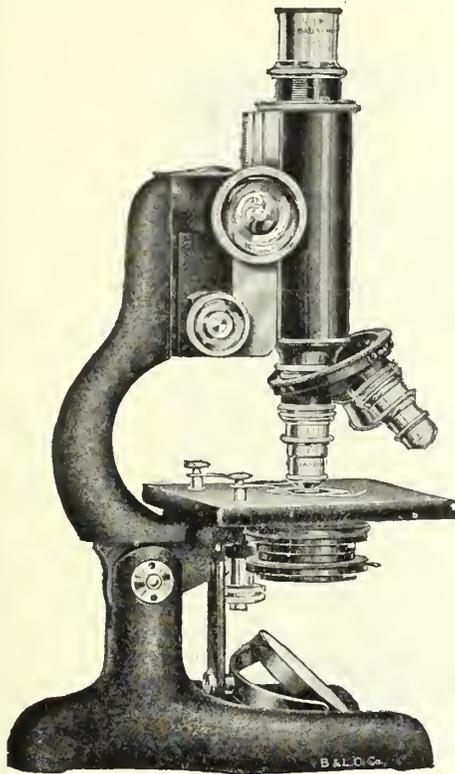
The Physiological Foundations of the Personality; The Psychology of the Family; The Universal Struggle for Virility, Goodness and Happiness; Influence of Organic and Functional Inferiorities upon the Personality; Mechanistic Classification of Neuroses and Psychoses Produced by Distortion of Autonomic-Affective Functions; The Mechanism of the Suppression or Anxiety Neuroses; Repression or Psychoneuroses, Their Mechanisms and Relation to Psychoses Due to Repressed Autonomic Cravings; Benign Compensation or Regression Neuroses, with or without Dissociation of Personality; Manic-Depressive Psychoses; Elimination or Simulation for Wish-Fulfillment in Affective Crises; Pernicious Repression Compensation Neuroses; The Psychopathology of Paranoia; The Psychopathology of the Acute Homosexual Panic; Acute Pernicious Dissociation Neuroses; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Defensive Hatred, Eccentric Paranoid Compensations and Pernicious Deterioration; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Crucifixion and Catastrophic Adaptations to the Repressed Cravings; The Psychopathology of Chronic Pernicious Dissociation of the Personality with Hebephrenic Adaptations; Predominance of Excretory Erotic Interests; Reconsideration of the Conditioned Autonomic Affective Determinants of Abnormal Variations of Behavior; Psychotherapeutic Principles.

C. V. Mosby Co. (Calif.)
St. Louis

Send me the new book by Edward J. Kempf, M.D., "PSYCHOPATHOLOGY," for which I enclose \$9.50, or you may charge to my account.

Name.....

.....



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

**BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA**

154 SUTTER STREET
SAN FRANCISCO CALIFORNIA



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. V. P. OSBURN
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

MT. SHASTA
14,442 FEET HIGH

ALQUA

THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLED AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U.S.A.

Grageroff & Papazoni



Laboratory of Clinical
Pathology



222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

- Readily Soluble
- Practically Free from Toxicity
- Easy of Administration

Neosalvarsan

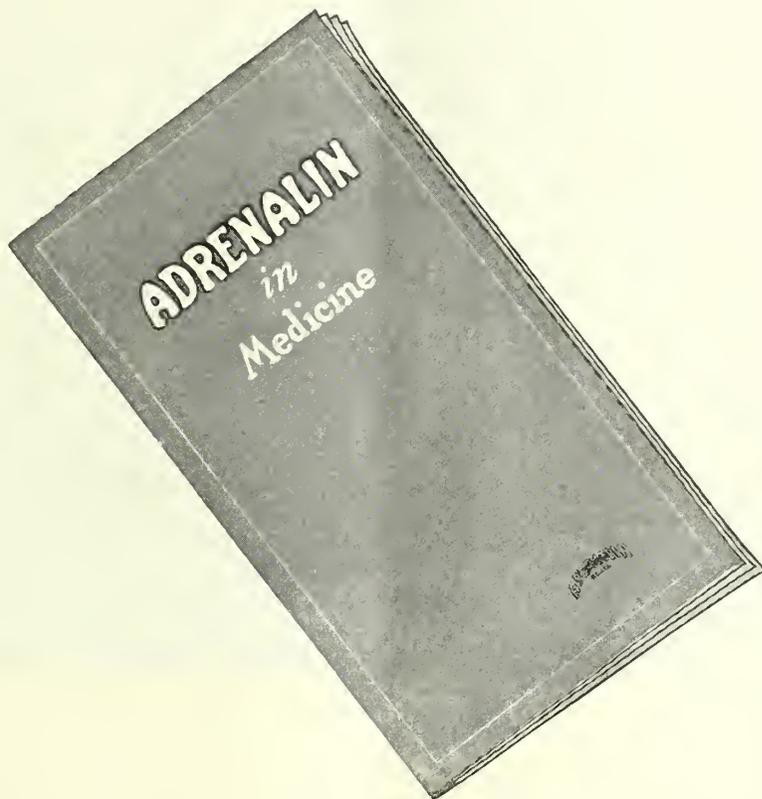
(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you order direct from

H. METZ LABORATORIES, Inc
One Twenty-Two Hudson Street, New York.

ADRENALIN
ORIGINAL
P. D. & CO.
TRADE MARK



Send for this Booklet

THE voluminous literature which has accumulated during the past twenty years on the subject of Adrenalin is based almost exclusively on laboratory and clinical observations of the action of the Parke, Davis & Company product—Adrenalin, P. D. & Co.

An epitome of all the essential facts—chemistry, physiology, therapeutics, pharmacy—boiled down to a few interesting pages, will be sent to physicians on receipt of request.

Parke, Davis & Company

DETROIT

Quartz Mercury Vapor Ultra Violet Light

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, Specula, Endoscopes, Proctoscopes, Laryngeal, Pharyngeal
Nasal, Urethral, Vaginal, Rectal, Uterine Lenses and Radiating
Tubes for the application of ultra-violet emanations.

WAGNER QUARTZ VAGINAL AND RECTAL SPECULA

The Pambrun Deep Penetration Filter System

TECHNIQUE — INSTRUCTION — INSTALLATION — MAINTENANCE

KROMAYER UNIT—Water Cooled

ALPINE SUN UNIT Air Cooled

L. B. PAMBRUN



Phelan Building
SAN FRANCISCO
Phone SUTTER 2322

HILLCREST HOSPITAL

HEMET, CALIFORNIA

RESERVATIONS FOR SIX TUBERCULAR PATIENTS

Now available in a high class institution of exceptional equipment and surroundings. **HILLCREST**, originally the country estate of a millionaire, laid out and built on a lavish and luxurious scale, occupies a delightful 500 acre park in the Southern Sierra foothills overlooking lovely San Jacinto and Hemet Valleys—romantic and inspiring locale made famous by Helen Hunt Jackson in "Ramona."

An exclusive modernized retreat for scientific treatment, rest and recreation. Rate for private room and including all service except medical, X-Ray and laundry, is \$35 a week. Competent staff of medical specialists. Fullest co-operation with physicians sending patients.

Address

ALBYN BUCHANAN, Resident Superintendent, Hemet, California

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

Ethical

Reliable

DIAGNOSTIC LABORATORIES

OF

GRANT & WILSON

PATHOLOGISTS

BACTERIOLOGICAL
CHEMICAL
CLINICAL
METABOLIC
PATHOLOGICAL
SEROLOGICAL

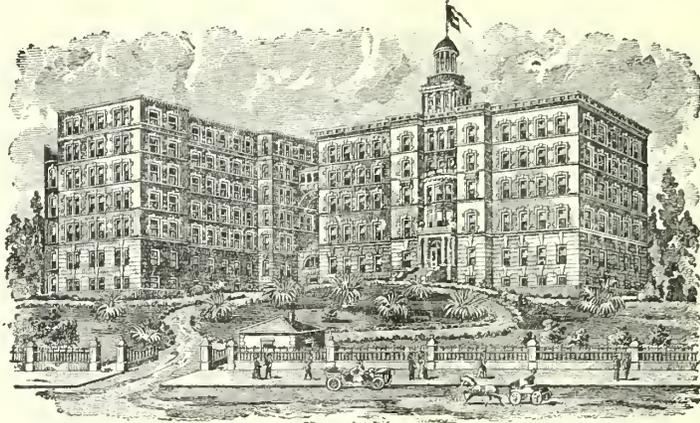
327 MERCHANT'S NATIONAL BANK BLDG.
Los Angeles, Cal. Phone 64536

Prompt

Accurate

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information

Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

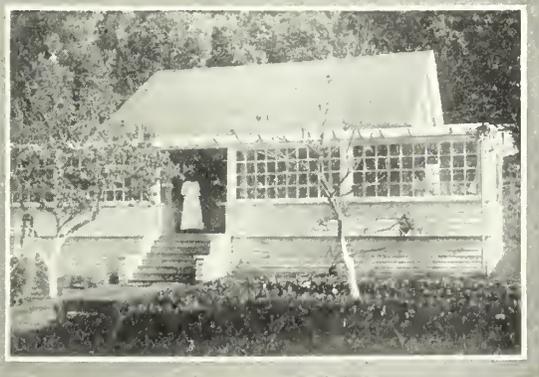
- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

*Patronize Your
State Journal
Advertisers*

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





TRAVERS Surgical Co.

SAN FRANCISCO, CAL.

Phone Sutter 4651 372 Sutter Street

SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES

Travers' Surgical Corset

This Corset of special benefit for correcting Entroptosis. It is laced in front with an inner belt to support the abdomen as desired and is a most perfect corset. This corset is recommended by physicians for use after operations and for many ailments.

Expert fitter in charge.

Pituitary Liquid

is the perfect preparation of Posterior Pituitary active principle. It, too, is without preservatives— $\frac{1}{2}$ c. c. obstetrical, 1 c. c. surgical.

Corpus Luteum (Armour)

is true substance and will give results. Powder 2 and 5 gr. capsules and 2 and 5 gr. tablets.

Surgical Catgut Ligatures

Plain and chromic, regular (60 inch) emergency (20 inch) Iodized (60 inch).

Strong and sterile



An Incomparable Product

The Suprarenalin preparations are now available.

Suprarenalin Powder - - - 1 grain vials
Suprarenalin Solution, 1:1000 - 1 oz. bottles
Suprarenalin Ointment, 1:1000 - - tubes

Suprarenalin designates the astringent, hemostatic and pressor principle of the Suprarenal Gland as isolated by the Armour chemists.

Suprarenalin Solution is the incomparable preparation of the kind. It is water-white, stable and non-irritating and is entirely free from chemical preservatives.

Suprarenalin ointment is bland and its effects very lasting.

ARMOUR AND COMPANY

CHICAGO

SAVE MONEY ON YOUR **X-RAY** SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

NOTICE

Rates at Hotel Coronado
during Medical Society
(State of California) Con-
vention appear on page L.

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

Fine Grades in Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary San Francisco, Cal.

NOTICE

Physician's widow disposing of sur-
gical instruments and microscope. For
inspection at

TRAVERS SURGICAL CO.
372 Sutter St., San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS COMMERCIAL
526 California Street, San Francisco, Cal.
Member of the Federal Reserve System. Member of the Associated Savings Banks of San Francisco
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

DECEMBER 31, 1920

| | | | |
|----------------|------------------------------|-------------------------------|--------------|
| Assets | \$69,878,147.01 | Capital Actually Paid Up..... | 1,000,000.00 |
| Deposits | 66,333,147.01 | Reserve and Contingent Funds | 2,540,000.00 |
| | Employees' Pension Fund..... | | \$343,536.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch

GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John. A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

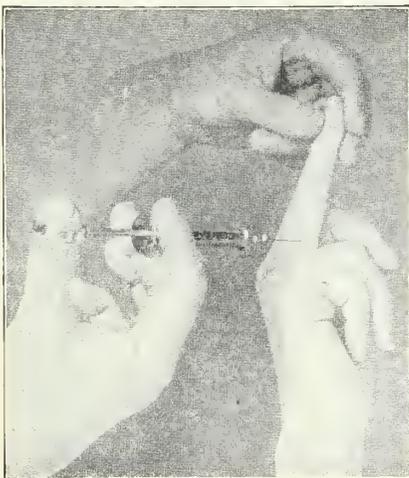
Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

“Doing It Deftly and Safely”



PROCAINE for deep or surface anesthesia is safer and less irritant than cocaine and only about one-seventh as toxic. It causes no visual disturbance. PROCAINE (Abbott) may be had without the bother of filling out a narcotic blank. In handy soluble tablets, one of which in 1 mil (16 minims) of distilled water makes a 2% solution. Other solutions in proportion.

Net Price

100 tablets, A-P (Abbott's Procaïne) No. 1, gr. $\frac{1}{8}$ with adrenalin gr. 1/2500.

\$1.00

PROCAINE (Abbott) is also available in ready-prepared ampule solutions, if preferred.

Send for Free Booklet on “Local Anesthesia.” If you wish your dealer stocked with PROCAINE (Abbott) please advise us giving name and address.

THE ABBOTT LABORATORIES

Manufacturers of Barbitol, Procaïne, Chlorazene, Cinchophen, Dichloramine-T and other Council-Passed Specialties

Home Office and Laboratories, Dept. 11, Chicago, Ill.

NEW YORK

TORONTO

SEATTLE

SAN FRANCISCO

BOMBAY

The Storm Binder and Abdominal Supporter



*
ORTHOPEDIC APPLIANCES
 *
FRANK F. WEDEKIND
 2004-06 Sutter Street
 San Francisco

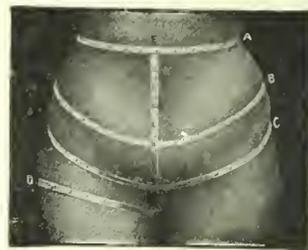


Diagram for Measuring



D. HIRSCH H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of
 ARTIFICIAL LIMBS
 and
 ORTHOPEDIC APPLIANCES
 Crutches Sold or Rented
 Arch-Support Fitting
 a Specialty Bonded Manufacturers for
 U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES
 Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street
 Between Post and Sutter Streets
 SAN FRANCISCO

WANTED

Catholic doctor, recent graduate, as assistant in Central California town. Salary small to begin. Fine opportunity if you make good. Worth investigating. Address: Dr. M. L., care State Journal of Medicine.



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
 Tel. Franklin 456
 SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400
 SAN FRANCISCO

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE BARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB

REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

DR. WM. B. WRIGHT, JR.

Practice limited to Nose and Throat.
Formerly associated with Dr. Justus
Matthews of Minneapolis.

1123 Chapman Bldg., Los Angeles.

Telephone 65943

"We Get the Coin" "We Pay"



Special attention to doctor's accounts.
Personal calls throughout Southern California.
No Collection—No Charge.
We pay monthly.
Our rate one-half of the amount collected.

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.
426 So. Spring Street, Los Angeles, California

KENILWORTH SANITARIUM

KENILWORTH, ILL.
Established 1905
C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of
nervous and mental diseases. Approved diag-
nostic and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with forced ventilation. Elegant
appointments. Bath rooms en suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff
Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief of Staff

Consultation by appointment
All correspondence should be addressed to
KENILWORTH SANITARIUM
Kenilworth Illinois



SOUTHERN SIERRAS SANATORIUM

BANNING, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, OWNER AND MANAGER

TUBERCULAR SPECIALIST IN ATTENDANCE

DOCTORS' SMOCKS,

OPERATING GOWNS

and

COATS

DENTISTS' JACKETS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed

SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.

A. S. W. GRUNDY

SAN FRANCISCO

970 Sutter Street, Phone Franklin 8338

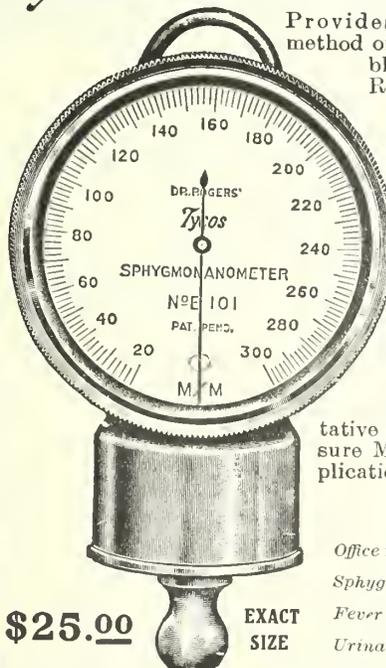
944 Hyde Street, Phone Franklin 3946

OAKLAND

2213-2215 Broadway, Tel. Oakland 1902

Next Key Route Inn

Tycos SPHYGMOMANOMETER



Provides a simple method of determining blood pressure. Recognized as embodying every essential possible in a portable manometer. Made of non-corrosive materials. No friction. Stationary dial. Self verifying.

Tycos authoritative Blood Pressure Manual on application.

Office Type

Sphygmomanometer

Fever Thermometers

Urinary Glassware

\$25.00

EXACT
SIZE

Taylor Instrument Companies, Rochester, N. Y.

#1-M



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALIWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK
X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY

Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco

Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

Dickson-Bull
Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement

Surgeons Assured
Co-operative Service

2216 Telegraph Avenue

Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.

Tel. Oakland 8438



Cystoscopy Urethroscopy
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

You May Now Prescribe

For spastic-pains of the abdominal vis-
cera, for spastic respiratory and spastic
circulatory derangements, including
angina-spasms and arterial hypertension.

BENZYL BENZOATE

SAFE, NON-NARCOTIC, ANTISPASMODIC

In form of

Globules—Soluble Gelatin—5 Minims Each

Convenient to carry and easily ingested
or

Solution—Miscible—20 Per Cent

Quite palatable when diluted and sweetened

SPECIFY "H. W. & D."

Specimens of products and literature upon request

HYNSON, WESTCOTT & DUNNING
BALTIMORE

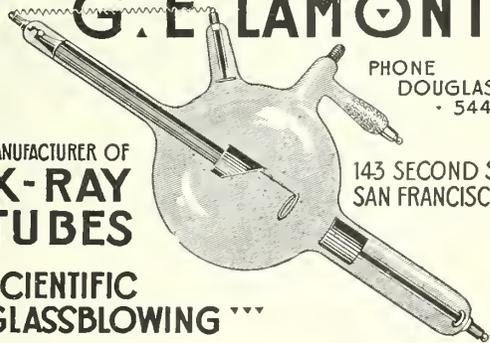
G. E. LAMONT

PHONE
DOUGLAS
5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING**



**We Strive to Please Both
Physician and Patient**

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 DEPENDABLE STORES 14
SAN FRANCISCO



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

PHONE MARKET 8048

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.
The advice of the hospital staff is always at the
disposal of the patients' physicians.

A Pacific Coast Product With a National Reputation

Articles of the "Albatross Line" recommended for the office, small hospitals and industrial plants. The complete line—over 100 styles and kinds—shown in our catalog. Let us send it to you.

Albatross Metal Furniture Company
PORTLAND, OREGON

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, Canal Zone and Philippine Islands.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of the previous calendar year, also 10 cents; two years old, 20 cents; three years old, 25 cents; in other words, 5 cents additional is charged for each year preceding the last calendar year.

REMITTANCES should be made by check, draft, registered letter, money or express order. Currency should not be sent unless the letter is registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "Medical Society, State of California."

VOLUMES begin with the first of January. Subscriptions may commence at any time.

CHANGE OF ADDRESS notice should give both the old and the new address, and state whether the change is permanent or temporary. The change notice must reach us ten days in advance of the date of the issue which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he presents a letter showing authority or making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must nave their contributions typewritten—double-spaced and with ample margins—before submitting them. The expense is small to the author—the satisfaction is great to the editor and printer. We cannot promise to return unused manuscript, but try to do so in every instance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if necessary to elucidate the text, will be furnished by The Journal when satisfactory photographs or drawings are supplied by the author. Each illustration, table, etc., should bear the author's name on the back. Photographs should be clear and distinct; drawings should be made in black ink on white paper. While we cannot guarantee to return used photographs and drawings, we use our best endeavors to do so after the article is published, if the word "return" is written on the back of each.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

USEFUL IN NERVOUS DISORDERS

"Horlick's"

The Original Malted Milk

1. Served hot, as a sedative in insomnia.
2. As a vehicle for the administration of hypnotics.
3. In the dietetic treatment of neurasthenia.
4. For drug addicts, during the state of withdrawal.
5. In the digestive and nervous weakness of invalids, convalescents and the aged.

Avoid Imitations

For printed matter and samples address

HORLICK'S - Racine, Wis.



ARSPHENAMINE SUPPLY DEPOT

M. L. ADLER & CO.

Dealers in PHYSICIANS' and HOSPITAL SUPPLIES

703-704 New Pantages Theatre Bldg.
Seventh and Hill Sts.

Phones: 63339
67067

Los Angeles, Cal

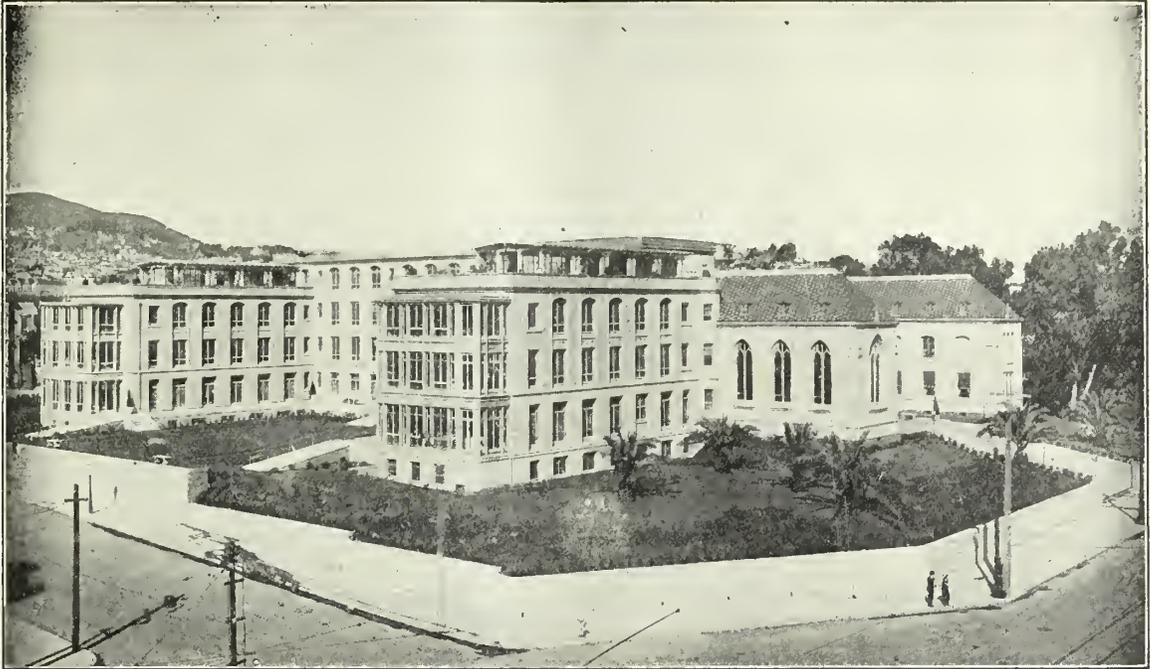
PRICES TO PHYSICIANS

| SALVARSAN-METZ | | NEO-SALVARSAN-METZ | |
|----------------|-----------------|--------------------|-----------------|
| 0.1 Gm..... | \$.60 per Amp. | 0.15 Gm..... | \$.75 per Amp. |
| 0.2 " | .75 " " | 0.3 " | 1.00 " " |
| 0.3 " | .85 " " | 0.45 " | 1.25 " " |
| 0.4 " | 1.00 " " | 0.6 " | 1.50 " " |
| 0.5 " | 1.25 " " | 0.75 " | 1.75 " " |
| 0.6 " | 1.50 " " | 0.9 " | 2.00 " " |
| 1.0 " | 2.00 " " | 1.5 " | 3.00 " " |

10% discount on orders of 10. Special discounts on orders over ten. May be assorted.

ALL OTHER BRANDS AND SIZES ON HAND

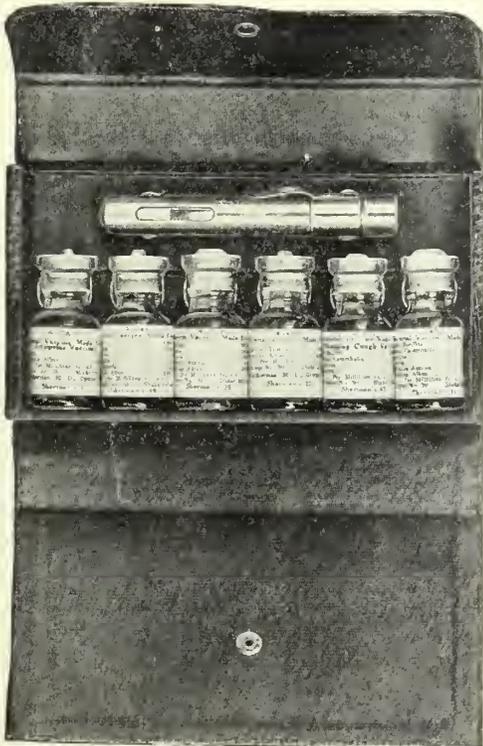


ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. **Associate Staff**—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. **Consulting Staff**—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. **Pathologist**—E. V. Knapp, M. D. **Roentgenologist**—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,
W. H. HILL, M. D., Resident Physician.

**SHERMAN'S
VACCINE CASE**

The best immunizing response in Pneumonia is obtained during the first twenty-four hours after the initial chill. Every hour being vitally important, successful immunologists make inoculations in Respiratory Infections at their first call.

Be prepared; carry an assortment of Sherman's Polyvalent Vaccines and self-sterilizing syringe in this convenient case.

Your dealer will be pleased to supply you.

G. H. Sherman, M. D.

DETROIT - - MICHIGAN

Largest Producer of Stock and Autogenous Vaccines



Treat Your Rabies Patients at Home
WITH
RABIES VIRUS, LILLY

A Safe Treatment for Administration by the Patient's Physician

ADVANTAGES

1. A high degree of immunity. 2. Harmless (treatment free from complications, lessened reaction.) 3. Uniformity.
4. The patient's time and money are economized. 5. It is available for prompt institution of treatment at home by the family physician. 6. Standardization.

Rabies Virus, Lilly, is supplied in syringe containers emulsified and ready for instant use. Your druggist can secure the first three doses from the nearest Lilly depot; the remaining eleven doses will be supplied from Indianapolis, one daily, until the complete treatment of fourteen doses has been administered.

Write for a Booklet on Rabies and Its Treatment

ELI LILLY & COMPANY, Indianapolis, U. S. A.
NEW YORK CHICAGO ST. LOUIS KANSAS CITY NEW ORLEANS



Infant Feeding *Diet Materials*

THE DOCTOR'S METHOD OF FEEDING INFANTS

MEAD'S DEXTRI-MALTOSE is Dextrins and Maltose just as the name implies. Moreover, it is Dextrins and Maltose WITHOUT directions printed on the package. "D.-M" is furnished with Potassium Bicarbonate, or with Sodium Chloride. Also furnished plain in order that the doctor may prescribe any other food salts desired.

THE USE OF "D-M" MEANS INDIVIDUAL INFANT FEEDING

THE MEAD JOHNSON POLICY
Mead's Dextri-Maltose is advertised only to the medical profession. No feeding directions accompany trade packages. Information regarding its use reaches the mother only by written instructions from her doctor on his own private prescription blank.

16 oz. in every package—more for less—NOT less for more
Full literature and samples on request

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.



Atophan

Rheumatism—Then and Now

Formerly the complaint "Rheumatism" promptly brought forth a prescription for Salicylates, simple or complex.

Relief, or even cure, was obtained, though sometimes only after fairly prolonged administration.

The constipating, heart-depressant, kidney-irritant and cumulative toxic by-effects were either not fully realized, or passed up as "necessary evils."

Nowadays, the physician writes "ATOPHAN," happy to be able to do so much better for his patient.

Quicker, cleaner-cut results, markedly devoid of those "it-can't-be-helped" drawbacks.

U. S. A. Made and Available Everywhere

Complete Information and Ample Trial Quantity from

SCHERING & GLATZ, Inc., 150 Maiden Lane, NEW YORK

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

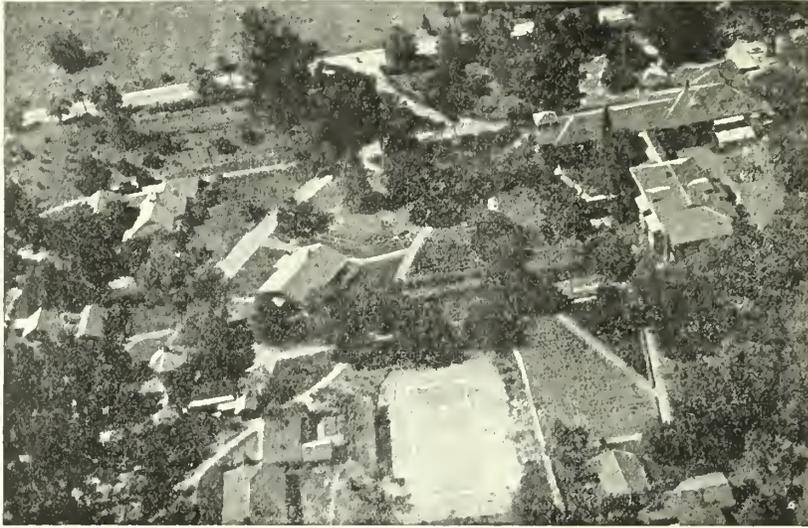
A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

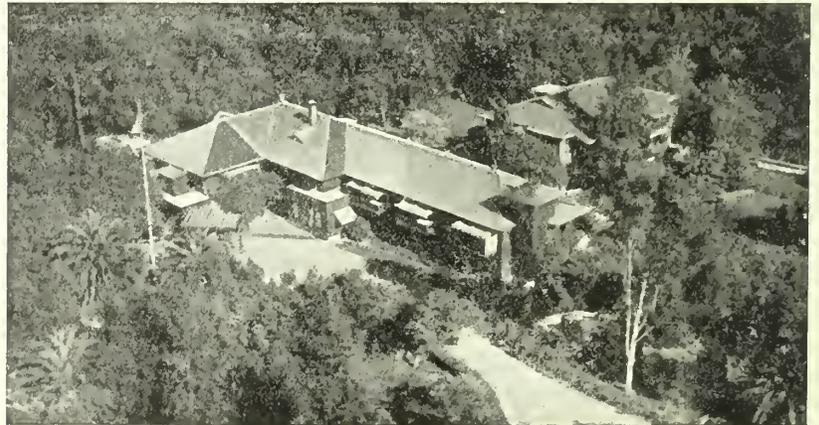
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.
Cuisine Excellent.
Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.
Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.
Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

FOR TUBERCULOSIS

BANNING

CALIFORNIA

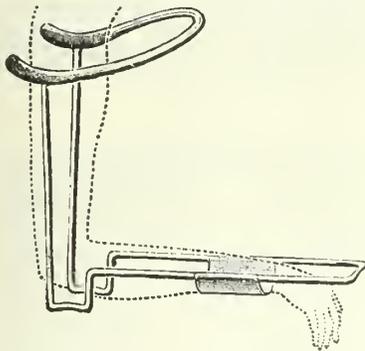


DR. J. C. KING'S SANATORIUM

Many years of successful results.
 Altitude: 2500 feet. Dry climate.
 Trained nurses. Excellent food.
 Send for Circular.

ALLAN L. BRAMKAMP, A. B., M. D.

JOHN C. KING, M. D.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL

X-RAY LABORATORY

Thomson Building
 Oakland

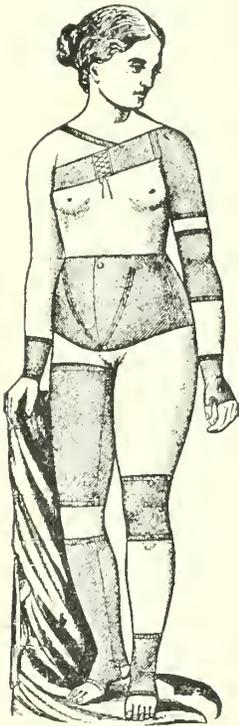
Widemann's Evaporated Goat Milk



Baby
 Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
 San Francisco, Cal.



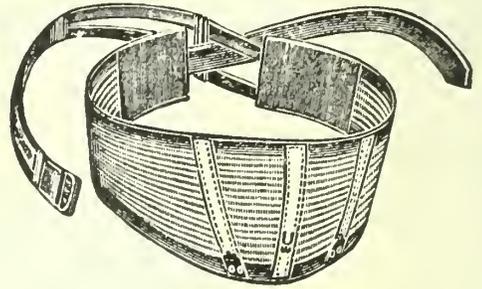
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS

TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.
Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DOCTORS' COLLECTIONS

Free Memberships.

Collections on Commission.
Protection Against Delinquents.
Engraved Membership Certificate.
Retention of Patronage.

Thousands are already members. Why not you? Universal endorsement. References, National Bank of Commerce, Bradstreets, or publishers of this Journal.

SEND FOR LIST BLANKS.

Physicians and Surgeons Adjusting Assn.
Railway Exchange Bldg., Desk 1
Kansas City, Mo.

(Publishers Adjusting Association, Inc., Owners Est. 1902)

Location open in Central California. Population 2600, Mining district; nothing to sell.

Address:

Dr. C. M., Care California State
Journal of Medicine
930 Butler Bldg.

Home School for Nervous and Backward Children

Most approved methods of physical and mental development through motor activities and sense training. Outdoor study and play the entire year.

Beautiful estate devoted to the welfare and happiness of the children. Ideal home life.

THE CEDARS

ROSS, MARIN CO., CAL.

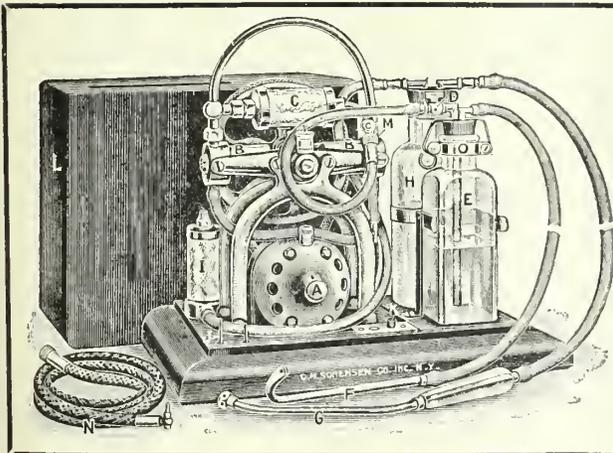
C. C. Myers, Principal.

Cancer Odors

—and the malodorous dejecta of typhoid and other intestinal cases come under the same category—

can be made materially less prejudicial to the nurse's health if you permit her to insert a tuft of "Nazeptic Wool" in each nostril before she dresses the cancer or empties the used vessel. "Nazeptic Wool" is absorbent cotton medicated with phenol, eucalyptol, methyl-salicylate and menthol; such odors, when filtered through the "Wool" during inhalation, are materially antisepticized. Samples are available.

SHARP & DOHME *of Baltimore*



The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

For particulars write

Bischoff's Surgical House

Dealers in Physicians and Hospital Supplies

1702-6 Telegraph Ave.

Oakland, Cal.

LEITZ MICROSCOPES

WILLIAM O. HAMMER

San Francisco, Cal., 35 Montgomery
Phone Kearny 708

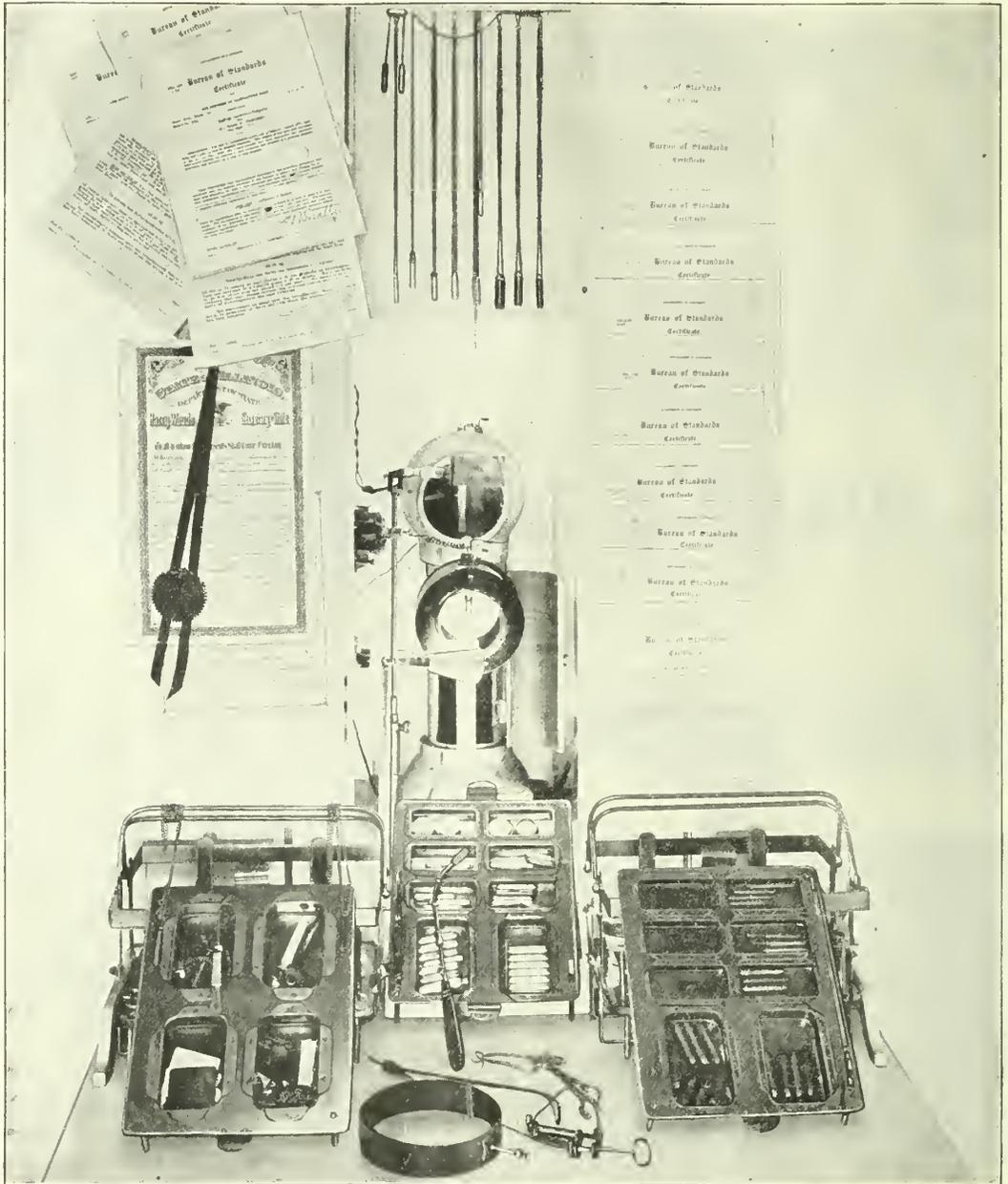
FOR SALE

| | |
|--|---------|
| B. & L. Metallurgical Microscope..... | \$30.00 |
| B. & L. Physician's Microtome, like new.... | 50.00 |
| B. & L. Compound Microscope, like new, list \$240.00, now..... | 160.00 |
| Leitz Microscope | 70.00 |
| Instruments repaired, adjusted and exchanged. | |

Skin Lesions

RADIUM

Cancer



Incorporation Certificate of the
Chicago Radium Institute
1912

Apparatus for
Quantitative Measurement
of Radium
Applicators and Filters

Standardization Certificates
Bureau of Standards
Washington, D. C.

FRANK H. BLACKMARR, M. D.

Telephones Majestic 7044 and 7045

1513-1517 Marshall Field Annex Building, 25 East Washington Street, Chicago, Illinois



Winning the Patient's Confidence

FEW patients have any real knowledge of medicine or surgery. Yet they form their own opinion of a practitioner's ability. How? By his manner, his skill, above all by the *character of his office and its equipment.*

The greater the physician's obvious technical resources, the greater must be the confidence that his patients have in him.

A modern office equipment convinces the patient that modern methods in diagnosing and treating disease are employed. It is not only a technical aid in practice. *It inspires confidence.*

No single piece of apparatus is of such general utility as a good X-ray equipment, and none that testifies more eloquently to the physician's resourcefulness. All practitioners recognize the diagnostic and therapeutic importance of the X-ray. Because he thinks that the taking of a radiograph requires special engineering knowledge, many a physician hesitates to install an X-ray equipment and thereby fails to satisfy his professional desire for thoroughness. The truth is that *the actual manipulation of the X-ray apparatus is as easily learned as that of the mechanical and electrical appliances with which most practitioners are familiar.*

The Victor X-Ray Corporation places its facilities and its long experience at the disposal of all practitioners. It will gladly send a technically informed representative to a physician who appreciates at its full worth the aid that the X-ray can lend him in his practice, but who wants engineering guidance. No obligation is incurred.

The physician who installs a Victor machine is entitled to receive Victor Service. This means that if his apparatus needs attention he does not have to communicate with the factory. The nearest Victor Service Station sends an expert, a man able to locate the source of trouble in a few moments. Victor Service is so organized that Victor apparatus need not be idle for many hours or days.

It is the purpose of Victor Service not only to help the physician in such emergencies, but also to give him mechanical and electrical guidance if he asks it, so that he may know how to secure the best results with his apparatus.

As part of this Service policy the Victor X-Ray Corporation publishes a periodical called "Service Suggestions" in which X-ray progress is recorded primarily for the benefit of Victor clients. Others may find "Service Suggestions" of value. It will be sent to them on request.

Victor X-Ray Corporation

General Offices and Factory

Jackson Blvd. at Robey St.

Chicago

Territorial Sales Distributors

San Francisco, Calif., Bush Electric Corporation, 334 Sutter Street
Los Angeles, Calif., Victor Electric Los Angeles, 930 Hill Street

HAY FEVER MEMORANDA

Early Spring Type. Patients whose hay fever develops in late March, April or beginning of May should be tested with pollens of early flowering trees.

Late Spring Type. Patients whose hay fever develops in the latter part of May, or during June, should be tested with the pollens of the chief grasses, such as orchard grass, timothy, red top—and certain early flowering weeds.

ARLCO-POLLEN EXTRACTS

For *Cutaneous Tests* and *Treatment* cover early and late spring, *also* summer and autumn.

Literature and List of Pollens on Request.

THE ARLINGTON CHEMICAL CO.

YONKERS,
N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.
PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg NEW YORK 7th Av. 442 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

108 N. State Street CHICAGO
10 Union Square NEW YORK

LONDON
PARIS

AMERICAN

FORCEPS

Allis—Carmalt

Kelly—Oschner

BAUMANOMETER Sphygmomano Meter

BUCK'S Dental Films

CASTLE Office Sterilizers

ETHER Vapor and Vacuum Apparatus

LABORATORY ESSENTIALS

METZ, Arsphenamine and Neo

SHERMAN Bacterine Vaccine

Everything today

Pacific Surgical Mfg. Co.

320 W. Sixth Street Main 2959
LOS ANGELES

The Modern Dressing Material

Cellosilk

Trade-mark Copyright 1920

Marshalltown Laboratories

ADVANTAGES OVER OTHER MATERIALS

- Saves you time in dressing—Soft, pliable and easy to handle.
- Aids quick healing—NON-ADHERENT; no sticking or tearing when removed.
- Eliminates pain—Makes changing of dressing easy.
- Safe and Sure results—TRANSPARENT; progress watched through dressing.

Prepared in Perforated and Impervious Forms

Impervious Cellosilk: More satisfactory and less expensive than Oiled Silk and other materials previously used. Excels for wet dressing coverings, impervious dressings of all kinds and constructing Non-Adherent drains. "Standard" (single weight) \$1.25. "Standard Heavy" (double weight) \$1.75

Perforated Cellosilk: A professional improvement for dressing wounds requiring air and drainage. Excels for dressing skin grafts, ulcers and all granulating surfaces. "Standard Perforated" \$2.00.

Have Your Dealer

Send you a roll of both Perforated and Impervious Cellosilk which you will find constant use for. Rolls 9 in. x 12 ft. at above prices.

MARSHALLTOWN LABORATORIES

MARSHALLTOWN, IOWA

BANKSIA PLACE SANITARIUM



Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Superintendent, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

The Laboratories of
REED & CARNRICK
Are Devoted to Making

Organic Physiological Products

Full particulars concerning these and answers to all queries will be gladly given. Please remember that in writing to **REED & CARNRICK** you will be answered by medical men thoroughly trained in hospital work and practice and not by theoretic laboratory workers.

REED & CARNRICK
42-44-46 Germania Avenue
Jersey City, N. J.

Experienced Graduate Nurse

desires position in doctor's office; can also act as secretary. Best of references.

Miss B. B., R. N.,
Care California State Journal of Medicine.

WANTED

Medical man, preferably married, as assistant, later to take over busy practice in small industrial town in San Joaquin Valley.

Dr. X, care State Medical Journal.

*Announcing
A New Location*

PERCY J. MEYER & CO.

Largest Pacific Coast Dealers in

**Surgical Instruments
Hospital Equipment
Orthopedic Appliances**

Formerly

359 Sutter Street

Now Located

379 Geary Street

SAN FRANCISCO
(Next to Stewart Hotel)
Telephone Sutter 3425



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M.D.
Medical Director

Thromboplastin, Squibb

is made in accordance with the direction of Dr. Alfred F. Hess, of the Laboratory of the New York City Department of Health. It contains kephalin, one of the active principles upon which the coagulating power of Thromboplastin depends. This kephalin is the lipoid substance described by Hirschfelder. It is rendered aseptic by the addition of 0.3 per cent tricresol, and standardized for haemostatic power. *Thromboplastin, Squibb* is supplied in 20 cc. vials. Two preparations are available, one for local application and one for hypodermic use. Orders should specify clearly which preparation is desired. Price per vial, \$1.00. A date well within the limit of potency is stamped on each vial. It should be kept cool.

Leucocyte Extract, Squibb

Prepared from healthy leucocytes according to Hiss. Indicated in general acute systemic infections where bacteriological diagnosis is uncertain. Also used in conjunction with the specific serums and vaccines in the treatment of Erysipelas, Meningitis, Lobar Pneumonia, Septicemia, Pyemia and Furunculosis.

In 10 cc. vials at \$2.00.

Literature Upon Request

TELEGRAPH OR MAIL YOUR ORDERS TO

908 Butler Building **FRED I. LACKENBACH** San Francisco, Cal.

Telephone Sutter 3122 (Private Exchange)

HOTEL DEL CORONADO

CORONADO BEACH

CALIFORNIA

Bay and Surf Bathing, Boating, Fishing
Aquaplaning, Tennis, Golf, Motoring and
All Other Out of Door Amusements

DANCING, BILLIARDS, BOWLING

Hotel Del Coronado is conducted on the American Plan and special rates for delegates to the State Medical Convention May 10, 11 and 12 and their families appear below.

AMERICAN PLAN

SINGLE ROOMS WITH BATH \$7.00 PER DAY
SINGLE ROOMS WITHOUT BATH \$6.00 PER DAY
DOUBLE ROOMS WITH BATH \$12.00 PER DAY
DOUBLE ROOMS WITHOUT BATH \$11.00 PER DAY
TWO CONNECTING ROOMS WITH BATH \$6.50 EACH PERSON

Palm Cottages will also be available at Coronado Tent City during the Convention at \$6.00 per day for two persons. European Plan.

W. A. TURQUAND, MANAGER

CALCREOSE

CALCREOSE IS A MIXTURE CONTAINING IN LOOSE CHEMICAL COMBINATION APPROXIMATELY EQUAL PARTS OF CREOSOTE AND LIME.

CALCREOSE HAS ALL OF THE PHARMACOLOGIC ACTIVITY OF CREOSOTE, BUT IS FREE FROM UNTOWARD EFFECTS ON THE GASTRO-INTESTINAL TRACT

CALCREOSE MAY BE TAKEN IN COMPARATIVELY LARGE DOSES —IN TABLET FORM OR IN SOLUTION.

LITERATURE AND SAMPLES ON REQUEST

THE MALTBIE CHEMICAL COMPANY

Newark, New Jersey

THE Burnett Sanitarium Company of Fresno, California, desires to announce that it has purchased a complete radium equipment and more than 500 milligrams of radium, and are prepared to treat all kinds of cases requiring radium treatment. Treatment will be given under the personal direction of Dr. G. L. Carr.

Emanation tubes will be sent on request of physicians at the rate of \$1.00 per millicurie. A description of the case should accompany the application for emanation tubes.

The medical profession is cordially invited to send their patients to the Burnett, resting assured that not only will their patients receive careful attention, but the physicians themselves will be treated in an ethical manner.

D. H. TROWBRIDGE, M. D.,
General Manager

Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

- X-Ray and Electro-Medical Apparatus
- X-Ray and High Frequency Coils and Machines
- Interrupterless X-Ray Transformers (Three Sizes)
- Coolidge Tube Transformers and Controls
- Electric Bakers (Limb and Body)
- Ozone Generators—Single, Double and Quadruple
- Electric Light Bath Cabinets with Thermo-Vacuum Space
- Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for price lists and descriptive literature

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiapella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | G. M. O'Malley, Crockett..... | C. T. Wetmore, Hercules..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Igllick, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | |
| Los Angeles County Medical Society..... | Walter Brem, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | Martin McAulay, Monterey..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | J. B. Rogers, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | W. C. Du Bois, Santa Ana..... | J. C. Crawford, Orange..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. L. Curtis, Redlands..... | E. J. Eytinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | H. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | J. R. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | J. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Bly, Red Bluff..... | |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lella J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.

Medicine and Finance

It is hardly necessary to address the members of the medical profession about the business of Reid Bros., Inc. In the twelve years we have been selling hospital supplies we have made our stamp known to doctors and nurses all over the world. The following summaries show an investment offer that has already induced many physicians to become stockholders in our company.

THE BUSINESS

Reid Bros. are the largest manufacturers of hospital supplies in America. Their business has grown in twelve years from a few hundred to a million dollars.

In addition to being the only concern of this kind on the Pacific Coast, Reid Bros. ship to hospitals and doctors throughout the United States and have traveling representatives visiting every country on the globe. In 1920 shipments were made to 83 foreign countries.

The strength of Reid Bros. is guaranteed by their position as central distributors for a world-wide net work of medical institutions. There are 20,000 names on the customers' ledger of Reid Bros.

We invite you to share in this business. Stock is \$100.00 a share par. For information address the Secretary.

REID BROS., INC.

91-99 Drumm St., San Francisco
BRANCHES

Seattle

Vancouver

San Francisco

Tokyo

THE INVESTMENT

Reid Bros. are offering a limited issue of 8 per cent cumulative preferred stock participating up to 12 per cent. Safety is assured by assets more than three times the par value of all outstanding preferred stock including this issue.

The earning power of this stock is rendered practically certain by the stability of the hospital supply industry. No other business is so free from market disturbances or other troubles—hospitals and doctors buy constantly.

Since the first stock was issued in 1919 the dividends have never been less than 8 per cent. Past records show 10 per cent and 12 per cent may be expected of the present issue.

Walters Surgical Company

"Service and Dependability"

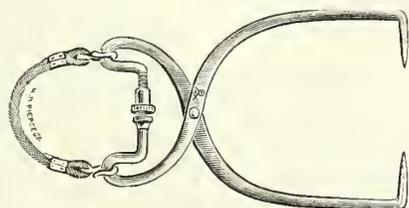
441 SUTTER STREET

Between Powell and Stockton Streets

Phone: Douglas 4017

High Grade Surgical Instruments and Hospital Supplies

Trusses Abdominal Supporters
Elastic Hosiery
Orthopedic Appliances
Laboratory Apparatus, Stains



Edmonton Fracture Extension Tongs

ANNOUNCEMENT

Physicians' Laboratory Technicians

A complete training in Laboratory technique is offered to a limited number of students in the following branches:

| | |
|--------|------------------------|
| BLOOD | Stomach contents |
| URINE | Cerebro-spinal fluid |
| SPUTUM | Wassermann reaction |
| FECES | Preparation of tissues |
| PUS | |

For Terms Apply to

BIOLOGICAL RESEARCH LABORATORY

H. O. WHITE, M. D.

Suite 334 Citizens National Bank Bldg.

Fifth and Spring Streets

Phone 62554

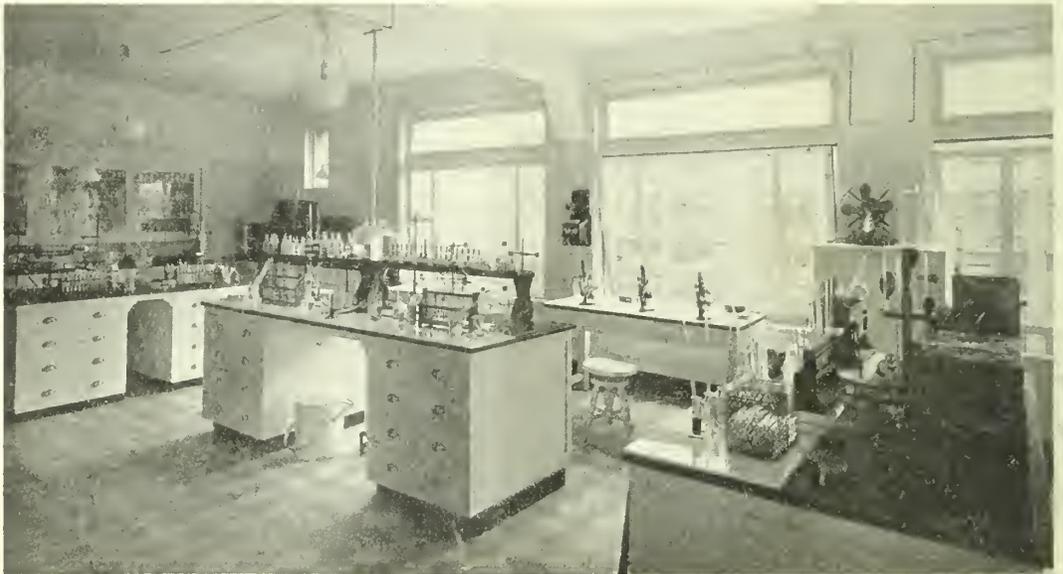
Los Angeles, Cal.

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT - ACCURATE - DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *This should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diacetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

MAR 24 1924

LIBRARY

California State Journal of Medicine

ISSUED MONTHLY OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

Vol. XIX, No. 5

MAY, 1921

\$1.00 a Year

CONTENTS

| | | | | | |
|--|-----|--|-----|--|-----|
| Editorials | 181 | Ante and Post-operative Treatment. By C. L. Lowman, M. D. | 195 | Trauma—Its Relation to Nervous Diseases of Undetermined Pathology. By Joseph Catton, M. D. | 202 |
| Original Articles | 187 | Ameba-like Leucocytes in Normal Blood and in Pus. By Herbert Gunn, M. D. | 198 | "An Essential in Reconstructive Surgery—'Atraumatic' Technique." By Sterling Bunnell, M. D. | 201 |
| Smallpox as a Quarantinable Disease. By W. J. Hanna, M. D. | 187 | Plaster Cast Immobilization of Fractures Prior to Open Operation for Reduction of Same. By N. T. Enloe, M. D. | 199 | Acute Brain Injuries. By Thos. O. Burger, M. D. | 207 |
| Poison Oak Dermatitis. By Drs. H. E. Alderson and H. J. Pruett | 188 | | | | |
| Results of the Wassermann Test of 1518 Men at San Quentin Prison, California. By Dr. G. W. Nagel. | 193 | | | | |

(Contents continued on page IX)

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

FRED I. LACKENBACH

BIOLOGIC DEPOT

BACTERIOLOGICAL · SEROLOGICAL
AND CHEMICAL WORK

Silver-Arsphenamine & Silver-Salvarsan

The disodium salt of silver-diamino-dihydroxy-arsenobenzene

SILVER-SALVARSAN is Salvarsan activated and biologically reinforced by combination with silver. Clinical experience shows that the curative value of 0.1 to 0.2 gram of SILVER-SALVARSAN corresponds to at least 0.3 to 0.6 gram respectively of Neosalvarsan.

Dosage. In adults, treatment should begin with an injection of 0.1 gram, gradually increasing the dose, at intervals of not less than four days, to 0.2 gram maximum in women and 0.25 gram in men.

Preparation of solution for intravenous Administration. After the ampule has been immersed in alcohol for 15 minutes, it is opened, and the contents sprinkled on the surface of 5 c.c. of cool, sterile, doubly distilled water. The powder dissolves rapidly and completely, yielding a dark brown solution. The water should be about 20°-22° C (68°-71.6° F). Sufficient cool 0.4% sterile saline solution should be added, so that the final solution will approximate 20 c.c. of liquid per decigram of the drug.

IMPORTANT. Use sterile freshly distilled water of not more than room temperature. Do not heat solution under any circumstances. DO NOT USE ALKALI. Filter the solution. Inject very slowly (3 minutes). Use only contents of intact ampules.

PRICES

| | | |
|----------------|-------|------------|
| 0.05 gram..... | \$ 75 | per ampule |
| 0.1 " | 1.00 | " " |
| 0.15 " | 1.25 | " " |
| 0.2 " | 1.50 | " " |
| 0.25 " | 1.75 | " " |
| 0.3 " | 2.00 | " " |

SCIENCE

INDUSTRY

908 BUTLER BUILDING SAN FRANCISCO

CABLE ADDRESS "SERVMS S.F." · TELEPHONE · SVTTER 3122

Luer Syringe Price List

| Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each | Description | Capacity | Syringe Price | Barrels Price Each | Plungers Price Each |
|-----------------|----------|---------------|--------------------|---------------------|-----------------|----------|---------------|--------------------|---------------------|
| Tuberculin..... | ¼ c.c. | \$2.25 | \$1.65 | \$1.40 | Serum..... | 5 c.c. | \$2.50 | \$1.90 | \$1.55 |
| Tuberculin..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Serum..... | 10 c.c. | 3.25 | 2.40 | 2.05 |
| Gray Oil..... | ½ c.c. | 2.25 | 1.65 | 1.40 | Arsphenamine.. | 20 c.c. | 4.50 | 3.25 | 2.75 |
| Tuberculin..... | 1 c.c. | 2.00 | 1.50 | 1.25 | Eccentric Tip.. | 20 c.c. | 5.00 | 3.75 | 2.75 |
| Subcutaneous... | 1½ c.c. | 1.25 | .90 | .80 | Arsphenamine.. | 25 c.c. | 5.00 | 3.75 | 3.25 |
| Precision..... | 1½ c.c. | 2.00 | 1.50 | 1.30 | Arsphenamine.. | 30 c.c. | 5.75 | 4.35 | 3.75 |
| Subcutaneous... | 2 c.c. | 1.40 | 1.00 | .80 | Eccentric Tip.. | 30 c.c. | 6.75 | 5.35 | 3.75 |
| Precision..... | 2 c.c. | 2.25 | 1.75 | 1.50 | Arsphenamine.. | 50 c.c. | 8.00 | 6.00 | 5.00 |
| Lachrymal..... | 3 c.c. | 3.50 | 2.65 | 2.25 | Eccentric Tip.. | 50 c.c. | 9.00 | 7.00 | 5.00 |
| Vaccine..... | 3 c.c. | 2.00 | 1.45 | 1.25 | Arsphenamine.. | 100 c.c. | 12.00 | 9.00 | 7.50 |
| Dental..... | 4 c.c. | 2.25 | 1.65 | 1.35 | Eccentric Tip.. | 100 c.c. | 13.00 | 10.00 | 7.50 |

Return both parts. New Syringe supplied at cost of broken part.

Fred I. Lackenbach, Biologic Depot

BACTERIOLOGICAL, SEROLOGICAL AND CHEMICAL WORK

9th FLOOR BUTLER BLDG.
CABLE "SERUMS" S. F.

SAN FRANCISCO

135 STOCKTON STREET
TEL. SUTTER 3122

FRED I. LACKENBACH BIOLOGIC DEPOT

Our Salvarsan Service

¶ We supply complete Sterilized Outfit consisting of graduated reservoir, tubing, observation tube, Luer glass connection and two suitable needles; also 250 c.c. flasks of freshly double-distilled water and sterile salt solution with 15% sodium hydroxide, exactly enough to neutralize the dose of Arsphenamine—all for \$6.00. The Salvarsan solution may be effected in the flask containing the double-distilled water.

¶ When you have your own outfit we can send the freshly double-distilled water, sterile salt solution and NaOH q. s. for \$1.00.

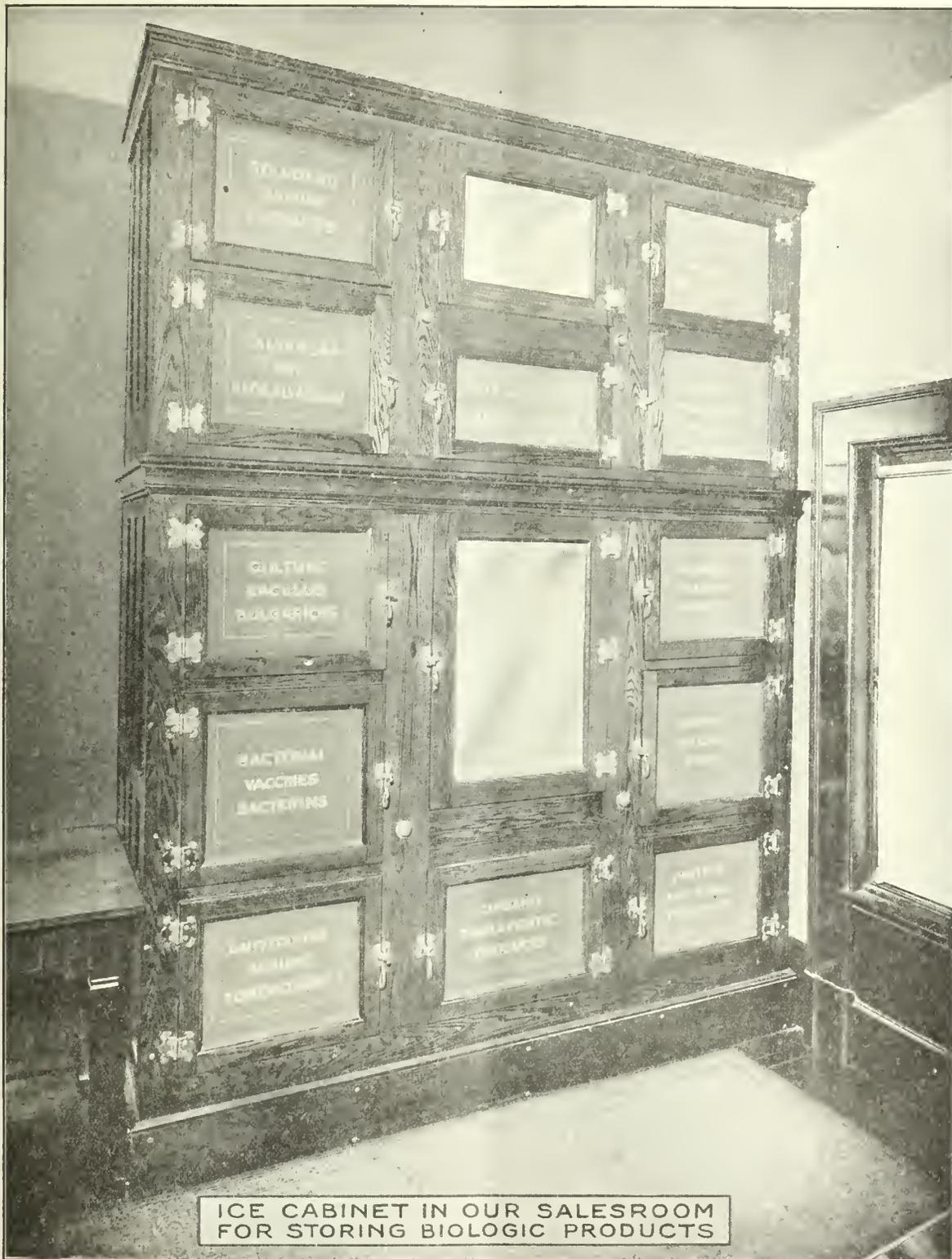
¶ For concentrated solutions we supply 20 c.c. Luer Syringe outfit with suitable needles, mixing flask containing freshly double-distilled water, all sterilized and ready for use—at \$6.00 complete.

¶ These outfits and solutions are the very best that money can buy. They are the culmination of years of practical experience and painstaking effort.

¶ In San Francisco we loan out gravity outfit at \$2.50 and 20 c.c. Luer outfit at \$1.50 complete.

¶ For immediate use we prepare the solution for \$1.00. The actual cost of preparation, however, is only 50c. since the flask of double-distilled water would be 50c.

Wassermann Test \$5.00



ICE CABINET IN OUR SALESROOM FOR STORING BIOLOGIC PRODUCTS

Biologic Products should be kept cool and dark at a temperature of 40°-50° F.

Fred I. Lackenbach, Biologic Depot
 SAN FRANCISCO
 MAINTAINS TWO OF THESE IMMENSE STORAGE REFRIGERATORS

Fred I. Lackenbach receives all supplies direct from the producer at frequent intervals. Druggists and Jobbers with limited output can not possibly maintain this efficient service.

Vaccine Virus to properly retain its efficacy should be kept on ice

Hay Fever Prophylaxis

THE UNIFORM STABILITY AND ANTIGENIC
ACTIVITY OF THE PRODUCT EMPLOYED
ARE OF UTMOST IMPORTANCE

Pollen Antigen *Lederle*

IS SO PREPARED THAT ITS ANTIGENIC
ACTIVITY IS ACCURATELY DETERMINED
AND SO PRESERVED THAT ITS STABILITY
IS ASSURED.

Lederle Antitoxin Laboratories

511 FIFTH AVENUE

COR. OF FORTY-THIRD ST.

NEW YORK CITY.

B & B Surgical Dressings

A Tube to Try

B & B Surgical Lubricant combines the qualities you desire. To prove this, a full-size tube is sent to surgeons on request.

It is perfectly sterile, for we sterilize after sealing.

It is mildly antiseptic without being irritating.

It is water-soluble, so one may use it freely on instruments, gloves and hands.

How it excels

It is an excellent lubricant without grease to soil. For hands, gloves and instruments it fulfills every requirement.

It softens the skin. It soothes burns and eruptions.

Plain water will remove every trace from hands or instruments.



It is non-corrosive.

It is sterile and aseptic, also mildly antiseptic.

It is non-staining. Plain water removes it from clothing and bedding.

A B & B standard

This article typifies the B & B standards. Each represents decades of effort to meet or exceed your requirements.

All our sterile dressings are sterilized after wrapping.

Each B & B product is the development of masters, in close co-operation with physicians and surgeons.

Send the coupon for one example of what these efforts have accomplished.

BAUER & BLACK Chicago New York Toronto

Makers of Sterile Surgical Dressings and Allied Products



Another 27-year Attainment

BAUER & BLACK

25th and Dearborn Sts., Chicago

I am not acquainted with B & B Surgical Lubricant. Please mail me, without charge, a full-size tube of B & B Surgical Lubricant to try.

.....

.....

.....

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.

SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."

THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.

FOURTH—That vaccination against all three infections does definitely protect against all three.

FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.

SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count

Write for Therapeutic Index Price List

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients).

Includes medical and nursing care, board and laundry.

Medical Director, Dr. Philip King Brown

APPLY OFFICE

AREQUIPA

401 Medical Bldg., San Francisco

Phone Franklin 844

DEPENDABLE PRESCRIPTION SERVICE

*Shumate's
Prescription Pharmacies!*

- | | |
|-------------------------------------|------------------------------------|
| 1 Cor. Sutter and Devisadero. | 8 Valencia and 16th Streets. |
| 2 Cor. Haight and Masonic Ave. | 9 California St. and 23rd Ave. |
| 3 Cor. Sacramento and Presidio Ave. | 10 Cor. Bush and Hyde Sts. |
| 4 84 Post Street East of Kearny. | 11 S. P. Bldg., Market Near Ferry. |
| 5 Cor. Carl and Cole Streets. | 12 Clement St. and 2nd Ave. |
| 6 Cor. Union and Steiner Streets. | 13 Polk and Washington Sts. |
| 7 Cor. Powell and Sutter Sts. | 14 Ninth Ave and Judah St. |

PHYSICIANS' PRESCRIPTIONS ACCURATELY DISPENSED

SAN FRANCISCO

OVALTINE

IN PHTHISIS

"Ovaltine" is a concentration of the nutritive principles of Winter Malted Barley, Milk and Eggs, and is, therefore, rich in easily digested and assimilated protein of great value in checking the morbid process and accelerating improvement of the general health.

Its protein spacers are adequate, in well adjusted ratio and in a form which taxes digestion to the minimum.

Its enzymes aid the digestion of other foods, its salts of iron, calcium and phosphorus promote normal mineral metabolism, and its accessory food factors favor full utilization of the nutritive principles by the tissues of the body.

"Ovaltine" permits of diet reinforcement without increase of bulk and enhances the digestibility of the food, valuable features where anorexia or dyspepsia are associated with the constitutional disturbance.

"Ovaltine" is obtainable in 8 oz., 17 oz., 5 lb. and 10 lb. tins from druggists

SAMPLES AND LITERATURE MAILED UPON SIGNED REQUEST

THE WANDER COMPANY

37 South Wabash Avenue, Chicago, Illinois

WORKS: VILLA PARK, ILLINOIS

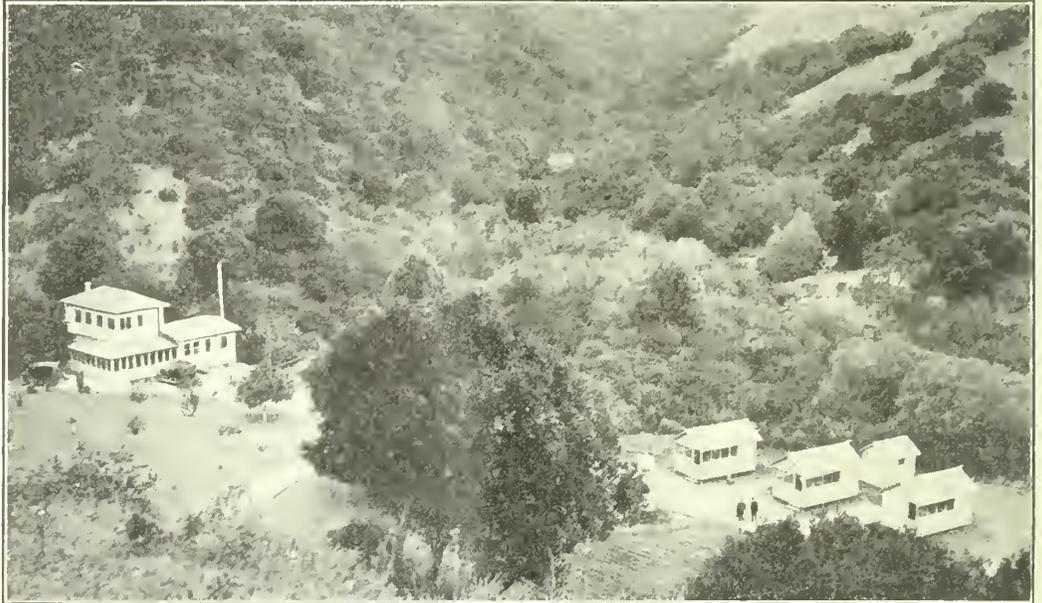
M8



CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
 of Hospital
 Atmosphere*
 □



SOME OF THE COTTAGES

□
*Rates
 Reasonable*
 □
Climate Ideal
 □

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
 FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN C. YATES, San Diego, President
 JOHN H. GRAVES, San Francisco, President-Elect
 WM. DUFFIELD, Los Angeles, 1st Vice-Pres. JOSEPH CATTON, San Francisco, 2d Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Secretary. ALFRED C. REED, San Francisco, Editor

COUNCILORS

First District—San Diego, Riverside, Orange, San Bernardino and Imperial Counties.

J. C. KING, Banning
 (Term expires 1921)

Second District—Los Angeles, Santa Barbara, Ventura and Kern Counties.

WM. H. KIGER, Los Angeles
 (Term expires 1922)

Third District—San Luis Obispo and Monterey Counties.

T. C. EDWARDS, Salinas
 (Term expires 1921)

Fourth District—Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.

GEORGE H. AIKEN, Fresno
 (Term expires 1921)

Fifth District—Santa Clara, San Mateo, San Benito and Santa Cruz Counties.

FRANK H. PATERSON,
 San Jose
 (Term expires 1923)

Sixth District—San Francisco County.

C. G. KENYON, San Francisco,
 Chairman
 (Term expires 1922)

Seventh District—Alameda, Contra Costa, San Joaquin and Calaveras Counties.

EDW. N. EWER, Oakland
 (Term expires 1923)

Eighth District—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.

JAMES H. PARKINSON,
 Sacramento
 (Term expires 1922)

Ninth District—Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); H. A. L. Ryfkogel, San Francisco (term expires 1921); C. Van Zwalenburg, Riverside (term expires 1923).

CALIFORNIA STATE JOURNAL OF MEDICINE

BUTLER BUILDING, SAN FRANCISCO

CONTENTS -- Continued

| | | | | | |
|--|-----|--|-----|---|-----|
| The Neurological Aspects of Visceroptosis. By Thos. G. Inman, M. D. | 209 | Los Angeles | 212 | Protologic Society | 215 |
| Book Reviews | 211 | Mendocino | 212 | Wisconsin Home-coming | 215 |
| Correspondence—The Airplane Waits | 212 | San Diego | 212 | Stanley P. Black, M. D., Obituary | 216 |
| County Societies: | | San Francisco | 213 | Notices: In Honor of Mme. Curie | 216 |
| Alameda | 212 | Placer | 214 | Tuberculosis Conference | 216 |
| Fresno | 212 | Sonoma | 211 | Special Attention | 216 |
| Contra Costa | 212 | Immunity | 214 | Correction | 216 |
| | | St. Joseph's Hospital, San Diego | 211 | Deaths | 216 |
| | | University California Hospital—Children's Department | 215 | | |



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
 Livermore, Calif.

HYDROPATHIC
 DEPARTMENT



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of HYDROTHERAPY,—coupled where indicated with NAUHEIM,—RADIO ACTIVE CLAY,—CALCIC CARBONATE,—MAGNESIA CARBONATE and SULPHATE BATHS,—RADIUM EMANATORIUM. Modern modifications of ZANDER APPARATUS, MASSAGE and MANIPULATIONS. ELECTRO-THERAPY, THERMO-PENETRATION, HELIO-THERAPY, PROCTOCLYSIS, CORRECTIVE GYMNASTICS and the application of tabulated PHYSICAL EFFICIENCY TESTS

We are well equipped with modern mechanical devices of scientifically proven efficiency for the RELIEF of SUFFERING. We maintain a most comprehensive SERVICE ORGANIZATION of TRAINED ATTENDANTS rendering PERSONALIZED SERVICE to every patient.

Our Institute is specially equipped for the relief of persons suffering from CHRONIC DISORDERS. We are also prepared to take care of POST-OPERATIVE CONVALESCENTS in need of RECONSTRUCTION and "CONDITIONING" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

DOCTOR:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern PHYSIO-THERAPY. Our twenty years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

Care—Courtesy—Privacy—Comfort.

Best references. Inspection invited.

G. H. Richardson, M. D.,
Medical Director.

N. A. Karpaty, B. Sc.,
Technical Superintendent.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES
133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

The Seymour Sanatorium

Banning, California

SITUATED in the broad San Gorgonio pass at an elevation of 2,400 feet, with inspiring views of Mt. Grayback and old San Jacinto on either hand, near, yet not upon the desert, the SEYMOUR SANATORIUM is exceptionally well located both from a climatic and environmental standpoint.

Here nature gives her best, and all modern means are used to assist and reinforce her efforts.

Careful study of each case, strict individualization in treatment and painstaking attention to detail, assure to the patient the attainment of the maximum benefit from the sanatorium sojourn.

The rates are very moderate

CHARLES E. ATKINSON, M. D., Medical Director



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Aetna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Aetna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Aetna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Aetna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Aetna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1921 - - - - \$204,839,890.53

If you are not acquainted with the Aetna Agent in your town write direct to
J. R. MOLONY, Manager, Western Branch
Department "C," 333 Pine Street, San Francisco, Calif.

AETNA LIFE INSURANCE COMPANY

AFFILIATED WITH

AETNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

ROBERT A. PEERS, Medical Director

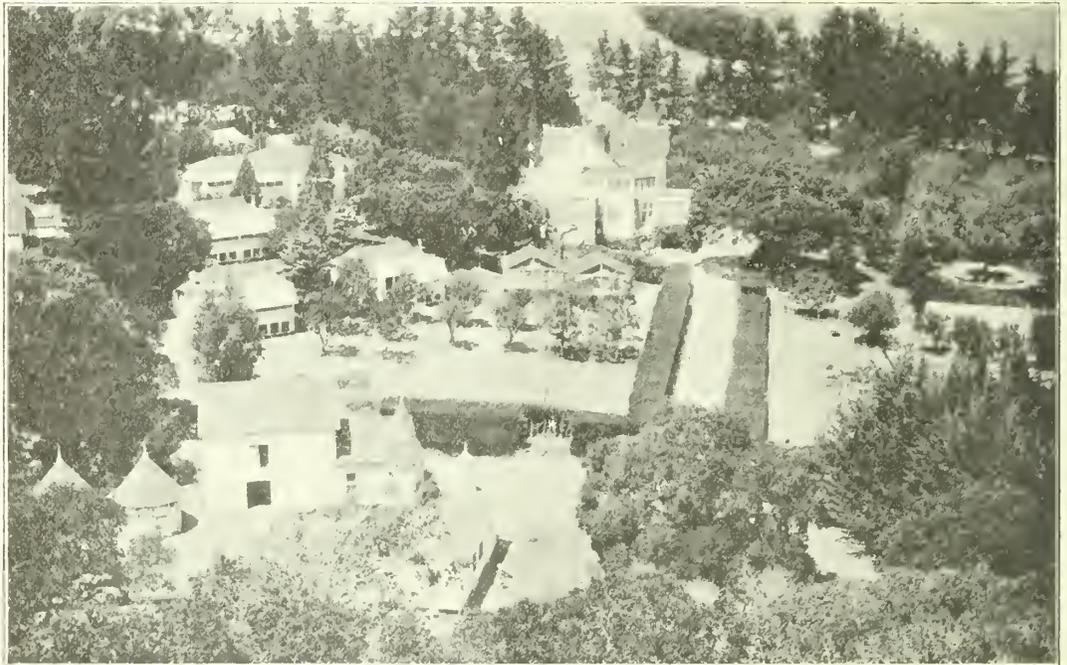
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont



USE THERMOWEVE

The latest and most practical Electrical heating blanket wherever uniform heat and better elimination is desired.

THE THERMOSTAT,

as shown in cut, is operated from the heat of the blanket. The compensating bar, being thermos metal, is sensitive to heat and cold.

It is infallible in its action.

It is adjustable to any temperature of heat desired.

You simply turn the indicator hand to the point on the dial corresponding to the maximum degree of heat required.

The circuit will then automatically open and close.

This keeps the blanket at an even temperature and under perfect control.

THE FLEXIBLE FILLER

Is made of heavy cotton warp, forming a one-piece fabric in which is woven a small doubly insulated cable of finely drawn copper wire.

There can be no cold spots.

It is strong and durable and will last indefinitely.

Correspondence Solicited

Will mail our interesting booklet upon request.

THE ELECTROTHERM CO., INC.

252-254 San Fernando Blvd.

Los Angeles, California

Phone Lincoln 1967

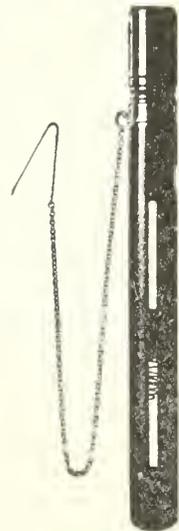
Always Sterile And Always At Hand

No. 4 Case complete with Thermometer.



Your fever thermometer is ready for instant use when you carry a **MORNEAU SANITARY THERMOMETER CASE**. The case is made of pure para gum rubber, fitted with a glass tube which holds the sterile solution. This glass tube contains a spiral spring which is adjustable to fit any thermometer. However, we strongly recommend the Morneau Thermometer because its markings are on the inside of the glass.

No. 5 Case with gold chain



- No. 4. Case only, with Pocket Clip..... \$2.50
- No. 5. Case only, with Gold Chain and Pin..... \$3.50
- Morneau One Minute Thermometer..... \$1.50
- Morneau Half-Minute Thermometer..... \$1.50

IF YOUR DEALER CANNOT SUPPLY YOU WRITE US.

At the left, the outside case.

Above, the glass tube with spring and the screw-lock cap.

Morneau
SANITARY
THERMOMETER CASE
COMPANY
APPLETON — WISCONSIN

Mellin's Food

is a means to aid the physician in modifying fresh cow's milk for infant feeding. It is composed of

Maltose, Dextrins, Proteins and Salts

and each one of these food elements has an important place in the adjustment of cow's milk to meet the requirements of the infant deprived of natural nourishment.

Mellin's Food Company,

Boston, Mass.

BRYON HOT SPRINGS CALIFORNIA



"THE HOME OF HEALTH"

Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

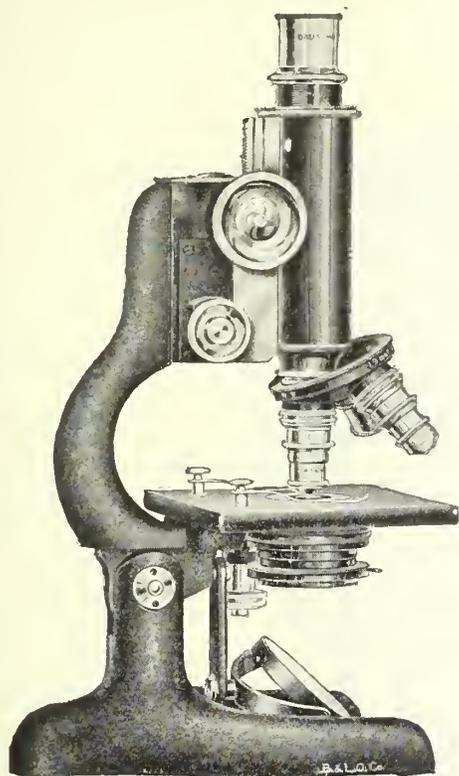
New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto.

Beautiful booklet on request.

BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.

San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surger), Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the direction of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLED AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U. S. A.

At All Druggists

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

Grageroff & Papazoni

Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.

Phone Pico 3778

Arsphenamine products should be

Rapidly Soluble
Practically Free from Toxicity
Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you communicate with

HAMETZ LABORATORIES, Inc
One-Twenty-Two Hudson Street, New York



A Standby

TWENTY years ago Parke, Davis & Co. introduced to the medical profession the active principle of the suprarenal gland—Adrenalin.

Little was known at that time concerning its physiologic action and therapeutic application. Today, after years of laboratory research and clinical experimentation, Adrenalin holds a foremost place among the standbys of the materia medica.

For the relief of the paroxysm of asthma, for the control of hemorrhage, and in the treatment of shock and collapse, Adrenalin is the first thought of the therapist. In organotherapy it has certain special indications, and as a synergist to local anesthetics it has done much toward bringing local anesthesia technic to its present high degree of perfection.

Parke, Davis & Company

DETROIT

Quartz Mercury Vapor Ultra Violet Light

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, Specula, Endoscopes, Proctoscopes, Laryngeal, Pharyngeal
Nasal, Urethral, Vaginal, Rectal, Uterine Lenses and Radiating
Tubes for the application of ultra-violet emanations.

WAGNER QUARTZ VAGINAL AND RECTAL SPECULA

The Pambrun Deep Penetration Filter System

TECHNIQUE — INSTRUCTION — INSTALLATION — MAINTENANCE

KROMAYER UNIT — Water Cooled

ALPINE SUN UNIT — Air Cooled

L. B. PAMBRUN



Phelan Building
SAN FRANCISCO
Phone SUTTER 2322

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

Phone Belmont 21

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephne Main 173

The Bausch & Lomb Optical Co. of California

154 Sutter Street, San Francisco

Will furnish the Balopticons to be used in illustrating the lectures and papers to be presented to the Convention of the State Medical Society at Coronado.

They will also have on exhibit and for Demonstration a complete display of Ophthalmic Test Instruments, including Corneal Microscope, Ives Visual Acuity Test Object, Vertex Trial Case, Spectrum Projector and the Stereo Campimeter used for finding and outlining Central Scotoma as devised by Dr. Lloyd of Brooklyn.

Also the latest Model Physicians' Microscope, Biological Colorimeter and Accessories.

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

If Your Diagnosis Indicates

Glandular Insufficiency

and you desire to be assured of high
quality, reliable endocrine products

Specify **WILSON'S**

Ovary

Thyroid

Pituitary

Suprarenal

Corpus Luteum

The quality of the product can be no better than the soundness of the raw material.

You realize the importance of having prescriptions filled with desiccated substance obtained from absolutely fresh, sound glands.

As a subsidiary of Wilson & Co., Packers, we have the *distinct* advantage of a direct supply of fresh glands.

Prepared from Abattoir to finished Package

BY



4213 South Western Boulevard, Chicago, Ill.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments.

DR. I. B. LINEBARGER, California Representative
Care of Wilson & Co., 1000 Lyons Street, Los Angeles

Visit our Booth No. 63, A. M. A., Boston, June 6-10.
Also visit our Booth No. 202, Public Health Exhibit,
Brooklyn, May 3-5.

*May we place you on our mailing list for
"The Autacoid and Suture," our house
journal devoted to Glandular Therapy?*

Write for Catalog

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

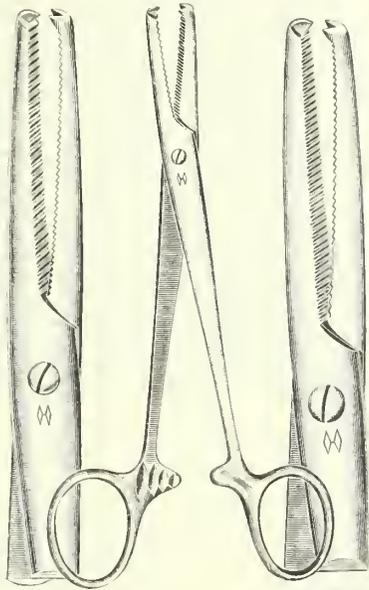
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





TRAVERS

Surgical Co.

SAN FRANCISCO, CAL.

Phone Sutter 4 6 5 1 3 7 2 Sutter Street

SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES

Our Stock is Complete

CYSTOSCOPES AND ACCESSORIES
MICROSCOPES AND SUPPLIES
SPLINTS OF ALL KINDS
LUER SYRINGES AND NEEDLES
PHYSICIAN'S OFFICE FURNITURE
ELECTRIC DIAGNOSTIC INSTRUMENTS

If It Is Surgical

We Have It

Pituitary Liquid

is the perfect preparation of Posterior Pituitary active principle. It, too, is without preservatives— $\frac{1}{2}$ c. c. obstetrical, 1 c. c. surgical.

Corpus Luteum (Armour)

is true substance and will give results. Powder 2 and 5 gr. capsules and 2 and 5 gr. tablets.

Surgical Catgut Ligatures

Plain and chromic, regular (60 inch) emergency (20 inch) iodized (60 inch).

Strong and sterile



An Incomparable Product

The Suprarenalin preparations are now available.

Suprarenalin Powder - - - 1 grain vials
Suprarenalin Solution, 1:1000 - 1 oz. bottles
Suprarenalin Ointment, 1:1000 - - tubes

Suprarenalin designates the astringent, hemostatic and pressor principle of the Suprarenal Gland as isolated by the Armour chemists.

Suprarenalin Solution is the incomparable preparation of the kind. It is water-white, stable and non-irritating and is entirely free from chemical preservatives.

Suprarenalin ointment is bland and its effects very lasting.

ARMOUR AND COMPANY

CHICAGO

Hillcrest Hospital

HEMET, CALIFORNIA

Reservations For Six Tubercular Patients

Now available in a high-class institution of exceptional equipment and surroundings. **HILLCREST**, originally the country estate of a millionaire, laid out and built on a lavish and luxurious scale, occupies a delightful 500-acre park in the Southern Sierra foothills overlooking lovely San Jacinto and Hemet Valleys—romantic and inspiring locale made famous by Helen Hunt Jackson in "Ramona."

An exclusive modernized retreat for scientific treatment, rest and recreation. Rate for private room and including all service except medical, X-Ray and laundry, is \$35 a week. Competent staff of medical specialists. Fullest co-operation with physicians sending patients.

Address:

ALBYN BUCHANAN,
Resident Superintendent Hemet, Cal.

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

X-RAY PLATES. Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.

X-RAY FILMS. Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-ograph metal backed. Fast or slow emulsion.

BARIUM SULPHATE. For stomach work. Finest grade. Low price.

COOLIDGE X-RAY TUBES. 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.

DEVELOPING TANKS. 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.

DENTAL FILM MOUNTS. Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.

DEVELOPER CHEMICALS. Metol, Hydroquinone, Hypo, Prepared Developers, etc.

INTENSIFYING SCREENS. Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.

LEADED GLOVES AND APRONS. (New type glove, lower priced.)

FILING ENVELOPES with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

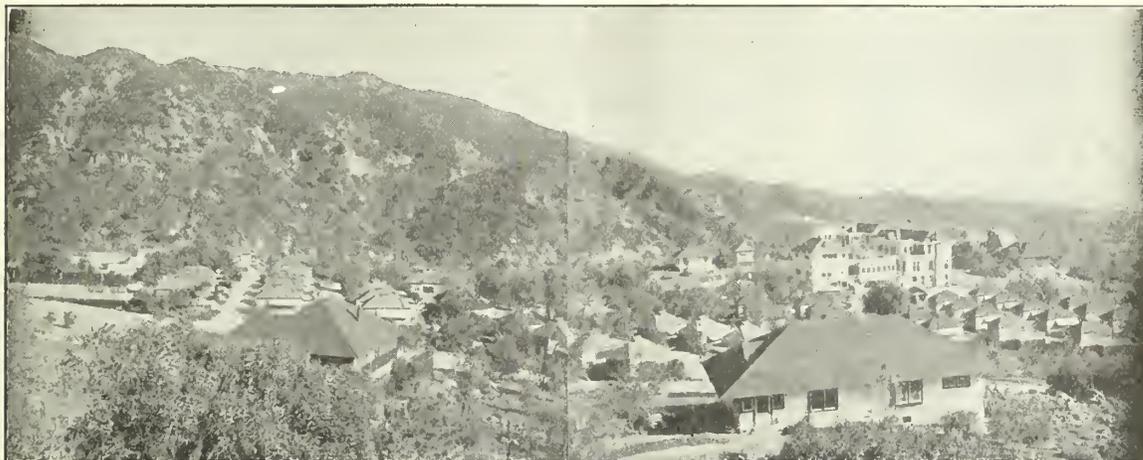
Fine Grades in Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary

San Francisco, Cal.

WANTED RESIDENT PHYSICIAN for Tuberculosis Sanatorium in Southern California (with privilege of city office work). Must be school "A" man, good chest diagnostician and familiar with X-Ray work. Guaranteed minimum salary \$300 per month with opportunity for advancement. When applying state age, qualifications, experience, married or single, nationality, fraternal affiliations, etc. Prefer one financially able to take an interest if position and returns prove satisfactory. Address Dr. H. L. care California State Journal of Medicine.

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California



Specify "Abbott's"

Positively Sterile Without Added Preservatives

ABBOTT'S PITUITARY SOLUTION

Made From Fresh Glands

Physiologically Standardized to a Definite, always Uniform
Potency FOR OBSTETRICAL AND SURGICAL USES—

Try this valuable stimulant of uterine contractions in labor.
With many it has superseded other remedies in shock and
cardiac failure. Supplied in boxes of 6 mil ampules.

20% (full strength) \$1.58, net per box
10% (half strength) 1.13, net per box

Also in bulk containers and oral solutions.

Send for Literature and other Council-Passed Specialties such as Chlorazene, Barbital,
Cinchophen, Acriflavine, Parresine, Digipoten, Benzyl Benzoate, etc.

SEND FOR PRICE LIST AND ASK YOUR DRUGGIST TO STOCK THE ABBOTT LEADERS

THE ABBOTT LABORATORIES, Dept. 11, CHICAGO NEW YORK SEATTLE
SAN FRANCISCO TORONTO

The Storm Binder and Abdominal Supporter



ORHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

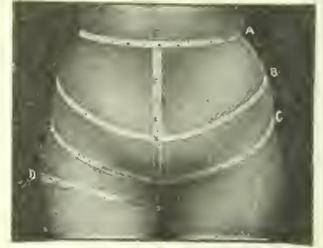


Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of
Crutches Sold or Rented
Arch-Support Fitting a Specialty
ARTIFICIAL LIMBS and ORHOPEDIC APPLIANCES
Bonded Manufacturers for U. S. Government
Telephone Market 6055
Send for Catalogue
Dept. E, 84 Seventh St., San Francisco, Cal.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORHOPEDIC APPLIANCES
Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street

Between Post and Sutter Streets
SAN FRANCISCO

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco
Phones: Sutter 936-937

MANUFACTURERS
Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enameled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400
SAN FRANCISCO

In Case of Hernia

Prescribe the

Benjamin Natural Support

A visit to the office of M. J. Benjamin will convince you that, where an operation is impracticable, there is only one other thing for hernia.

That is the Benjamin Natural Support Principle. Designed to hold the worst rupture securely, without pushing into muscle wall or impairing circulation. Made complete for each case to satisfy individual requirements.

Mr. Benjamin gives his personal attention to each case, assuring that hernia will be correctly held.

When you think of a support for any form of hernia (natural or post-operative)—think of

M. J. BENJAMIN

Suite 214 Douglas Bldg.

Third and Spring**Los Angeles**

Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES

1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.

Phone Franklin 4556

**HERMANN BARTH
Architect**

PHELAN BUILDING

Specializing in Hospital Work

SAN FRANCISCO

Telephone Garfield 847

The clientele of this company has been builded on the basis of an analysis of its needs—

a study of the completeness and application of proper protection—

and a full measure of specialized service.

The only organization exclusively engaged in Professional Protection.

The Medical Protective Co.

of

Fort Wayne, Indiana

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB

REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

WANTED—A retired or non-practicing physician to act as detail man and salesman for a high-grade line of animal glandular derivatives. Prefer one who has had some actual experience in organotherapy and one who can talk intelligently to the physicians along these lines. Address "D. B.," care State Medical Journal, Butler Bldg., San Francisco, California.

H. G. BITTLESTON,

Attorney and President of the H. G. Bittleston Law & Collection Agency, announces the removal of offices from No. 426 South Spring Street, Los Angeles, where he has been established for the past eleven years, to larger and more pretentious quarters, in the Citizens' National Bank Building, Los Angeles, where the latest and most efficient equipment has been installed.



H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.

Suite 1211 Citizens National Bank Building, Los Angeles

KENILWORTH SANITARIUM

KENILWORTH, ILL.
Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. An adequate night nursing service maintained. Sound-proofed rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff
Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to

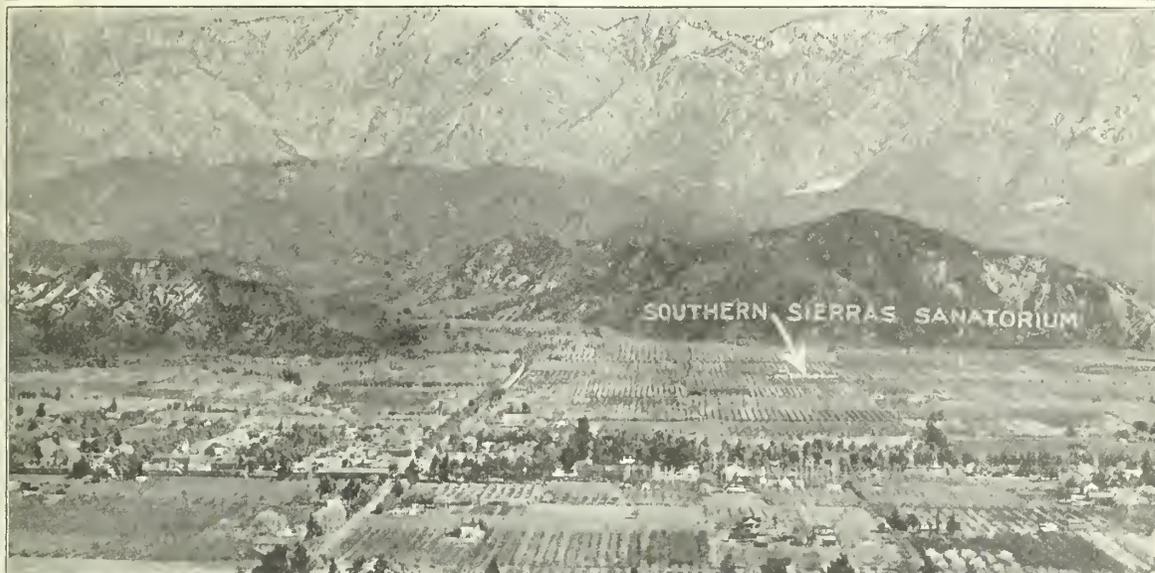
KENILWORTH SANITARIUM
Kenilworth - - - Illinois



SOUTHERN SIERRAS SANATORIUM

BANNING, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, OWNER AND MANAGER

TUBERCULAR SPECIALIST IN ATTENDANCE

DOCTORS' SMOCKS,
OPERATING GOWNS

and
COATS

DENTISTS' JACKETS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed

SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.

A. S. W. GRUNDY

SAN FRANCISCO

970 Sutter Street, Phone Franklin 8338

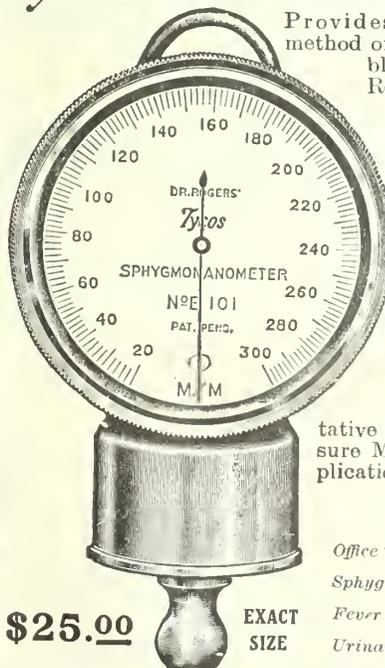
944 Hyde Street, Phone Franklin 3946

OAKLAND

2213-2215 Broadway, Tel. Oakland 1902

Next Key Route Inn

Tycos SPHYGMOMANOMETER



Provides a simple method of determining blood pressure. Recognized as embodying every essential possible in a portable manometer. Made of non-corrosive materials. No friction. Stationary dial. Self verifying.

Tycos authoritative Blood Pressure Manual on application.

Office Type
Sphygmomanometer
Fever Thermometers
Urinary Glassware

\$25.00

EXACT
SIZE

Taylor Instrument Companies, Rochester, N. Y.

#1-M



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
R. A. MARDIS, M. D.

WALTER E. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK
X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY

Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco

Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

Dickson-Bull
Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue

Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Cystoscopy **Urethroscopy**
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

AN OPPORTUNITY

Is Offered Physicians
to Clinically Test the Efficiency
of

BENZYL BENZOATE

Prompt Antispasmodic

to

Smooth Muscular Tissue

Upon request, we will send physicians con-
densed literature and specimens of benzyl
benzoate preparations with our compliments.

Hynson, Westcott & Dunning
BALTIMORE

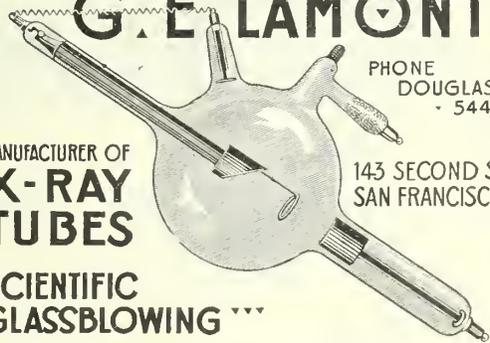
G. E. LAMONT

PHONE
DOUGLAS
- 5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING**



**We Strive to Please Both
Physician and Patient**

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 **DEPENDABLE STORES** **14**
SAN FRANCISCO



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

PHONE MARKET 8048

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.
The advice of the hospital staff is always at the
disposal of the patients' physicians.

When in SAN DIEGO make arrangements for a delightful trip to the Cuyamaca foothills and visit the

ALPINE SANATORIUM

ALPINE, SAN DIEGO, CALIFORNIA

A Most Ideally Situated and Completely Equipped Institution for the Treatment of
TUBERCULOSIS

About an hour's ride on the Imperial Valley State Highway will bring you to the Sanatorium Estate—a natural park of 280 acres, wooded with eucalyptus, oak, pine and sycamore trees, forming beautiful picturesque retreats.

We specialize in DIET, PHYSIOTHERAPY, and GOOD CHEER.

We emphasize Co-operation with the Home Physician.

Phones: { El Cajon 234
 { Main 3828

Address: ALPINE SANATORIUM
450-52 Spreckels Bldg., San Diego.

"The best climate for one affected with pulmonary tuberculosis is that which furnishes a favorable atmosphere for the greatest number of hours during the day and the greatest number of days in the year. . . ."

"A favorable climate for a consumptive is one that is not too warm. A moderately cool atmosphere is invigorating, while a too warm one is depressing. Very cold weather on the other hand makes the living of an outdoor life more difficult and less attractive."—John W. Trask, Assistant Surgeon General, U. S. Public Health Service.

"The American public is familiar on all sides with elaborate and detailed statements of the weather at a thousand and one resorts. If we may believe all we read in such reports, the temperature never reaches the eighties, the sky is flecked with just enough cloud to perfect the landscape, the breezes are always balmy and the nights ever cool. There is possibly one place in the United States where such conditions obtain—A BIT OF COUNTRY ABOUT FORTY MILES SQUARE, AT THE EXTREME SOUTHWESTERN PART OF THE UNITED STATES, IN WHICH SAN DIEGO, CAL., IS LOCATED."—General Greely's Official Report on United States Climate.

Alpine is within that forty square mile mentioned above with the advantages of 2250 feet elevation and thirty miles distance from the coast, which makes it free from fog and mist and it has more sunshine than even San Diego.

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of
the previous calendar year, also 10 cents; two years
old, 20 cents; three years old, 25 cents; in other words,
5 cents additional is charged for each year preceding the
last calendar year.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. **Currency should
not be sent unless the letter is registered.** Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority or making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
nave their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. **Manuscript should not be rolled.**

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

USEFUL IN NERVOUS DISORDERS

"Horlick's"

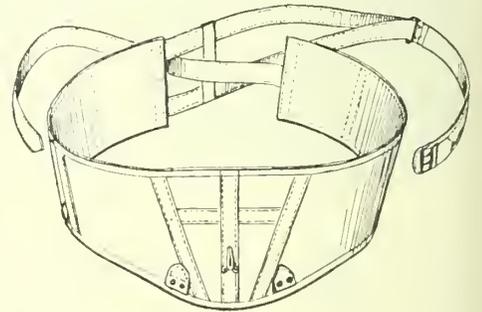
The Original Malted Milk

1. Served hot, as a sedative in insomnia.
2. As a vehicle for the administration of
hypnotics.
3. In the dietetic treatment of neurasthenia.
4. For drug addicts, during the state of
withdrawal.
5. In the digestive and nervous weakness
of invalids, convalescents and the aged.

Avoid Imitations

For printed matter and samples address

HORLICK'S - Racine, Wis.



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are
especially well cared for in a unique and efficient
manner. For twenty-one years we have made our
business a study, and by confining ourselves to
these specialties have developed methods that
assure relief to the patient and satisfaction to the
doctor.

Every physician should secure a copy of our
catalogue, which explains our business in detail.
We have the largest and best equipped plant on
the Pacific Coast and are the exclusive agents for
the famous Drs. Smith's "Honest John" Truss, the
only practical device for holding at the internal
ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
San Francisco

1522 Broadway
Oakland

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. **Associate Staff**—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. **Consulting Staff**—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. **Pathologist**—E. V. Knapp, M. D. **Roentgenologist**—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,
W. H. HILL, M. D., Resident Physician.

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

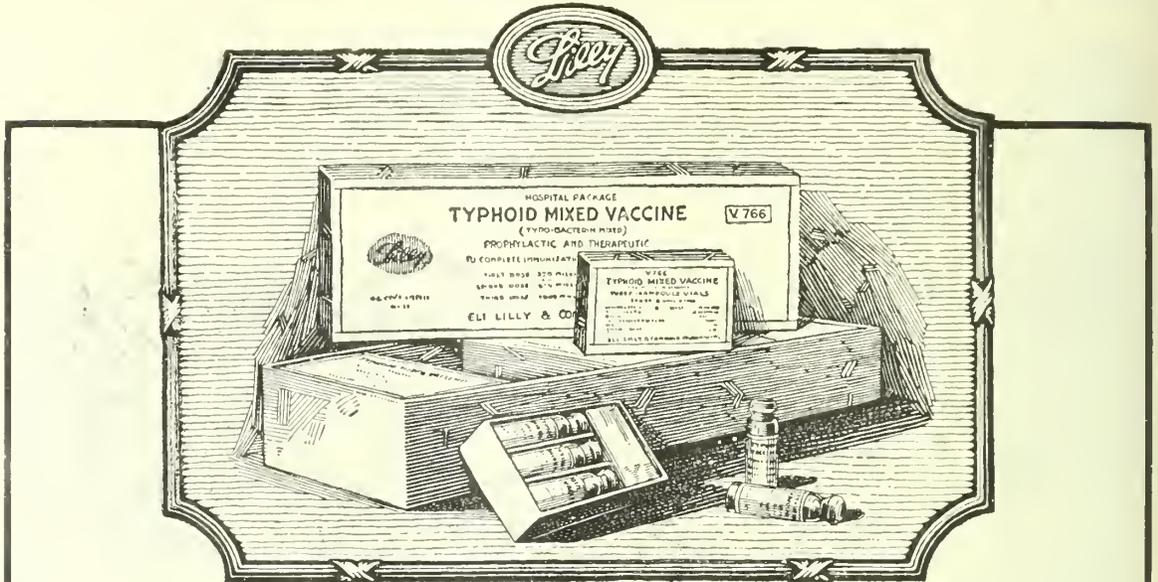
Sherman's polyvalent vaccines are dependable antigens

Local Agents:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY
F. I. LACKENBACH

LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"



Now Is the Time to Immunize Your Patients

The season of *Vacation Typhoid* will soon be with us. Physicians should urge vaccination against typhoid now. Vaccination is simple and safe. Its effectiveness is unquestioned. It should be advocated generally as a protective measure.

Specify "Lilly" Typhoid and Typhoid Mixed Vaccines. They are potent and reliable. Supplied through the drug trade in ampoule vials and syringe packages to meet all requirements.

SEND FOR FURTHER INFORMATION

ELI LILLY & COMPANY

Indianapolis, U. S. A.

Infant Feeding
Diet Materials

WHAT IS THE "BEST" FOOD FOR THE INFANT?

MEAD'S DEXTRI-MALTOSE, cow's milk and water, is suitable for most Babies. There are times when a temporary feeding of Barley Flour gruel is needed—MEAD'S BARLEY FLOUR (sterilized). Flour Ball diluents meet the requirements of certain indications—MEAD'S CEREAL. Arrowroot has its usefulness—MEAD'S ARROWROOT FLOUR. Malt Soup gives gratifying results in feeding Marasmic Babies—MEAD'S DRY MALT SOUP.

MEAD'S INFANT DIET MATERIALS FOR INDIVIDUAL FEEDING.

THE MEAD JOHNSON POLICY

Mead's Infant Diet Materials are advertised only to the medical profession. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own private prescription blank.

LITERATURE AND SAMPLES ON REQUEST.

MEAD JOHNSON & COMPANY
EVANSVILLE
INDIANA, U.S.A.



Atophan

Rheumatism—Then and Now

Formerly the complaint "Rheumatism" promptly brought forth a prescription for Salicylates, simple or complex.

Relief, or even cure, was obtained, though sometimes only after fairly prolonged administration.

The constipating, heart-depressant, kidney-irritant and cumulative toxic by-effects were either not fully realized, or passed up as "necessary evils."

Nowadays, the physician writes "ATOPHAN," happy to be able to do so much better for his patient.

Quicker, cleaner-cut results, markedly devoid of those "it-can't-be-helped" drawbacks.

U. S. A. Made and Available Everywhere

Complete Information and Ample Trial Quantity from

SCHERING & GLATZ, Inc., 150 Maiden Lane, NEW YORK

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

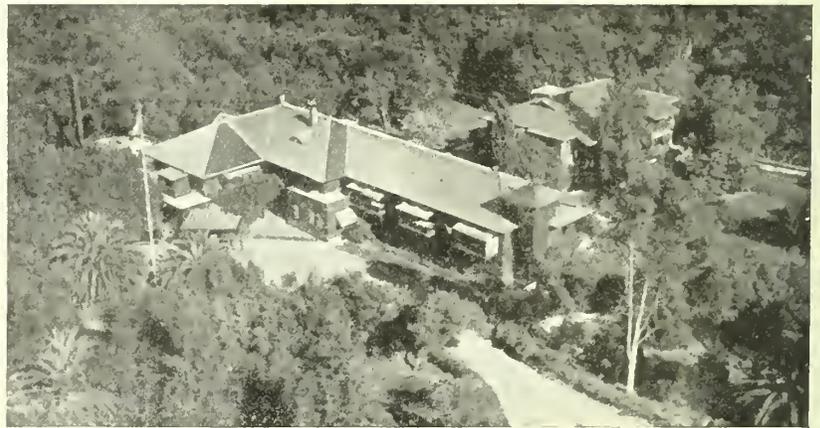
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.
Cuisine Excellent.
Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.
Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.
Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

FOR TUBERCULOSIS

BANNING

CALIFORNIA

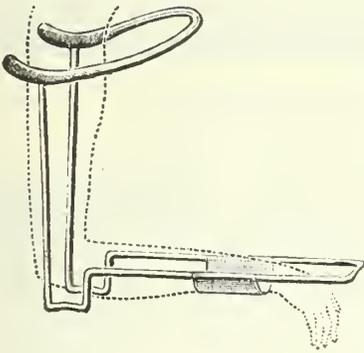


DR. J. C. KING'S SANATORIUM

Many years of successful results.
 Altitude: 2500 feet. Dry climate.
 Trained nurses. Excellent food.
 Send for Circular.

ALLAN L. BRAMKAMP, A. B., M. D.

JOHN C. KING, M. D.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL

X-RAY LABORATORY

Thomson Building
 Oakland

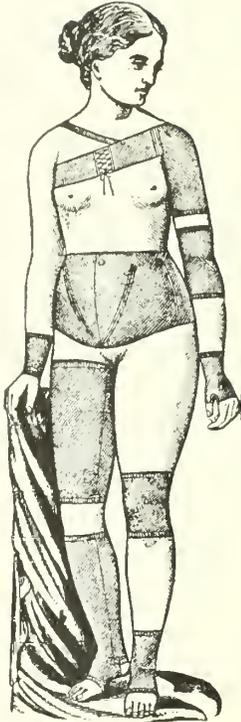
Widemann's Evaporated Goat Milk



Baby
 Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
 San Francisco, Cal.



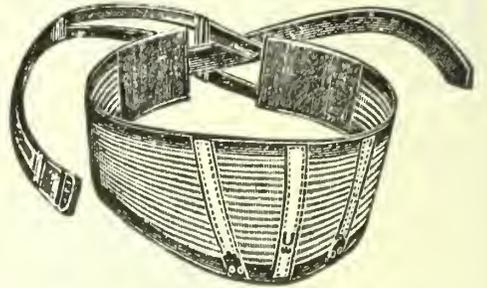
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS
TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DOCTORS' COLLECTIONS

Free Memberships.

Collections on Commission.
Protection Against Delinquents.
Engraved Membership Certificate.
Retention of Patronage.

Thousands are already members. Why not you?
Universal endorsement. References, National Bank of Commerce, Bradstreets, or publishers of this Journal.

SEND FOR LIST BLANKS.

Physicians and Surgeons Adjusting Assn.

Railway Exchange Bldg., Desk 1

Kansas City, Mo.

(Publishers Adjusting Association, Inc., Owners Est. 1902)

WANTED—Young physician graduate of A1 school, internship, ex-service, about to complete one year's work in ophthalmology, desires to obtain assistantship to busy oculist or to a laryngologist, partnership, or to learn of location where a thorough practical oculist is needed. Address M. F. C., care this journal.

Home School for Nervous and Backward Children

Most approved methods of physical and mental development through motor activities and sense training. Outdoor study and play the entire year.

Beautiful estate devoted to the welfare and happiness of the children. Ideal home life.

THE CEDARS

ROSS, MARIN CO., CAL.

C. C. Myers, Principal.

post partum pains

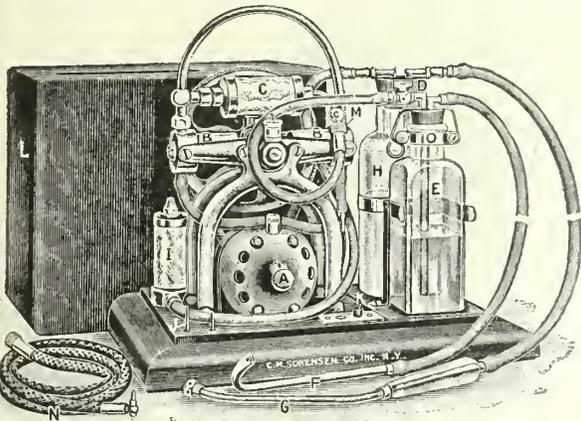
usually quickly yield to "Benzylets";
(initial dose 2; one an hour later—then p. r. n.)

Tasteless, without gastric irritation, this non-toxic non-narcotic, non-habit forming analgesic and anti-spasmodic merits its wide use in place of the opium galenicals because of efficiency and ethics.

In ethically-labeled boxes of 24 at most good drug stores. Please mention this journal when you write for your sample.

BENZYLETS

SHARP & DOHME of Baltimore



The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

For particulars write

Bischoff's Surgical House

Dealers in Physicians and Hospital Supplies

1702-6 Telegraph Ave.

Oakland, Cal.

LEITZ MICROSCOPES

WILLIAM O. HAMMER

San Francisco, Cal. 35 Montgomery
Phone Kearny 708

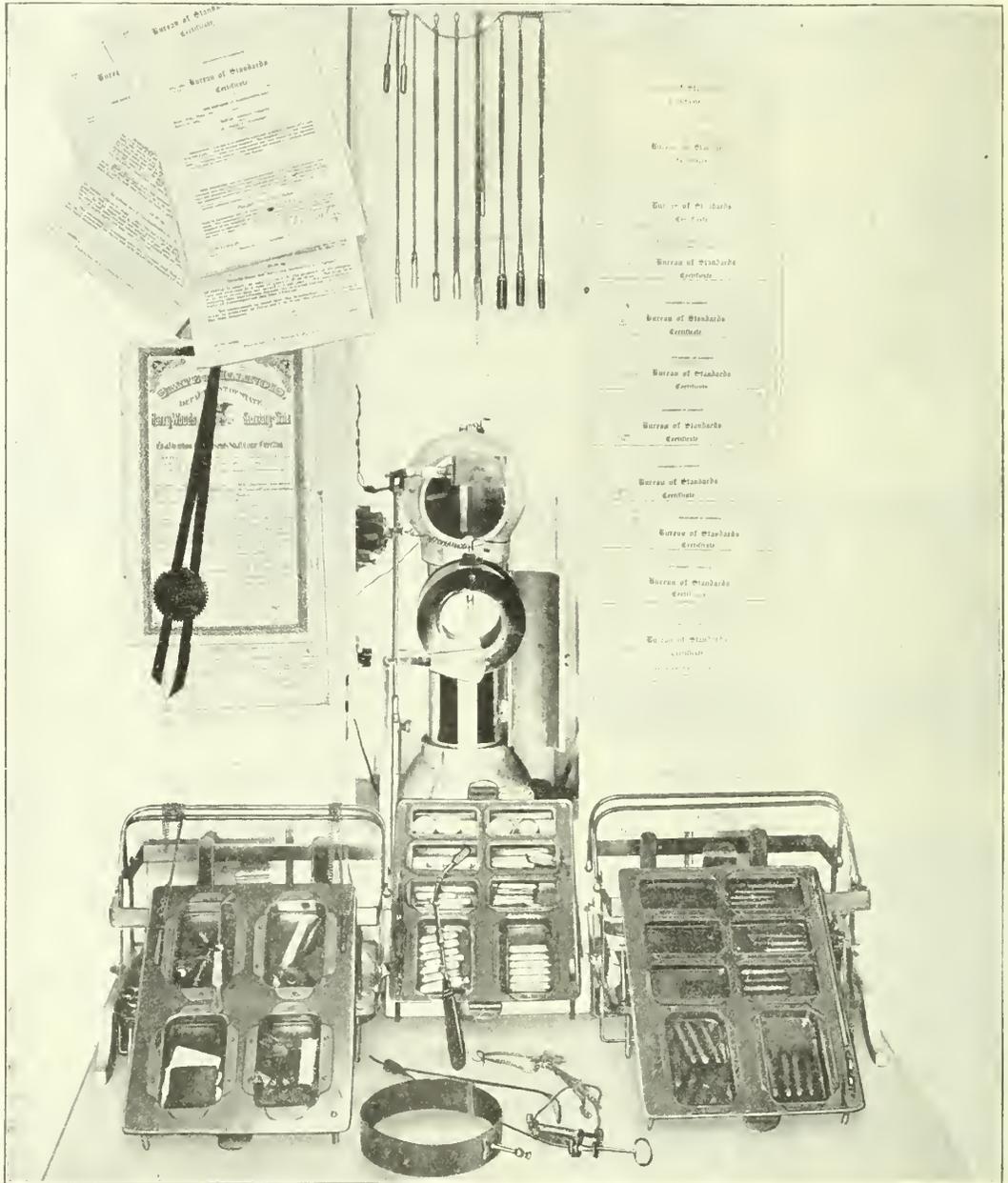
FOR SALE

| | |
|---|---------|
| B. & L. Metallurgical Microscope..... | \$30.00 |
| B. & L. Physician's Microtome, like new.... | 50.00 |
| B. & L. Compound Microscope, like new, list \$240.00, now..... | 160.00 |
| Leitz Microscope | 70.00 |
| Instruments repaired, adjusted and exchanged. | |

Skin Lesions

RADIUM

Cancer



Incorporation Certificate of the Chicago Radium Institute 1912

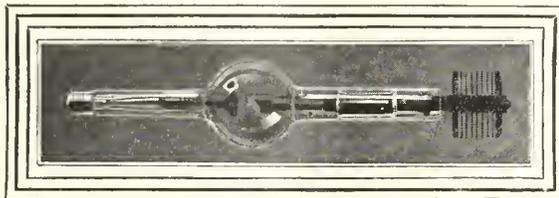
Apparatus for Quantitative Measurement of Radium Applicators and Filters

Standardization Certificates Bureau of Standards Washington, D. C.

FRANK H. BLACKMARR, M. D.

Telephones Majestic 7044 and 7045

1513-1517 Marshall Field Annex Building, 25 East Washington Street, Chicago, Illinois



SERVICE On Coolidge Tubes

IN order to assure users of Coolidge Tubes the utmost in repair service, and which is intended to operate to their decided advantage, the following suggestion is offered:

Hereafter, put it up to the nearest Victor Service Station to handle Coolidge Tube repairs for you. Send the tube to that office, together with a report on your trouble. Our Distributor will take up the work from there on, will follow it through for you and see that the tube is returned to you at the earliest possible moment.

This co-operation on the part of a specially trained service organization will mean the source of much satisfaction to Coolidge Tube users. Our Service Stations are in direct touch with the factory, assuring you that service which you are anxious to get—prompt and efficient—thus relieving you of unnecessary correspondence and loss of time.

Victor X-Ray Corporation

General Offices and Factory

Jackson Blvd. at Robey St.

Chicago

Territorial Sales Distributors

San Francisco, Bush Electric Corporation, 334 Sutter Street

Los Angeles, Victor Electric Los Angeles, 930 Hill Street

HAY FEVER MEMORANDA

Series II.

Late Spring Type. Patients whose hay fever develops in the latter part of May, or during June, should be tested with the pollens of the chief grasses, such as orchard grass, timothy, red-top and certain early flowering weeds.

Late Summer Type. Patients whose hay fever develops in mid-August and continues until frost should be tested with the pollens of such weeds as ragweed and goldenrod, the related sunflower; also with the pollen of the one important late flowering grass, viz., corn, if exposed to same.

Arlco-Pollen Extracts

For Cutaneous Tests and Treatment cover early and late spring, also summer and autumn.

Literature and List of Pollens on Request.

THE ARLINGTON CHEMICAL CO.

**YONKERS,
N. Y.**

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg NEW YORK Fifth Av. 642 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

122 South Michigan Ave. CHICAGO
50 Union Square NEW YORK

LONDON
PARIS

*Patronize
State Journal
Advertisers*

WANTED

A Resident Interne in a Tuberculosis Sanatorium, single man, salary \$100 per month and maintenance.

Address

Henry Hoyt, M. D., Medical Director
La Vina Sanatorium, La Vina, Calif.

The Modern Dressing Material

Cellosilk

Trade-mark Copyright 1920

Marshalltown Laboratories

ADVANTAGES OVER OTHER MATERIALS

Saves you time in dressing—Soft, pliable and easy to handle.
Aids quick healing—NON-ADHERENT; no sticking or tearing when removed.
Eliminates pain—Makes changing of dressing easy.
Safe and Sure results—TRANSPARENT; progress watched through dressing.

Prepared in Perforated and Impervious Forms

Impervious Cellosilk: More satisfactory and less expensive than Oiled Silk and other materials previously used. Excels for wet dressing coverings, impervious dressings of all kinds and constructing Non-Adherent drains. "Standard" (single weight) \$1.25. "Standard Heavy" (double weight) \$1.75
Perforated Cellosilk: A professional improvement for dressing wounds requiring air and drainage. Excels for dressing skin grafts, ulcers and all granulating surfaces. "Standard Perforated" \$2.00.

Have Your Dealer

Send you a roll of both Perforated and Impervious Cellosilk which you will find constant use for. Rolls 9 in. x 12 ft. at above prices.

MARSHALLTOWN LABORATORIES

MARSHALLTOWN, IOWA



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
Member of the Federal Reserve System. Member of the Associated Savings Banks of San Francisco
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

DECEMBER 31, 1920

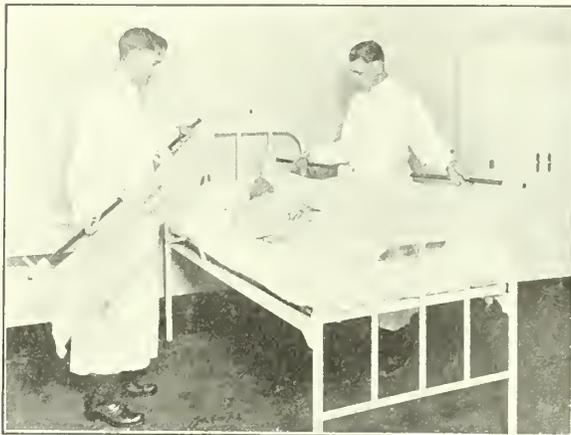
| | | | |
|----------------|------------------------------|-------------------------------|--------------|
| Assets | \$69,878,147.01 | Capital Actually Paid Up..... | 1,000,000.00 |
| Deposits | 66,333,147.01 | Reserve and Contingent Funds | 2,540,000.00 |
| | Employees' Pension Fund..... | | \$343,536.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.



Taking Stretcher from Beneath the Patient. Leaving Him Free Upon the Bed

With a GWIN-FLEX patients are placed on the bed or wheeled stretcher without disturbing their position. There is no strain or jar from lifting. Operations may be performed with the Gwin-Flex stretcher on the operating table, under the patient in readiness to lift him.

Noted surgeons regard this stretcher as a very necessary part of the operating room equipment. It insures them against the undoing of their skillful and delicate operations.

PRICE \$16.00

Gwin-Flex Stretcher Co.

660 O'Farrell Street San Francisco

ESTABLISHED for more than twelve years, it has been our constant aim to make this store more than a purely commercial organization.

We have developed an **institution** for the better service of doctors, nurses and hospitals. Let us co-operate with you.

- | | |
|-----------------------|-----------------------|
| Surgical Instruments | Hospital Equipment |
| Laboratory Supplies | Nurses' Supplies |
| Surgical Dressings | Gauze and Cotton |
| Steel Furniture | Invalid Appliances |
| Diagnostic Appliances | Medical Supplies |
| Elastic Supplies | Orthopedic Appliances |

*Sole San Francisco Distributors
Kny-Scheerer Hospital Equipment*

PERCY J. MEYER & CO.

379 Geary Street San Francisco



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M.D.
Medical Director

Thromboplastin, Squibb

is made in accordance with the direction of Dr. Alfred F. Hess, of the Laboratory of the New York City Department of Health. It contains kephalin, one of the active principles upon which the coagulating power of Thromboplastin depends. This kephalin is the lipoid substance described by Hirschfelder. It is rendered aseptic by the addition of 0.3 per cent tricresol, and standardized for haemostatic power. *Thromboplastin, Squibb* is supplied in 20 cc. vials. Two preparations are available, one for local application and one for hypodermic use. Orders should specify clearly which preparation is desired. Price per vial, \$1.00. A date well within the limit of potency is stamped on each vial. It should be kept cool.

Leucocyte Extract, Squibb

Prepared from healthy leucocytes according to Hiss. Indicated in general acute systemic infections where bacteriological diagnosis is uncertain. Also used in conjunction with the specific serums and vaccines in the treatment of Erysipelas, Meningitis, Lobar Pneumonia, Septicemia, Pyemia and Furunculosis.

In 10 cc. vials at \$2.00.

Literature Upon Request

TELEGRAPH OR MAIL YOUR ORDERS TO

908 Butler Building **FRED I. LACKENBACH** San Francisco, Cal.

Telephone Sutter 3122 (Private Exchange)

HOTEL DEL CORONADO

CORONADO BEACH

CALIFORNIA

Bay and Surf Bathing, Boating, Fishing
Aquaplaning, Tennis, Golf, Motoring and
All Other Out of Door Amusements

DANCING, BILLIARDS, BOWLING

Hotel Del Coronado is conducted on the American Plan and special rates for delegates to the State Medical Convention May 10, 11 and 12 and their families appear below.

AMERICAN PLAN

SINGLE ROOMS WITH BATH \$7.00 PER DAY
SINGLE ROOMS WITHOUT BATH \$6.00 PER DAY
DOUBLE ROOMS WITH BATH \$12.00 PER DAY
DOUBLE ROOMS WITHOUT BATH \$11.00 PER DAY
TWO CONNECTING ROOMS WITH BATH \$6.50 EACH PERSON

Palm Cottages will also be available at Coronado Tent City during the Convention at \$6.00 per day for two persons. European Plan.

W. A. TURQUAND, MANAGER

CALCREOSE

CALCREOSE IS A MIXTURE CONTAINING IN LOOSE CHEMICAL COMBINATION APPROXIMATELY EQUAL PARTS OF CREOSOTE AND LIME.

CALCREOSE HAS ALL OF THE PHARMACOLOGIC ACTIVITY OF CREOSOTE, BUT IS FREE FROM UNTOWARD EFFECTS ON THE GASTRO-INTESTINAL TRACT

CALCREOSE MAY BE TAKEN IN COMPARATIVELY LARGE DOSES
—IN TABLET FORM OR IN SOLUTION.

LITERATURE AND SAMPLES ON REQUEST

THE MALTBIE CHEMICAL COMPANY

Newark, New Jersey

THE Burnett Sanitarium Company of Fresno, California, desires to announce that it has purchased a complete radium equipment and more than 500 milligrams of radium, and are prepared to treat all kinds of cases requiring radium treatment. Treatment will be given under the personal direction of Dr. G. L. Carr.

Emanation tubes will be sent on request of physicians at the rate of \$1.00 per millicurie. A description of the case should accompany the application for emanation tubes.

The medical profession is cordially invited to send their patients to the Burnett, resting assured that not only will their patients receive careful attention, but the physicians themselves will be treated in an ethical manner.

D. H. TROWBRIDGE, M. D.,

General Manager

Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

- X-Ray and Electro-Medical Apparatus
- X-Ray and High Frequency Coils and Machines
- Interrupterless X-Ray Transformers (Three Sizes)
- Coolidge Tube Transformers and Controls
- Electric Bakers (Limb and Body)
- Ozone Generators—Single, Double and Quadruple
- Electric Light Bath Cabinets with Thermo-Vacuum Space
- Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and Coolidge Tube Control for Fluoroscopy

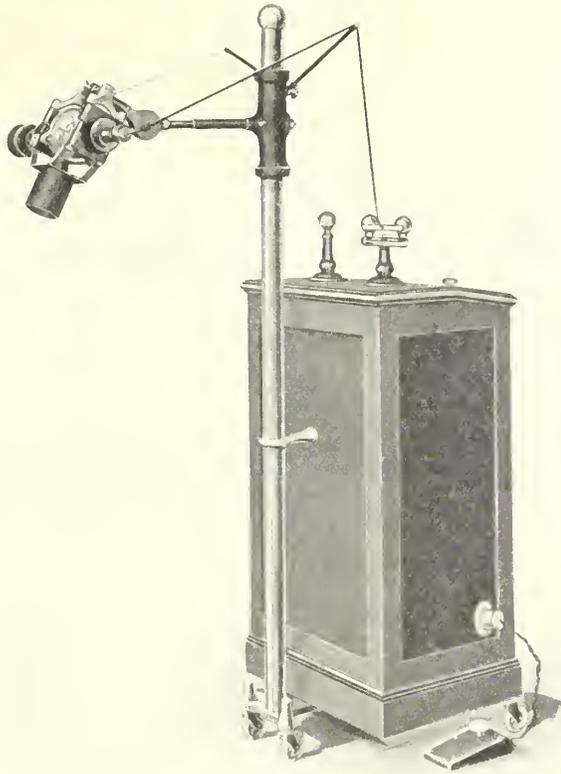
REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for price lists and descriptive literature

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiapella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | M. L. Fernandez, Pinole..... | C. T. Wetmore, Hercules..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Igllick, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | |
| Los Angeles County Medical Society..... | Walter Brem, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | J. A. Beck, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | Edward F. Donnelly, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | W. C. Du Bois, Santa Ana..... | J. C. Crawford, Orange..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. L. Curtiss, Redlands..... | E. J. Eyttinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | H. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | J. R. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | F. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | E. H. Bly, Red Bluff..... | |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lella J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



VULCAN

AUTO X-RAY UNIT, De Luxe

(Coolidge Tube)

The "last word" in X-Ray apparatus, having an excess of power for any practical purpose in Radiography or Fluoroscopy, combining every desirable feature of others with special, exclusive features.

Sold at a moderate price—no transcontinental freight added. Factory service within reach of your office telephone—not 2000 miles away.

The reputation of Vulcan products is too well established to admit of question. Ten years on the market without a dissatisfied patron. References everywhere.

Literature and full information on request.

Vulcan Electric Company

"THE WESTERN HOUSE FOR THE WESTERN DOCTOR"

Makers of X-Ray and H. F. Treatment Apparatus

239-41 So. Los Angeles St.

Los Angeles, California

MEET US AT CORONADO

NOTICES



SAN DIEGO, May 10, 11 and 12, for the State Meeting? If 150 railroad fares are sold, the return rate will be one-half. Be sure to get your railroad receipts and leave them at the registration desk at the Hotel Coronado. The State Society office cannot make reservations. You must do that for yourself directly with the Hotel Coronado.

¶ For rates at Hotel Coronado, see their advertisement on page L.

¶ Take Notice of the Exhibits — You will find them interesting.

¶ Patronize the advertisers of the *California State Journal of Medicine* — They patronize your Journal.

Ward's
ORANGE-CRUSH
LEMON-CRUSH
 and
LIME-CRUSH

WE suggest the "Crushes" for the consideration of physicians and others who seek dependable drinks.

Ward's Orange-Crush, Lemon-Crush and Lime-Crush are compounds of fruit oils, fruit juices and citric acid from oranges, lemons or limes, purest sugar, certified food color and carbonated water.

These drinks are advertised and sold on their merits as pure, wholesome, carbonated beverages that impart coolness and refreshment. No medical

properties are claimed. No claim is made that Orange-Crush can replace orange juice as an antiscorbutic in infant feeding.

The "Crushes" are bottled in all principal towns and cities by one leading bottler under authority and direction of the parent company. Also they are served at fountains.

We shall be glad to furnish physicians with information regarding the "Crushes" and the methods used to insure purity and quality. All correspondence promptly answered.

The "Crushes" are guaranteed under all pure food laws, Federal and State.

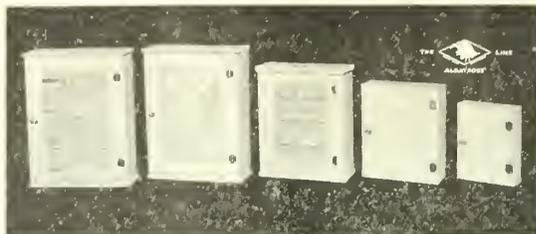


**Orange-Crush
 Company**

Plant and Laboratories,
 CHICAGO
 Research Laboratory
 Los Angeles



No. 102
INSTRUMENT CABINET
 Regular price \$130.00
 SALE PRICE..... 97.50

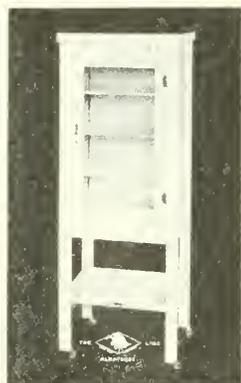


No. 109-A No. 109-B No. 109 No. 109-C No. 109-D
WALL CABINETS

| | Regular Price | SALE PRICE |
|----------------------------------|---------------|------------|
| No. 109 Beveled Plate Glass Door | \$50.00 | \$37.50 |
| No. 109-A Crystal Glass Door | 30.00 | 22.50 |
| No. 109-B Mirror Door | 37.50 | 28.00 |
| No. 109-C Metal Door | 18.00 | 13.50 |
| No. 109-D Metal Door | 15.00 | 11.25 |



No. 113
INSTRUMENT CABINET
 Regular price.....\$120.00
 SALE PRICE..... 90.00



No. 107
INSTRUMENT CABINET
 Regular price.....\$90.00
 SALE PRICE..... 67.50

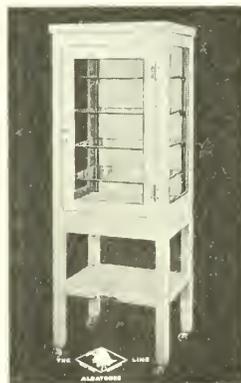
Manufacturers' Surplus Stock
 High Grade All-Steel
 Aseptic Furniture
 Offered
AT BIG SACRIFICE

Until present stocks are exhausted, orders will be accepted at the special prices shown for all articles listed on this page and page following.

All prices f. o. b. factory,
 Portland, Oregon



No. 155
DRAWER TABLE
 Regular price.....\$60.00
 SALE PRICE.....\$45.00



No. 108
INSTRUMENT CABINET
 Regular price \$120.00
 SALE PRICE..... 90.00

Orders may be sent direct or through any of the dealers listed below.



No. 143. **EXAMINING TABLE**

| | Showing Shelf | Trendelenburg Position |
|----------------------------|---------------|------------------------|
| Examining Table (no shelf) |\$75.00 |\$56.25 |
| With Shelf | 80.00 | 60.00 |



No. 112
COMBINATION IRRIGATOR AND DRESSING CABINET
 Regular price..... \$65.00
 SALE PRICE..... 48.75

ALBATROSS DEALERS

- | | |
|------------------------------------|---------------|
| PACIFIC SURGICAL MANUFACTURING CO. | LOS ANGELES |
| KENISTON & ROOT | LOS ANGELES |
| BISCHOFF'S SURGICAL HOUSE | OAKLAND |
| TRAVERS SURGICAL CO. | SAN FRANCISCO |

MANUFACTURED BY

Albatross Metal Furniture Company
 Portland, Oregon

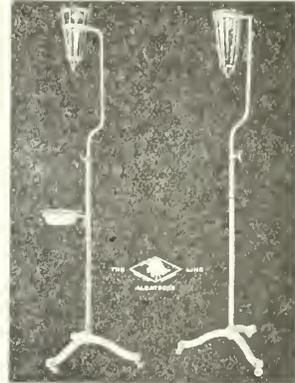


No. 144
COMBINATION IRRIGATOR
AND DRESSING TABLE
 Regular price.....\$42.00
 SALE PRICE..... 31.50



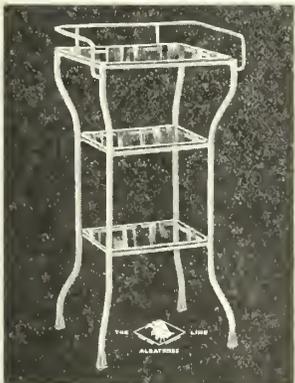
No. 145 **No. 146**
BOWL OR IMMERSION STANDS

| | | |
|---------|---------------|------------|
| | Regular Price | SALE PRICE |
| No. 145 | \$14.00 | \$10.50 |
| No. 146 | 23.00 | 17.25 |



No. 139 **No. 140**
IRRIGATORS AND
INFUSION STANDS

| | | |
|---------|---------------|------------|
| | Regular Price | SALE PRICE |
| No. 139 | \$21.00 | \$15.75 |
| No. 140 | 25.00 | 18.75 |



GEM INSTRUMENT STANDS
 Plate Glass Top and Shelves

| | |
|--|------------|
| | SALE PRICE |
| No. 119. 12 x 20 in., N. P. Railing..... | \$22.50 |
| No. 120. 12 x 20 in., no Railing..... | 20.25 |
| No. 121. 16 x 20 in. N. P. Railing..... | 24.75 |
| No. 122. 16 x 20 in., no Railing..... | 22.50 |
| No. 123. 18 x 24 in., no Railing..... | 27.00 |

**IRRIGATORS AND STANDS,
 CHAIRS, TABLES, WASTE
 RECEPTACLES, WHEEL
 STRETCHERS**

At a discount of 25% from
 Regular Price

See also line of cabinets on
 opposite page



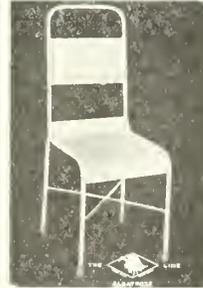
No. 148 **No. 149**
COMMODOE CHAIR
 Regular price.....\$30.00
 SALE PRICE..... 22.50
WASTE RECEPTACLE
 Regular price.....\$6.00
 SALE PRICE..... 4.50

As long as this stock lasts all
 articles listed are offered at
 these special prices.



No. 116
WHEEL STRETCHER
 Regular price.....\$85.00
 SALE PRICE..... 63.75

Here is an opportunity to equip your
 office with high grade furniture at
 prices that cannot be duplicated.



No. 117
**STEEL WARD
 CHAIR**
 Regular price..\$15.00
 SALE PRICE... 11.25

All prices f. o. b. factory,
 Portland, Oregon

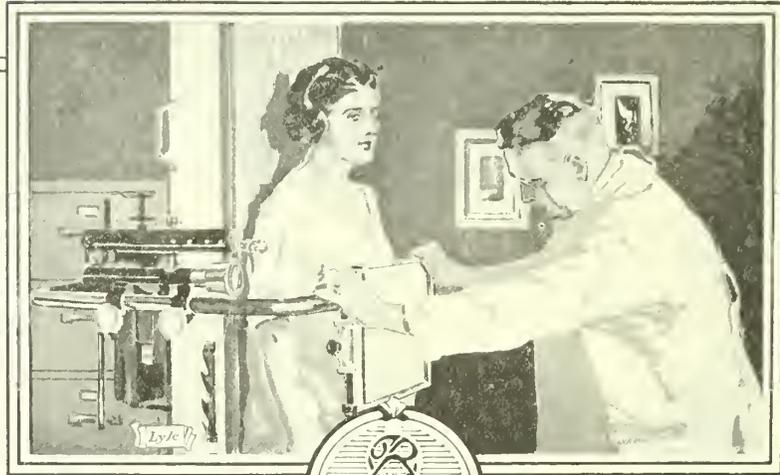
ALBATROSS DEALERS

- | | |
|------------------------------------|---------------|
| PACIFIC SURGICAL MANUFACTURING CO. | LOS ANGELES |
| KENISTON & ROOT | LOS ANGELES |
| BISCHOFF'S SURGICAL HOUSE | OAKLAND |
| TRAVERS SURGICAL CO. | SAN FRANCISCO |

MANUFACTURED BY

Albatross Metal Furniture Company

Portland, Oregon



THE RIEBER UNIT

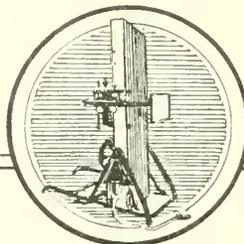
The Ultimate X-Ray Equipment

An increasing number of diagnosticians and specialists are installing The Rieber Unit. They recognize in it an individual X-Ray equipment which enables them to conduct screen examinations and to take X-Ray pictures instantly and as often as they may be required. The machine is complete in one unit. Its operation is simple and can be learned in an hour. Its first cost is low and its upkeep is negligible. Full information will be supplied upon request.

ROENTGEN APPLIANCE COMPANY

693 Mission Street, San Francisco

Southern California
R. L. SCHERER CO.
623 S. Grand Avenue
Los Angeles



Northern California
WALLERSTEDT & PAUL
259 Geary Street
San Francisco

Put Yourself on the Payroll!

EVERY month you pay the butcher, the baker, and the surgical instrument maker. How much is there in it for you? Why not share in the profits which are made on the goods you must buy?

REID BROS., Inc., the largest hospital supply manufacturing company in America, is a co-operative organization belonging to hundreds of shareholders. You can put yourself on its payroll by investing as little as \$100.00. Dividends are paid every three months.

Write for particulars to

Secretary and Treasurer, Reid Bros., Inc.

91-99 Drumm Street

San Francisco, Cal.

Walters Surgical Company

"Service and Dependability"

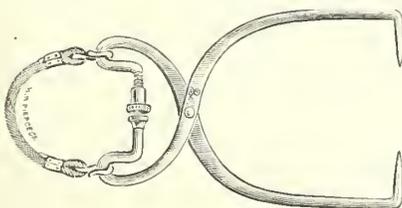
441 SUTTER STREET

Between Powell and Stockton Streets

Phone: Douglas 4017

**High Grade
Surgical Instruments
and
Hospital Supplies**

Trusses Abdominal Supporters
Elastic Hosiery
Orthopedic Appliances
Laboratory Apparatus, Stains



Edmonton Fracture Extension Tongs

REAL BARGAINS

IN

High Grade Aseptic Furniture

CABINETS—TABLES—CHAIRS
STANDS—IRRIGATORS—ETC.

See pages lvi and lvii for
Illustrations and Description

We want you to see samples
of this furniture on display
at Hotel Coronado, Coronado,
California

Authorized Dealers

PACIFIC SURGICAL MANUFACTURING CO.

320 West Sixth St.

Los Angeles

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT - ACCURATE - DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *This should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diacetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California

State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JUNE, 1921

ENTERED AT SAN FRANCISCO.

CAL., AS SECOND-CLASS MATTER

CONTENTS

Editorials 217

Special Articles:

Annual Hospital Conference. Pro-
visional Program 221

Medical Aspects of Visceroptosis.
By G. E. Ebright, M. D. 221

Original Articles:

Another Problem in Surgery. By
W. A. Clark, M. D. 223

Chairman's Address: Pediatric Sec-
tion of the Medical Society,
State of California. By W. P.
Lucas, M. D. 225

Treatment of Tuberculosis With
Partigens (After Much-Deycke).
By Max Rothschild, M. D. 226

Protection of the Perineum by Epi-
siotomy in Delivery at Term.
By Dale L. Martin, M. D. 229

Problems in Plastic Surgery. By
G. W. Pierce, M. D. 231

Influence of Adrenalin on Nephri-
tis and Its Complications by
Injection into the Kidneys. By
G. L. Eaton, M. D. 234

New Obesity Cures for Old or the
Chiropractic Thrust. By Lulu
Hunt Peters, M. D. 237

Amebic Abscess of the Liver. By
P. K. Gilman, M. D. 239

Treatment of Bladder Tumors by
Radiation and Fulguration. By
R. L. Rigdon, M. D. 243

Peripheral Nerve Surgery. By
Charles L. Tranter, M. D. 244

Organized Medicine for the Masses
a Feature of Present Day Medi-
cal Practice. By E. W. Cleary,
M. D. 245

The Endocrines and Their Influence
on the Skin. By Anstruther
Davidson, M. D. 248

Clinical Usefulness of Orthocardio-
gram and Cardiac Pattern. By
Harry Spiro, M. D. 251

Book Reviews 255

County Societies:

Alameda 256

Fresno 256

Kern 256

San Diego 256

San Joaquin 257

Correspondence:

A New Theory of the Circula-
tion 257

The Graceless Chiro 257

Notice:

Potter Metabolic Clinic 258

Clinical Department:

Neurotic Asthma. By F. F.
Gundrum, M. D. 258

University California Hospital—
Children's Department 258

Obituary:

Memorial to Dr. Shadworth O.
Beasley 259

Wm. Breakey Lewitt 259

New Members 260

Transferred 260

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President H. G. BRAINERD, Los Angeles, President-Elect
ALFRED C. REED, San Francisco, First Vice-Pres. JOSEPH CATTON, San Francisco, Second Vice-Pres.
W. E. MUSGRAVE, San Francisco, Editor and Secretary
CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties.
PAUL M. CARRINGTON, San Diego (Term expires 1924)

SECOND DISTRICT—Los Angeles, Santa Barbara, Ventura and Kern Counties.
WM. H. KIGER, Los Angeles (Term expires 1922)

THIRD DISTRICT — San Luis Obispo and Monterey Counties.
T. C. EDWARDS, Salinas (Term expires 1924)

FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.
DWIGHT H. TROWBRIDGE, Fresno (Term expires 1924)

FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties.
FRANK H. PATERSON, San Jose (Term expires 1923)

SIXTH DISTRICT—San Francisco County.
C. G. KENYON, San Francisco, Chairman. (Term expires 1922)

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); Réne Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); Saxton T. Pope, San Francisco (term expires 1924); C. Van Zwalenburg, Riverside (term expires 1923).

SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties.
EDW. N. EWER, Oakland (Term expires 1923)

EIGHTH DISTRICT—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.
JAMES H. PARKINSON, Sacramento (Term expires 1922)

NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.
JAMES H. McLEOD, Santa Rosa (Term expires 1923)



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

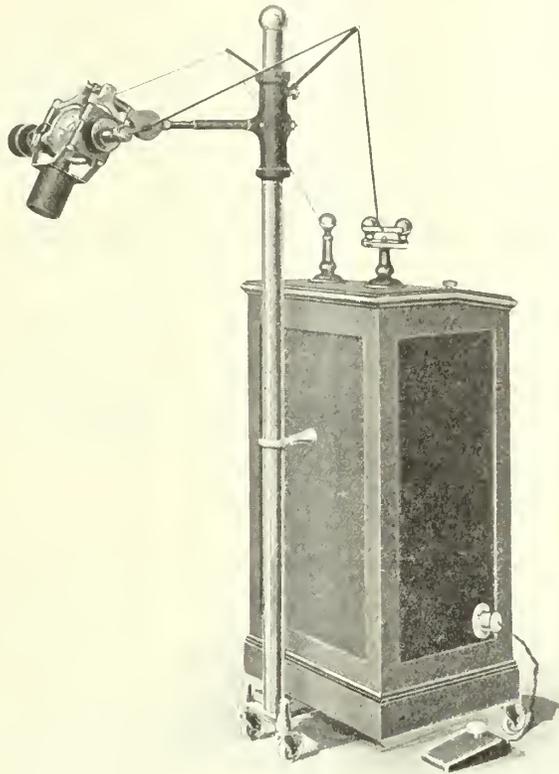
THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M.D.
Medical Director



VULCAN

AUTO X-RAY UNIT, De Luxe

(Coolidge Tube)

The "last word" in X-Ray apparatus, having an excess of power for any practical purpose in Radiography or Fluoroscopy, combining every desirable feature of others with special, exclusive features.

Sold at a moderate price—no transcontinental freight added. Factory service within reach of your office telephone—not 2000 miles away.

The reputation of Vulcan products is too well established to admit of question. Ten years on the market without a dissatisfied patron. References everywhere.

Literature and full information on request.

Vulcan Electric Company

"THE WESTERN HOUSE FOR THE WESTERN DOCTOR"

Makers of X-Ray and H. F. Treatment Apparatus

239-41 So. Los Angeles St.

Los Angeles, California

MEET US AT CORONADO

Hay Fever Prophylaxis

THE UNIFORM STABILITY AND ANTIGENIC
ACTIVITY OF THE PRODUCT EMPLOYED
ARE OF UTMOST IMPORTANCE

Pollen Antigen *Lederle*

IS SO PREPARED THAT ITS ANTIGENIC
ACTIVITY IS ACCURATELY DETERMINED
AND SO PRESERVED THAT ITS STABILITY
IS ASSURED.

Lederle Antitoxin Laboratories

511 FIFTH AVENUE

COR. OF FORTY-THIRD ST.

NEW YORK CITY

B & B Surgical Dressings

Also Allied Products

Cotton — Gauze — Bandages Sterilized Again After Wrapping

B & B Sterile Dressings come to you sealed. They are sterilized after wrapping. And incubator tests are made to prove them sterile to the core.

Equally high standards apply to every B & B product. We have worked for 27 years to excel. Every detail has been studied, including convenience. A mammoth model laboratory has been equipped to make them.

B & B Handy-Fold Plain Gauze comes in pads, each sealed in a parchmine envelope.

B & B Handy-Package Cotton can be used without removing the roll. It goes through 21 processes.

B & B Surgeon's Soap contains either 1% or 2% mercuric iodide. The 1% has a phenol coefficient of 51.98.

B & B Plaster Paris Bandages come wrapped in water permeable paper.

We have for decades been well-advised by authorities. Our experts are master of their arts. Our standards and tests are extreme.

Any B & B product will meet or excel your requirements. All will delight you, some will surprise you.

After all this effort, all these years, we urge you to learn the B & B achievements. A test of any will bring you respect for all.



Developed by three experts who have devoted more than 20 years to the perfection of Adhesive.



Water soluble, sterile, antiseptic, non-staining—for hands and instruments.



B & B Formaldehyde Fumigators—all sizes—conform in strength with U. S. Public Health Service standards

BAUER & BLACK Chicago New York Toronto

Makers of Sterile Surgical Dressings and Allied Products

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.

SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."

THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.

FOURTH—That vaccination against all three infections does definitely protect against all three.

FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.

SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count

Write for Therapeutic Index Price List

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients).

Includes medical and nursing care, board and laundry.

Medical Director, Dr. Philip King Brown

APPLY OFFICE

AREQUIPA

401 Medical Bldg., San Francisco

Phone Franklin 844

DEPENDABLE PRESCRIPTION SERVICE

*Shumate's
Prescription Pharmacies*

- | | |
|-------------------------------------|------------------------------------|
| 1 Cor. Sutter and Devisadero. | 8 Valencia and 16th Streets. |
| 2 Cor. Haight and Masonic Ave. | 9 California St. and 23rd Ave. |
| 3 Cor. Sacramento and Presidio Ave. | 10 Cor. Bush and Hyde Sts. |
| 4 84 Post Street East of Kearny. | 11 S. P. Bldg., Market Near Ferry. |
| 5 Cor. Carl and Cole Streets. | 12 Clement St. and 2nd Ave. |
| 6 Cor. Union and Steiner Streets. | 13 Polk and Washington Sts. |
| 7 Cor. Powell and Sutter Sts. | 14 Ninth Ave and Judah St. |

PHYSICIANS' PRESCRIPTIONS ACCURATELY DISPENSED

SAN FRANCISCO

OVALTINE

IN PHTHISIS

"Ovaltine" is a concentration of the nutritive principles of Winter Malted Barley, Milk and Eggs, and is, therefore, rich in easily digested and assimilated protein of great value in checking the morbid process and accelerating improvement of the general health.

Its protein spacers are adequate, in well adjusted ratio and in a form which taxes digestion to the minimum.

Its enzymes aid the digestion of other foods, its salts of iron, calcium and phosphorus promote normal mineral metabolism, and its accessory food factors favor full utilization of the nutritive principles by the tissues of the body.

"Ovaltine" permits of diet reinforcement without increase of bulk and enhances the digestibility of the food, valuable features where anorexia or dyspepsia are associated with the constitutional disturbance.

"Ovaltine" is obtainable in 8 oz., 17 oz., 5 lb. and 10 lb. tins from druggists

SAMPLES AND LITERATURE MAILED UPON SIGNED REQUEST

THE WANDER COMPANY

37 South Wabash Avenue, Chicago, Illinois

WORKS: VILLA PARK, ILLINOIS

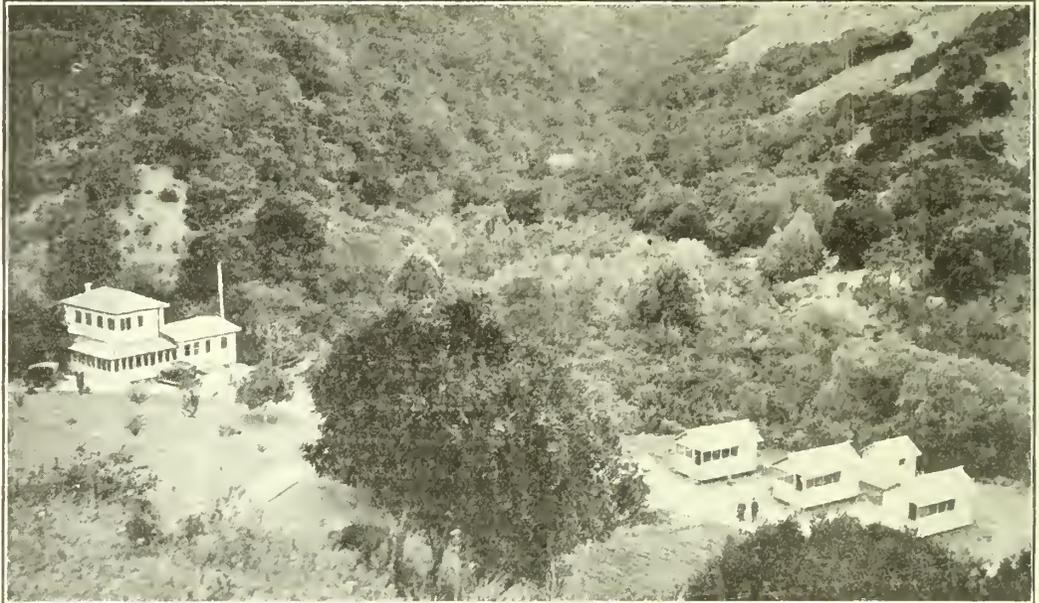
M 8



CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*



SOME OF THE COTTAGES

□
*Rates
Reasonable*
□
Climate Ideal

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

Physicians and Surgeons

patronize the advertisers

who help support

your

California State Journal of Medicine



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.

HYDROPATHIC
DEPARTMENT

PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of HYDROTHERAPY,—coupled where indicated with NAUHEIM,—RADIO ACTIVE CLAY,—CALCIC CARBONATE,—MAGNESIA CARBONATE and SULPHATE BATHS,—RADIUM EMANATORIUM. Modern modifications of ZANDER APPARATUS, MASSAGE and MANIPULATIONS. ELECTRO-THERAPY, THERMO-PENETRATION, HELIO-THERAPY, PROCTOCLYSIS, CORRECTIVE GYMNASTICS and the application of tabulated PHYSICAL EFFICIENCY TESTS

We are well equipped with modern mechanical devices of scientifically proven efficiency for the RELIEF of SUFFERING. We maintain a most comprehensive SERVICE ORGANIZATION of TRAINED ATTENDANTS rendering PERSONALIZED SERVICE to every patient.

Our Institute is specially equipped for the relief of persons suffering from CHRONIC DISORDERS. We are also prepared to take care of POST-OPERATIVE CONVALESCENTS in need of RECONSTRUCTION and "CONDITIONING" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

DOCTOR:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern PHYSIO-THERAPY. Our twenty years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

Care—Courtesy—Privacy—Comfort.
Best references. Inspection invited.

G. H. Richardson, M. D.,
Medical Director.
N. A. Karpaty, B. Sc.,
Technical Superintendent.
Mrs. N. A. Karpaty,
In Charge of Women's Dept.

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES
133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

The Seymour Sanatorium

Banning, California

SITUATED in the broad San Gorgonio pass at an elevation of 2,400 feet, with inspiring views of Mt. Grayback and old San Jacinto on either hand, near, yet not upon the desert, the SEYMOUR SANATORIUM is exceptionally well located both from a climatic and environmental standpoint.

Here nature gives her best, and all modern means are used to assist and reinforce her efforts.

Careful study of each case, strict individualization in treatment and painstaking attention to detail, assure to the patient the attainment of the maximum benefit from the sanatorium sojourn.

The rates are very moderate

CHARLES E. ATKINSON, M. D., Medical Director



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Ætna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Ætna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Ætna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Ætna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Ætna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1921 - - - - \$204,839,890.53

If you are not acquainted with the Ætna Agent in your town write direct to

J. R. MOLONY, Manager, Western Branch

Department "C," 333 Pine Street, San Francisco, Calif.

ÆTNA LIFE INSURANCE COMPANY

AFFILIATED WITH

ÆTNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

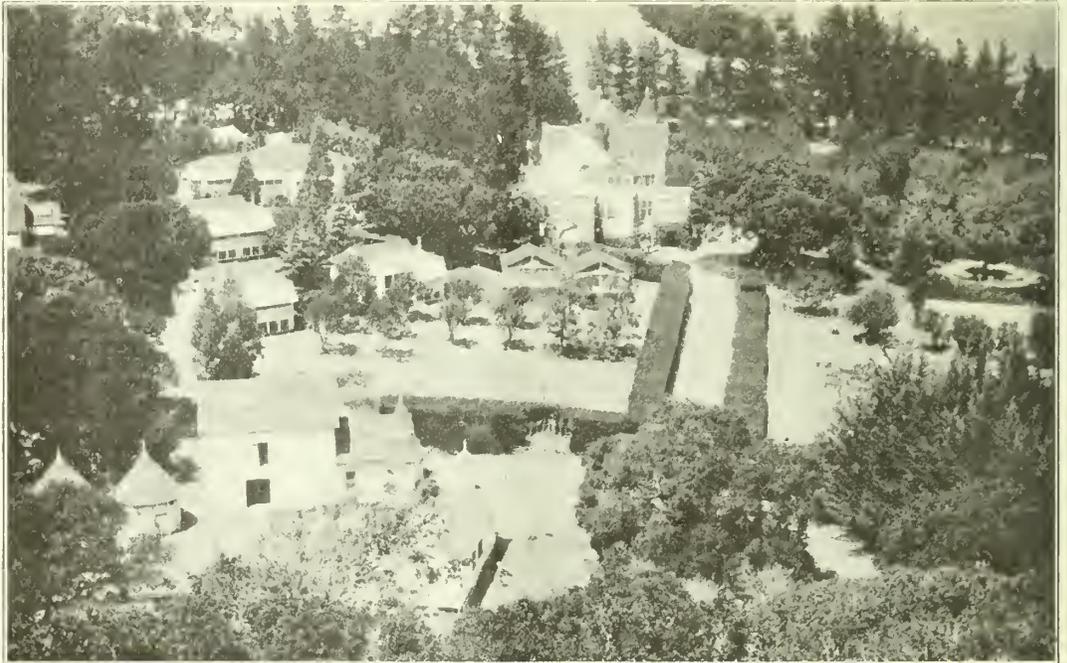
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
 Medical Director
 350 Post St., San Francisco

DR. HARRY WARREN,
 Assistant Medical Director
 Belmont

USE THERMOWEVE

The Electrically-Heated Blanket



Favorable results are obtained through the use of THE THERMOWEVE ELECTRIC BLANKET, in the treatment of the following diseases:

- | | |
|---------------------|------------------|
| HIGH BLOOD PRESSURE | INSOMNIA |
| RHEUMATISM | INFLUENZA |
| BRIGHT'S DISEASE | PNEUMONIA |
| KIDNEY TROUBLE | COLDS |
| LIVER TROUBLE | CONGESTION |
| NERVOUSNESS | BLOOD POISON |
| DROPSY | POOR CIRCULATION |
| DIABETES | |

The Thermostat positively controls the temperature of the blanket, maintaining indefinitely any degree of heat desired. Treatments of long duration can be given with perfect safety.

THERMOWEVE blankets are light, strong, flexible and durable. They are practical for office treatments and can be folded the same as any other piece of bedding, into a convenient package and carried on professional calls.

Special introductory prices made to Physicians and Surgeons, Hospitals and Sanatariums.

THE ELECTROTHERM CO., INC.

252-254 San Fernando Blvd.

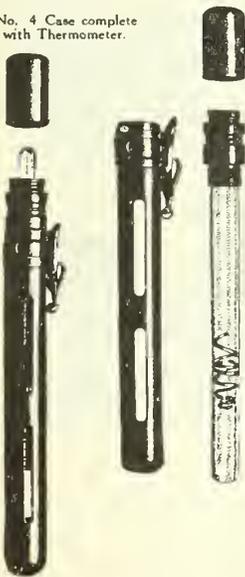
Los Angeles, California

Manufacturers and Distributors. Phone Lincoln 1967

**ALWAYS STERILE
ALWAYS AT HAND**

A Practical Thermometer Case

No. 4 Case complete with Thermometer.



A doctor best knows a doctor's needs.

Dr. J. P. Morneau, in rendering professional services, realized the urgent need of a thermometer case which would keep his thermometer absolutely sterile at all times. It is obvious that a thermometer cannot remain sanitary unless it is bathed in a sterilizing solution after each use. This idea is perfected in the Morneau Thermometer Case—and in a very practical manner.

Into a case of pure para gum rubber is fitted a glass tube which holds the sterile solution. This glass tube contains a spiral spring which is adjustable to fit any thermometer. However, we recommend using the Morneau Thermometer because its markings are on the inside of the glass.

The Morneau Sanitary Thermometer case is no larger than a fountain pen, and just as easy to carry. It is leak-proof and can be refilled easily. If your dealer cannot supply you write us.

At the left, the outside case.

Above, the glass tube with spring and the screw-lock cap.

- No. 4. Case only with Pocket Clip
- No. 5. Case only, with Gold Chain and Pin - - - \$3.50
- Morneau One Minute Thermometer - - - \$1.50
- Morneau Half Minute Thermometer - - - \$1.50

Morneau
SANITARY
THERMOMETER CASE
.. COMPANY ..
APPLETON — WISCONSIN

Mellin's Food

is a

Maltose and Dextrins product

containing in addition to these readily digested
carbohydrates

Proteins from wheat and barley

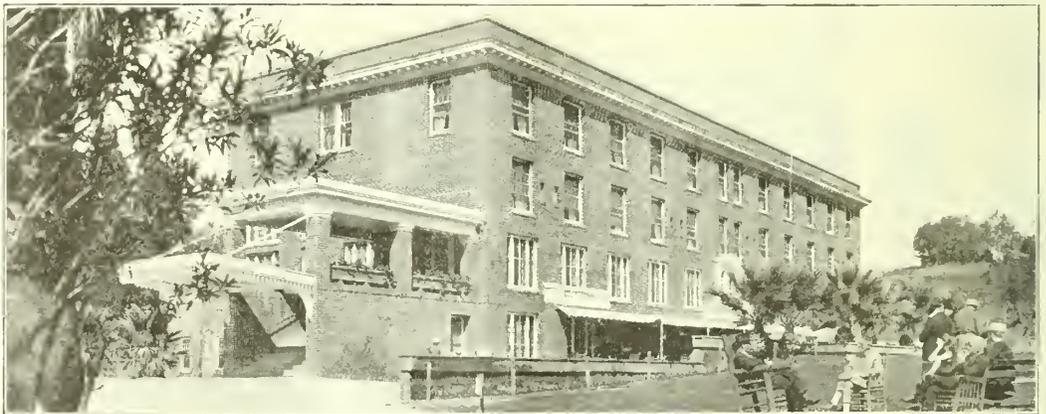
Salts as they occur naturally in these grains
and

Potassium bicarbonate in an amount calculated to meet
the potassium requirement of the artificially fed infant

Mellin's Food Company,

Boston, Mass.

BYRON HOT SPRINGS CALIFORNIA



"THE HOME OF HEALTH"

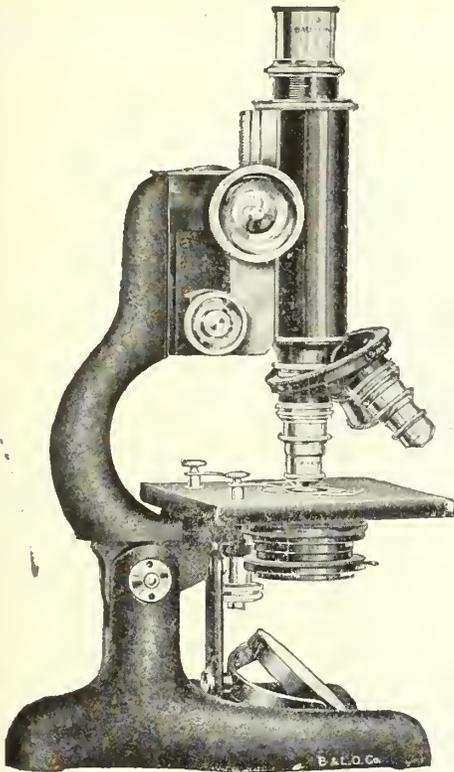
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto.

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9
mm oil immersion.

Abbe condenser in quick-screw sub-
stage.

Circular dust-proof nosepiece.
Side fine adjustment—lever type,
ceases to act when objective
touches the slide.

Large stage is completely covered
with rubber—top, bottom and
edges.

Complete in polished hardwood
carrying case,

\$132.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AHKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye,
Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology
and Pharmacy.

Laboratories fully equipped for basal metabolism
estimations, Wassermann reaction and blood chemistry,
Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



ALQUA
THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLED AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U.S.A.

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

At All Druggists

Grageroff & Papazoni



Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

Readily Soluble
Practically Free from Toxicity
Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you communicate with

H. METZ LABORATORIES, Inc.
One-Twenty-Two Hudson Street, New York

Adhering to the Obligation

NO one can review the development of modern therapeutics without being profoundly impressed with the importance of the discovery and isolation of Adrenalin.

We are proud of the policy and the enterprise which have made this achievement possible. And, as the logical purveyors to the medical profession of the only natural Adrenalin, we have not been unmindful of the responsibility so great a privilege entails.

For a score of years the unvarying quality of the product has given eloquent evidence of our adherence to that obligation.

And this explains why physicians all over the world find in the use of Adrenalin, the original product, such a peculiar sense of satisfaction. They are firm in their conviction, gained by repeated experience, that the medicament they have chosen will act quickly and surely and with unfailing uniformity.

Parke, Davis & Company



Quartz Mercury Vapor Ultra Violet Light

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, Specula, Endoscopes, Proctoscopes, Laryngeal, Pharyngeal
Nasal, Urethral, Vaginal, Rectal, Uterine Lenses and Radiating
Tubes for the application of ultra-violet emanations.

WAGNER QUARTZ VAGINAL AND RECTAL SPECULA

The Pambrun Deep Penetration Filter System

TECHNIQUE — INSTRUCTION — INSTALLATION — MAINTENANCE

KROMAYER UNIT — Water Cooled

ALPINE SUN UNIT — Air Cooled

L. B. PAMBRUN

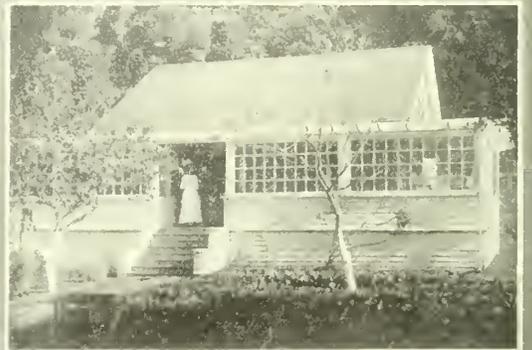


Phelan Building
SAN FRANCISCO
Phone SUTTER 2322

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

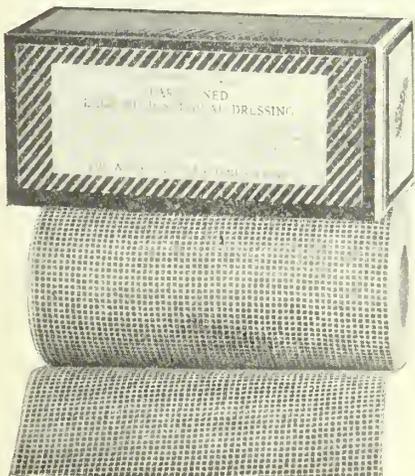
Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

The Dressing That Does Not Stick



For wounds of every sort, traumatic and operative, Parresined Lace-Mesh Dressing is the best from every viewpoint. It is readily and easily removed, at a saving of time for the doctor and his assistant. Its removal inflicts little or no pain upon the patient. Healing is expedited rather than retarded as with ordinary adherent gauze. From 50 to 75 per cent less of absorbent cotton, that tears and pulls upon the surface, granulations and overdressings, is required where it is generally applied. Most appreciated by those who have many cases to dress daily.

NET PRICES

| | |
|---|---------|
| 10-yard roll..... | \$ 2.63 |
| 50-yard roll..... | 11.63 |
| Box of six envelopes, each containing a strip 6 by 18 inches..... | 1.20 |

A specimen free to any doctor
on request. Send for it today.

THE ABBOTT LABORATORIES

Department 11, Chicago, Ill.

Manufacturers of Barbital, Cinchophen, Procaine,
Chlorazene, Dichloramine-T, Acrilavine, Benzyl
Benzoate, and Digipoten.

New York Seattle San Francisco Toronto Bombay

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

*For Immediate Delivery***PITUITOL**

Under this distinctive trade name we offer a solution of the POSTERIOR PITUITARY LOBE, of greater concentration than the U. S. P. requirement.

PITUITOL *Obstetrical***PITUITOL** *Surgical*

Approximately 3 times U. S. P. strength
in ½ CC and 1CC Ampoules

Approximately 6 times U. S. P. strength
in 1 CC Ampoules

Our Pituitary Extracts are approved by the Council on Pharmacy and Chemistry.
Physiologically standardized, dated, sterile, positive action.

"Specify WILSON'S"

Prepared from Abattoir to finished Package by

*"This mark***THE WILSON LABORATORIES***your guarantee"*

4213 South Western Boulevard, Chicago, Ill.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments.

Southern California

DR. I. B. LINEBARGER
1000 Lyon St., Los Angeles

Phones: Main 5790-Auto 10155

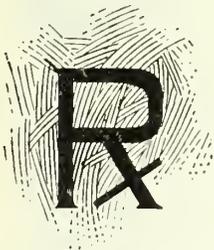
Northern California

D. BLAINE MORGAN
84 Second St., San Francisco

Phone: Kearny 1416

Stock carried in both cities.

May we place you on our mailing list for "The Autacoid and Suture," our house journal devoted to Glandular Therapy?

Write for Catalog

Always in the corner of every written prescription. Meaning "take" or "compound." Thus you give your specific instructions for your drug requirements in a language long dead and thus not subject to misinterpretation. Whatever you order we supply without imitation, duplication or substitution.

BUTLER BROTHERS

Professional Pharmacists

Suite 807-9-11 Flood Building

Powell and Market Streets, San Francisco, Cal.

Phone: Douglas 163
Private Exchange

WANTED—Practice in California. Credentials A-1. Good bank reference. Will consider well established general practice in the city or country; or partnership with chance of buying. Proposition must be ethical and bear close investigation. Can do business at once. Address Dr. R. K., care State Journal of Medicine.

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

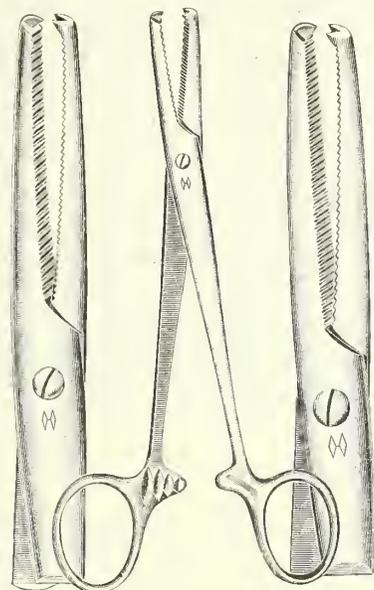
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





TRAVERS

Surgical Co.

SAN FRANCISCO, CAL.

Phone Sutter 4651 372 Sutter Street

SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES

Our Stock is Complete

CYSTOSCOPES AND ACCESSORIES
MICROSCOPES AND SUPPLIES
SPLINTS OF ALL KINDS
LUER SYRINGES AND NEEDLES
PHYSICIAN'S OFFICE FURNITURE
ELECTRIC DIAGNOSTIC INSTRUMENTS

If It Is Surgical

We Have It

Pituitary Liquid

is the perfect preparation of Posterior Pituitary active principle. It, too, is without preservatives— $\frac{1}{2}$ c. c. obstetrical, 1 c. c. surgical.

Corpus Luteum (Armour)

is true substance and will give results. Powder 2 and 5 gr. capsules and 2 and 5 gr. tablets.

Surgical Catgut *Ligatures*

Plain and chromic, regular (60 inch) emergency (20 inch) Iodized (60 inch).

Strong and sterile



An Incomparable Product

The Suprarenalin preparations are now available.

Suprarenalin Powder - - - 1 grain vials
Suprarenalin Solution, 1:1000 - 1 oz. bottles
Suprarenalin Ointment, 1:1000 - - tubes

Suprarenalin designates the astringent, hemostatic and pressor principle of the Suprarenal Gland as isolated by the Armour chemists.

Suprarenalin Solution is the incomparable preparation of the kind. It is water-white, stable and non-irritating and is entirely free from chemical preservatives.

Suprarenalin ointment is bland and its effects very lasting.

ARMOUR AND COMPANY

CHICAGO



The Most Ethical
Prescription Pharmacy
in
San Francisco

Accuracy, Purity, Quality
and Immediate Service

Broemmell's Prescription
Pharmacy

California and Steiner Sts. West 558-559
and Manufacturing Chemists
San Francisco, California

SAVE MONEY ON

YOUR **X-RAY** SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-ograph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 millamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

Tuberculosis

ALTA SANATORIUM

DR. BURT F. HOWARD
Medical Director

MRS. B. E. TAYLOR
Nurse-Matron

Alta, Placer Co., California

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

Fine Grades in Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary

San Francisco, Cal.

Physiotherapy

DR. A. GOTTLIEB

1661 Sacramento Street
San Francisco, Calif.

Phone Prospect 593

A theoretical and practical course in thermo-helio- electro- and mechanotherapy for regular graduates in medicine and for physiotherapists will begin August 1, 1921, and continue eight weeks—three nights a week, between 7:30 and 9:00 P. M. For out-of-town applicants special hours can be arranged. Registration must be made in advance because the class is limited.

FEE FOR THE COURSE IS \$75.00

POTTENGER SANATORIUM

For Diseases of the Lungs and Throat

MONROVIA,
CALIFORNIA



A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

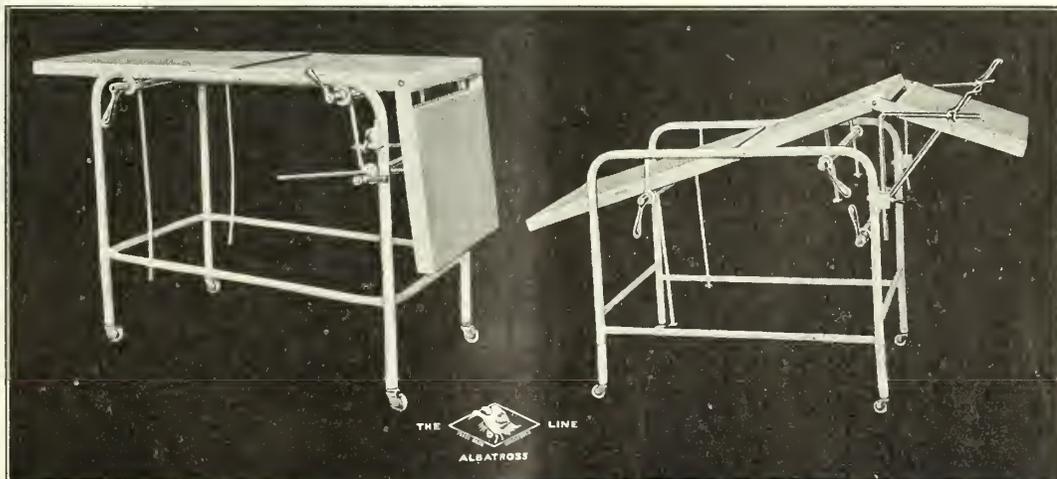
Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

HERE IS ONE OF THE ARTICLES

that can be bought now at a bargain. Many other articles in the ALBATROSS line can be obtained at greatly reduced prices.

DID YOU SEE OUR TWO PAGE AD. IN THE MAY NUMBER?



No. 143—ALBATROSS EXAMINING TABLE

Albatross Metal Furniture Company

PORTLAND - OREGON

The Storm Binder and Abdominal Supporter



✿
ORTHOPEDIC APPLIANCES

✿
FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco



Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of
ARTIFICIAL LIMBS
and
ORTHOPEDIC APPLIANCES
Crutches Sold or Rented Arch-Support Fitting a Specialty
Bonded Manufacturers for U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES
Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street
Between Post and Sutter Streets
SAN FRANCISCO

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco
Phones: Sutter 936-937

MANUFACTURERS
Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enamelled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400
SAN FRANCISCO

In Case of Hernia

Prescribe the

Benjamin Natural Support

A visit to the office of M. J. Benjamin will convince you that, where an operation is impracticable, there is only one other thing for hernia.

That is the Benjamin Natural Support Principle. Designed to hold the worst rupture securely, without pushing into muscle wall or impairing circulation. Made complete for each case to satisfy individual requirements.

Mr. Benjamin gives his personal attention to each case, assuring that hernia will be correctly held.

When you think of a support for any form of hernia (natural or post-operative)—think of

M. J. BENJAMIN

Suite 214 Douglas Bldg.

Third and Spring**Los Angeles**

Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES

1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.

Phone Franklin 4556

HERMANN BARTH**Architect**

PHELAN BUILDING

Specializing in Hospital Work

SAN FRANCISCO

Telephone Garfield 847

A larger
recognition
of the
individual
is accomplished
only by
specialization

*Originators**Improvers**Developers*

—successfully handling over
12,000 claims and suits in but
a single line of legal endeavor
in

*Twenty-three
Years of
Doing One
Thing Right*

The Medical Protective Co.

of

Fort Wayne, Indiana

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

AN ANNOUNCEMENT

The heavy demand for our Manufactured Garments (made-to-measure, and ready-to-wear), consisting of Doctors and Dentists' Smocks, Coats, Uniforms, Aprons, Caps and House Dresses, has compelled us to open our FOURTH STORE, which is located at 1835 MERCED ST., opposite HOTEL FRESNO, Fresno, California. We wish to state that we shall rigidly adhere to our POLICY OF QUALITY FIRST, both as to workmanship and the materials that we put into our garments.

Particular attention is given to meet the wants of the MEDICAL PROFESSION.

DOCTORS & NURSES OUTFITTING CO.

A. S. W. GRUNDY

Oakland San Francisco Fresno

Doctor:---

The science of collecting has been our study for twelve years, and there are few who have devoted more time, money and energy to their profession.



If we can be of service to you, mail us your statements of accounts; or, better still, call on us.

"WE GET THE COIN"—"WE PAY"

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.

Citizens National Bank Building, Los Angeles

Phone 60563

KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

C. & N. W. Railway Six miles north of Chicago

Build* and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. An adequate night nursing service maintained. Sound-proofed rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief of Staff

Consultation by appointment

All correspondence should be addressed to

KENILWORTH SANITARIUM
Kenilworth Illinois



SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed

SEND FOR CATALOGUE

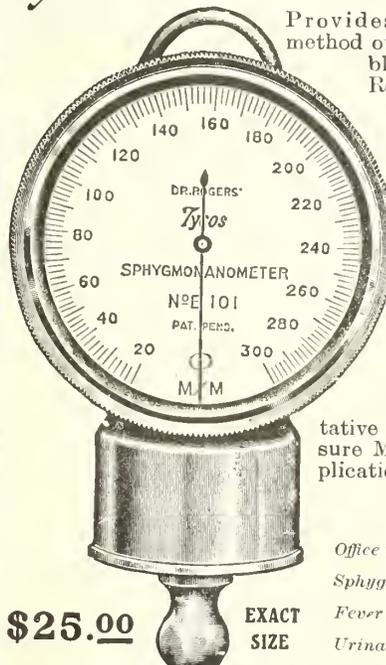
DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

Tycos SPHYGMOMANOMETER



Provides a simple method of determining blood pressure. Recognized as embodying every essential possible in a portable manometer. Made of non-corrosive materials. No friction. Stationary dial. Self verifying.

Tycos authoritative Blood Pressure Manual on application.

Office Type
Sphygmomanometer
Fever Thermometers
Urinary Glassware

\$25.00

EXACT
SIZE

Taylor Instrument Companies, Rochester, N. Y.

21-M



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY
Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco
Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco



Dickson-Bull Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue
Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Cystoscopy Urethroscopy
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

ACCEPTED

For Inclusion in "New and Non-Official
Remedies"

THE NEW GERMICIDE MERCUROCHROME

(Readily soluble in water in required
percentages.)

Mercurochrome has proved effective as a
germicide in the treatment of various in-
fections of the GENITO-URINARY TRACT
and in OPHTHALMOLOGY. It has also
been successfully used in OTITIS MEDIA,
in the treatment of DIPHTHERIA CAR-
RIERS and to some extent as a local germi-
cide in SURGERY.

Literature Upon Request

HYNSON, WESTCOTT & DUNNING
BALTIMORE

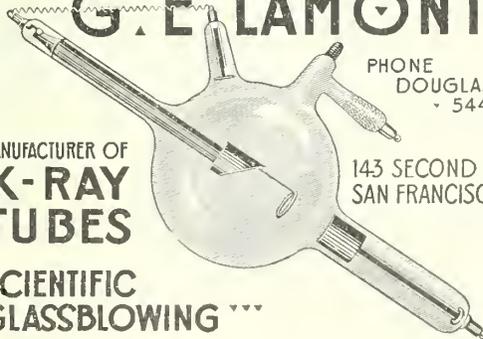
G. E. LAMONT

PHONE
DOUGLAS
5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

SCIENTIFIC
GLASSBLOWING



We Strive to Please Both
Physician and Patient

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 DEPENDABLE STORES 14
SAN FRANCISCO



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

PHONE MARKET 8048

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions, mental and nervous diseases.

This sanitarium is open to all reputable physicians. Sound-proof rooms. Hydropathic equipment.

The advice of the hospital staff is always at the disposal of the patients' physicians.

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

HALF COST

Physician's Office Equipment
For Sale

Vulcan Coil, Tube, etc., Harvard Chair,
Surgical Instrument Case (large), Card Index
Filing Case (for four series), Switch Board
(table form).

441 Fairmont Avenue, Oakland
Phone Oakland 1105

NOTICE—A licentiate of California to take
over the practice of a well-established
physician and surgeon for a period of
three months beginning June 10. Single
man preferred. Board and room furnished.
For particulars address A. F. B., care
California State Journal of Medicine.

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of
the previous calendar year, also 10 cents; two years
old, 20 cents; three years old, 25 cents; in other words,
5 cents additional is charged for each year preceding the
last calendar year.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. **Currency should
not be sent unless the letter is registered.** Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. **Manuscript should not be rolled.**

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

CONVENIENT

A Complete Food

Requires Neither Cooking
Nor the Addition of Milk

"Horlick's"

The Original Malted Milk

Obviates many of the difficulties that are
generally connected with the prescribed
feeding of infants.

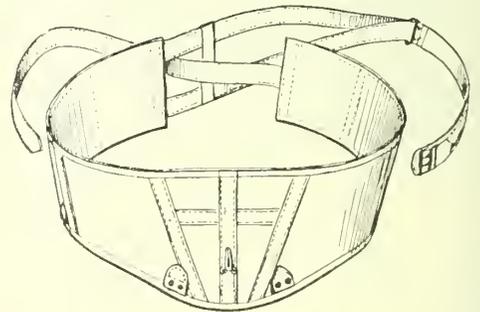
Easily prepared to meet the changing
needs of the individual infant.

Very reliable—prescribed by the medical
profession for over one-third of a century.

Avoid Imitations

Samples and Printed Matter Prepaid

HORLICK'S - - Racine, Wis.



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are
especially well cared for in a unique and efficient
manner. For twenty-one years we have made our
business a study, and by confining ourselves to
these specialties have developed methods that
assure relief to the patient and satisfaction to the
doctor.

Every physician should secure a copy of our
catalogue, which explains our business in detail.
We have the largest and best equipped plant on
the Pacific Coast and are the exclusive agents for
the famous Drs. Smith's "Honest John" Truss, the
only practical device for holding at the internal
ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
San Francisco

1522 Broadway
Oakland

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Fischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. **Associate Staff**—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. **Consulting Staff**—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. **Pathologist**—E. V. Knapp, M. D. **Roentgenologist**—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,
W. H. HILL, M. D., Resident Physician.

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

Sherman's polyvalent vaccines are dependable antigens

Local Agents:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY

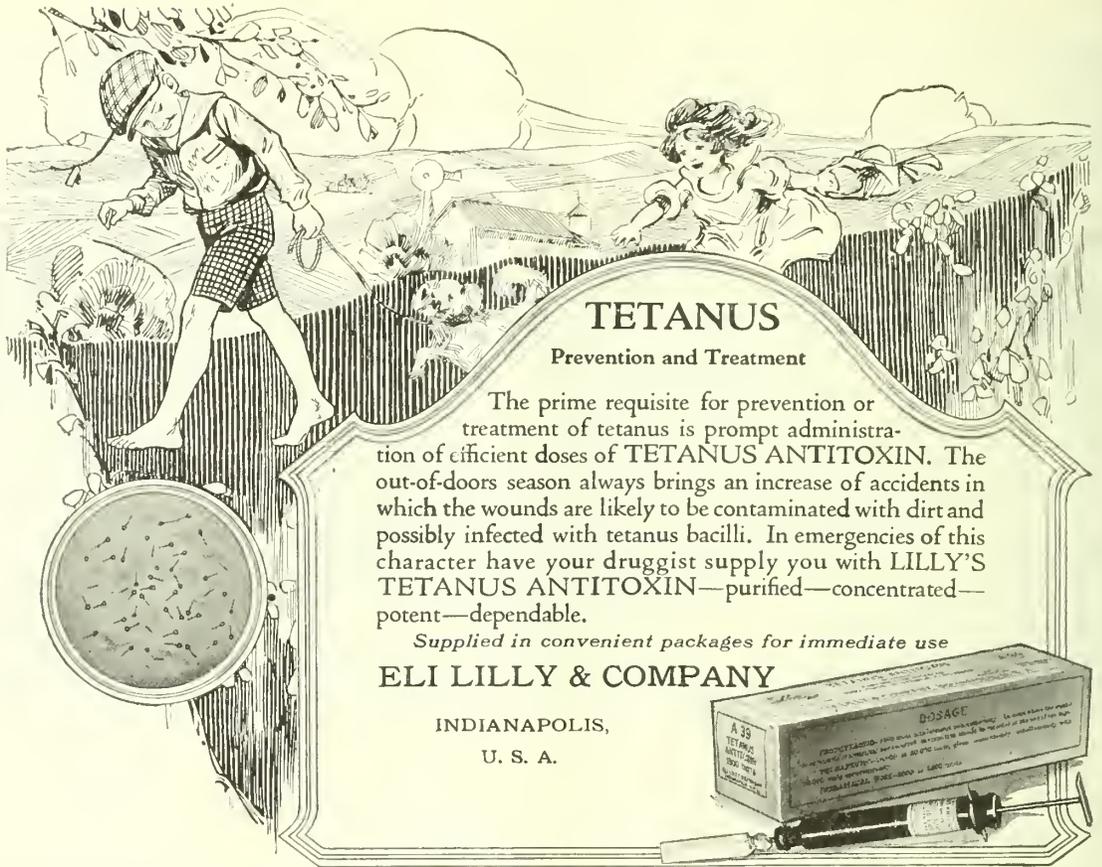
F. I. LACKENBACH

LABORATORIES OF

G. H. SHERMAN, M. D.

Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"



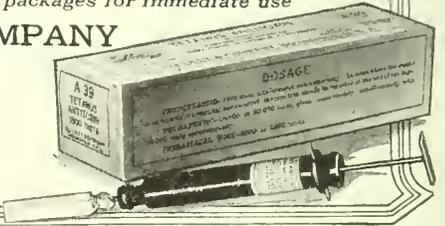
TETANUS
Prevention and Treatment

The prime requisite for prevention or treatment of tetanus is prompt administration of efficient doses of TETANUS ANTITOXIN. The out-of-doors season always brings an increase of accidents in which the wounds are likely to be contaminated with dirt and possibly infected with tetanus bacilli. In emergencies of this character have your druggist supply you with LILLY'S TETANUS ANTITOXIN—purified—concentrated—potent—dependable.

Supplied in convenient packages for immediate use

ELI LILLY & COMPANY

INDIANAPOLIS,
U. S. A.





Infant Feeding *Diet Materials*

HALF A MILLION APPETITES

Half a million baby appetites must be satisfied—
And many of these are "bottle" babies because they cannot have their own mother's milk.
Most babies are born healthy and would continue to be healthy if they could remain under the doctor's care.

MEAD'S DEXTRI-MALTOSE
puts infant feeding where it belongs—in the hands of the doctor.
OUR "SYSTEM" IS YOUR "SYSTEM"

THE MEAD JOHNSON POLICY
Mead's Infant Diet Materials are advertised only to the medical profession. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own prescription blank.

Interesting Literature. Samples also.

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.



Atophan

TRADE MARK

Has decidedly more prompt pain, inflammation and congestion relieving properties than the Salicylates, simple or complex.

Information, Literature and Ample Trial Quantity from

Besides showing a remarkable degree of freedom from heart-depressant, kidney irritant, constipating and cumulative by-effects.

Schering & Glatz, Inc.,
150 Maiden Lane, New York.



RHEUMATISM

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

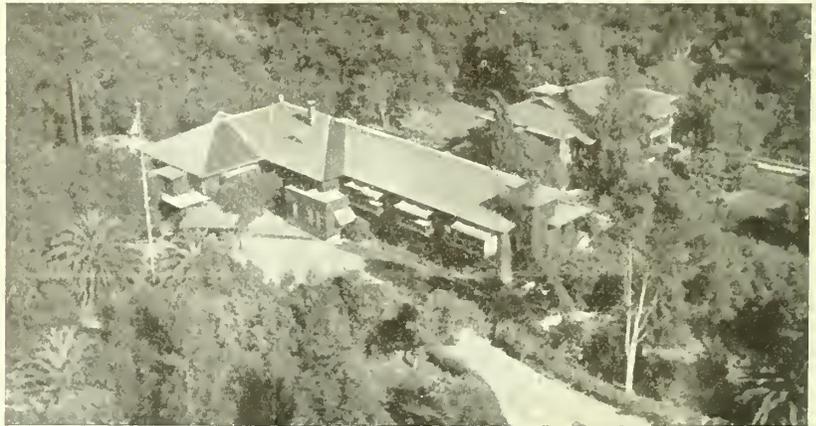
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.
Cuisine Excellent.
Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.
Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.
Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

FOR TUBERCULOSIS

BANNING

CALIFORNIA



DR. J. C. KING'S SANATORIUM

Many years of successful results.
 Altitude: 2500 feet. Dry climate.
 Trained nurses. Excellent food.
 Send for Circular.

ALLAN L. BRAMKAMP, A. B., M. D.

JOHN C. KING, M. D.

Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

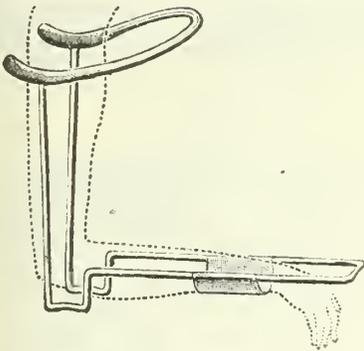
C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.



Lakeside 2808

P. L. ANSELL X-RAY LABORATORY

Thomson Building
 Oakland

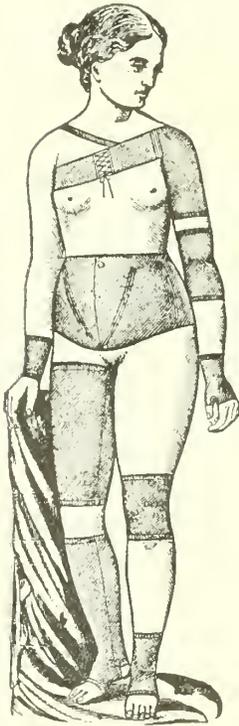
Widemann's Evaporated Goat Milk



Baby
 Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
 San Francisco, Cal.



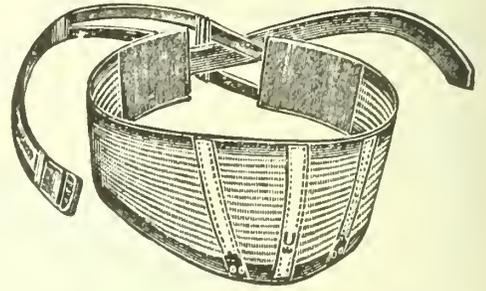
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS

TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DOCTORS' COLLECTIONS

Free Memberships.

Collections on Commission.
Protection Against Delinquents.
Engraved Membership Certificate.
Retention of Patronage.

Thousands are already members. Why not you? Universal endorsement. References, National Bank of Commerce, Bradstreets, or publishers of this Journal.

SEND FOR LIST BLANKS.

Physicians and Surgeons Adjusting Assn.

Railway Exchange Bldg., Desk 1

Kansas City, Mo.

(Publishers Adjusting Association, Inc., Owners Est. 1902)

The Laboratories of
REED & CARNRICK
Are Devoted to Making

Organic Physiological Products

Full particulars concerning these and answers to all queries will be gladly given. Please remember that in writing to **REED & CARNRICK** you will be answered by medical men thoroughly trained in hospital work and practice and not by theoretic laboratory workers.

REED & CARNRICK
42-44-46 Germania Avenue
Jersey City, N. J.

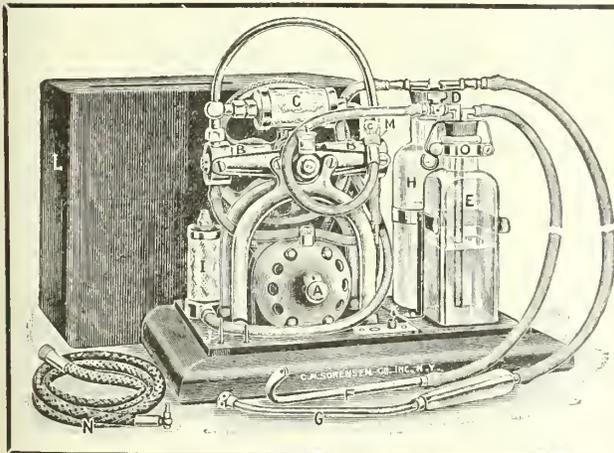
NEURITIS

is one of the many painful conditions amenable to benzyl benzoate medication; another fruitful field for "Benzylets"—conceded to be the best form for the tasteless, no-gastric-irritation administration of this safe non-narcotic analgesic-antispasmodic.

When you write to Baltimore for your sample please mention California State Journal of Medicine.

BENZYLETS

SHARP & DOHME of Baltimore



The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

For particulars write

Bischoff's Surgical House

Dealers in Physicians and Hospital Supplies

1702-6 Telegraph Ave.

Oakland, Cal.

MICROSCOPES

Bought
Sold
Exchanged
Repaired

W. O. HAMMER
35 Montgomery St.
San Francisco,
California
Phone Kearny 708

Thromboplastin, Squibb

is made in accordance with the direction of Dr. Alfred F. Hess, of the Laboratory of the New York City Department of Health. It contains kephalin, one of the active principles upon which the coagulating power of Thromboplastin depends. This kephalin is the lipid substance described by Hirschfelder. It is rendered aseptic by the addition of 0.3 per cent tricresol, and standardized for haemostatic power. *Thromboplastin, Squibb* is supplied in 20 cc. vials. Two preparations are available, one for local application and one for hypodermic use. Orders should specify clearly which preparation is desired. Price per vial, \$1.00. A date well within the limit of potency is stamped on each vial. It should be kept cool.

Leucocyte Extract, Squibb

Prepared from healthy leucocytes according to Hiss. Indicated in general acute systemic infections where bacteriological diagnosis is uncertain. Also used in conjunction with the specific serums and vaccines in the treatment of Erysipelas, Meningitis, Lobar Pneumonia, Septicemia, Pyemia and Furunculosis.

In 10 cc. vials at \$2.00.

Literature Upon Request

TELEGRAPH OR MAIL YOUR ORDERS TO

908 Butler Building **FRED I. LACKENBACH** San Francisco, Cal.

Telephone Sutter 3122 (Private Exchange)

Guarding Quality in the "Crushes"

OUR determination is that Ward's Orange-Crush, Lemon-Crush and Lime-Crush must *always* be of such high quality as to merit the confidence and recommendation of the physician.

All production in our plant is guided and guarded by trained chemists in charge of a splendidly-equipped Service Laboratory. This Laboratory co-operates with Orange-Crush bottlers throughout the country,

making frequent tests and analyses and helping in every way to

make sure that the "Crushes" are always up to par.

These delicious drinks are compounds of fruit oils and fruit juices pressed from oranges, lemons or limes. To these are added citric acid, pure granulated sugar, certified food color and carbonated water.

To those who seek reliable carbonated beverages we suggest the "Crushes." No curative properties are claimed. It is not claimed that Orange-Crush can replace orange juice in infant feeding. The "Crushes" are just pure, wholesome fruit-flavored drinks, cooling and refreshing.

The "Crushes" are guaranteed under all pure food laws, Federal and State. They are sold in bottles and at fountains in all principal towns and cities.

We welcome correspondence from physicians. All inquiries will be promptly answered.

Orange-Crush Company
Plant and Laboratories, Chicago
Research Laboratory Los Angeles





X-Rays and The General Practitioner

MOST of the instruments used in general practice have been devised by physicians and surgeons. X-ray apparatus, on the other hand, has been developed by physicists and engineers, in collaboration with the profession.

Perhaps for this reason the general practitioner, although fully realizing the powerful aid that the X-ray lends in diagnosis and therapeutics, nevertheless feels that he must be something of a physicist, something of an engineer, to apply the X-ray in his practice.

The truth is that with proper technical guidance any general practitioner can learn how to operate an X-ray apparatus.

The Victor X-Ray Corporation long ago adopted the policy of placing its technical facilities and wide experience at the disposal of physicians and surgeons. It will gladly send a technically informed representative to a practitioner who wishes to apply the X-ray in his own practice but who finds it difficult to decide upon the type of machine that should be adopted.

This is but part of Victor Service. After a Victor machine is installed the nearest Victor Service Station may be called upon when it needs attention. Compare this with the system which involves extensive correspondence with a distant factory, the sending of some local electrician, unfamiliar with X-ray apparatus, to make repairs, and perhaps the shipping of the entire machine to the factory after failure. The man sent by the nearest Victor Service Station is an expert. He is trained to locate the source of trouble quickly. Moreover, the physician who owns Victor equipment may always call upon the nearest Victor Service Station for mechanical and electrical guidance, so that he may be sure of his results.

Victor Service also includes the publication of a periodical called "Service Suggestions," in which X-ray progress is recorded. Although published primarily for the benefit of Victor clients it will be sent to physicians who wish to learn of the advances that are made from time to time in radiography. There is no charge for "Service Suggestions."

Victor X-Ray Corporation

General Offices and Factory

Jackson Blvd. at Robey St.

Chicago

Territorial Sales Distributors

San Francisco, Bush Electric Corporation, 334 Sutter Street

Los Angeles, Victor Electric Los Angeles, 930 Hill Street

HAY FEVER MEMORANDA

Series II.

Late Spring Type. Patients whose hay fever develops in the latter part of May, or during June, should be tested with the pollens of the chief grasses, such as orchard grass, timothy, red-top and certain early flowering weeds.

Late Summer Type. Patients whose hay fever develops in mid-August and continues until frost should be tested with the pollens of such weeds as ragweed and goldenrod, the related sunflower; also with the pollen of the one important late flowering grass, viz., corn, if exposed to same.

Arlco-Pollen Extracts

For Cutaneous Tests and Treatment cover early and late spring, also summer and autumn.

Literature and List of Pollens on Request.

THE ARLINGTON CHEMICAL CO.

YONKERS,
N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

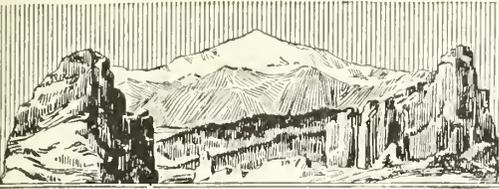
PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

NEW YORK Fifth Av. 442



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

| | | |
|---------------------------------------|-----------------------------|-----------------|
| 122 South Michigan Ave. CHICAGO | 50 Union Square NEW YORK | LONDON PARIS |
|---------------------------------------|-----------------------------|-----------------|

Home School for Nervous and Backward Children

Most approved methods of physical and mental development through motor activities and sense training. Outdoor study and play the entire year.

Beautiful estate devoted to the welfare and happiness of the children. Ideal home life.

THE CEDARS

ROSS, MARIN CO., CAL.

C. C. Myers, Principal.

QUALITY GARMENT SHOP

Manufacturers of

SURGEONS' GOWNS, DENTISTS'
SMOCKS, NURSES' UNIFORMS

511 Sutter St.

Near Powell

Phone Kearny 1271

1023 Fillmore St.

Near McAllister

Phone Market 8125

SAN FRANCISCO

The Modern Dressing Material

Trade-mark Copyright 1920

Marshalltown Laboratories

ADVANTAGES OVER OTHER MATERIALS

Saves you time in dressing—Soft, pliable and easy to handle.

Aids quick healing—NON-ADHERENT; no sticking or tearing when removed.

Eliminates pain—Makes changing of dressing easy.

Safe and Sure results—TRANSPARENT; progress watched through dressing.

Prepared in Perforated and Impervious Forms

Impervious Cellosilk: More satisfactory and less expensive than Oiled Silk and other materials previously used.

Excels for wet dressing coverings, impervious dressings of all kinds and constructing Non-Adherent drains.

"Standard" (single weight) \$1.25. "Standard Heavy" (double weight) \$1.75

Perforated Cellosilk: A professional improvement for dressing wounds requiring air and drainage. Excels for dressing skin grafts, ulcers and all granulating surfaces. "Standard Perforated" \$2.00.

Have Your Dealer

Send you a roll of both Perforated and Impervious Cellosilk which you will find constant use for. Rolls 9 in. x 12 ft. at above prices.

MARSHALLTOWN LABORATORIES

MARSHALLTOWN, IOWA



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
Member of the Federal Reserve System. Member of the Associated Savings Banks of San Francisco
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

DECEMBER 31, 1920

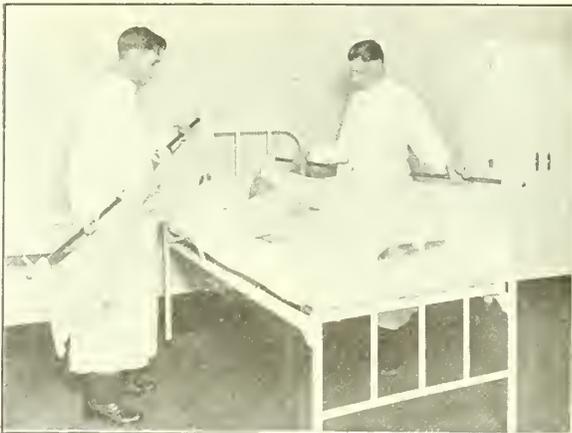
| | | | |
|----------------|------------------------------|-------------------------------|--------------|
| Assets | \$69,878,147.01 | Capital Actually Paid Up..... | 1,000,000.00 |
| Deposits | 66,338,147.01 | Reserve and Contingent Funds | 2,540,000.00 |
| | Employees' Pension Fund..... | | \$343,536.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.



Taking Stretcher from Beneath the Patient, Leaving Him Free Upon the Bed

With a GWIN-FLEX patients are placed on the bed or wheeled stretcher without disturbing their position. There is no strain or jar from lifting. Operations may be performed with the Gwin-Flex stretcher on the operating table, under the patient in readiness to lift him.

Noted surgeons regard this stretcher as a very necessary part of the operating room equipment. It insures them against the undoing of their skillful and delicate operations.

PRICE \$16.00

Gwin-Flex Stretcher Co.

660 O'Farrell Street San Francisco

ESTABLISHED for more than twelve years, it has been our constant aim to make this store more than a purely commercial organization.

We have developed an institution for the better service of doctors, nurses and hospitals. Let us co-operate with you.

- | | |
|-----------------------|-----------------------|
| Surgical Instruments | Hospital Equipment |
| Laboratory Supplies | Nurses' Supplies |
| Surgical Dressings | Gauze and Cotton |
| Steel Furniture | Invalid Appliances |
| Diagnostic Appliances | Medical Supplies |
| Elastic Supplies | Orthopedic Appliances |

*Sole San Francisco Distributors
Kny-Scheerer Hospital Equipment*

PERCY J. MEYER & CO.

379 Geary Street San Francisco

CALCREOSE

CALCREOSE IS A MIXTURE CONTAINING IN LOOSE CHEMICAL COMBINATION APPROXIMATELY EQUAL PARTS OF CREOSOTE AND LIME.

CALCREOSE HAS ALL OF THE PHARMACOLOGIC ACTIVITY OF CREOSOTE, BUT IS FREE FROM UNTOWARD EFFECTS ON THE GASTRO-INTESTINAL TRACT

CALCREOSE MAY BE TAKEN IN COMPARATIVELY LARGE DOSES —IN TABLET FORM OR IN SOLUTION.

LITERATURE AND SAMPLES ON REQUEST

THE MALTBIE CHEMICAL COMPANY

Newark, New Jersey

RADIUM

The Burnett Sanitarium Company of Fresno, California, is fully equipped with a large supply of radium to take care of all kinds of cases.

Emanation tubes will be sent on request of physicians at the rate of \$1.00 per millicurie. A description of the case should accompany the application for emanation tubes.

The medical profession is cordially invited to send their patients to the Burnett, resting assured that not only will their patients receive careful attention, but the physicians themselves will be treated in an ethical manner.

D. H. TROWBRIDGE, M. D.,

General Manager



Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
X-Ray and High Frequency Coils and Machines
Interrupterless X-Ray Transformers (Three Sizes)
Coolidge Tube Transformers and Controls
Electric Bakers (Limb and Body)
Ozone Generators—Single, Double and Quadruple
Electric Light Bath Cabinets with Thermo-Vacuum Space
Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and
Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for
price lists and descriptive literature

1921 Membership Roster

The June number of the JOURNAL will have the usual annual supplement containing the roster of members of the State Society. Any member noting any error in this roster is requested to communicate the fact to the Secretary's office.

Also any member failing to secure his copy of the supplement is requested to notify the office.



Put Yourself on the Payroll!

EVERY month you pay the butcher, the baker, and the surgical instrument maker. How much is there in it for you? Why not share in the profits which are made on the goods you must buy?

REID BROS., Inc., the largest hospital supply manufacturing company in America, is a co-operative organization belonging to hundreds of shareholders. You can put yourself on its payroll by investing as little as \$100.00. Dividends are paid every three months.

Write for particulars to

Secretary and Treasurer, Reid Bros., Inc.

91-99 Drumm Street

San Francisco, Cal.

Walters Surgical Company

"Service and Dependability"

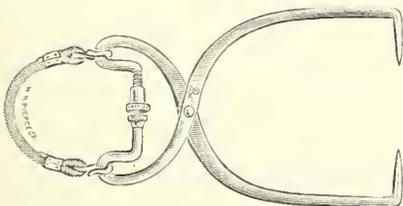
441 SUTTER STREET

Between Powell and Stockton Streets

Phone: Douglas 4017

**High Grade
Surgical Instruments
and
Hospital Supplies**

Trusses Abdominal Supporters
Elastic Hosiery
Orthopedic Appliances
Laboratory Apparatus, Stains



Edmonton Fracture Extension Tongs

AMERICAN

FORCEPS

Allis—Carmalt

Kelly—Oschner

BAUMANOMETER Sphygmomano Meter

BUCK'S Dental Films

CASTLE Office Sterilizers

ETHER Vapor and Vacuum Apparatus

LABORATORY ESSENTIALS

METZ, Arsphenamine and Neo

SHERMAN Bacterine Vaccine

Everything today

Pacific Surgical Mfg. Co.

320 W. Sixth Street

Main 2959

LOS ANGELES

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT ~ ACCURATE ~ DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *This should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diabetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JULY, 1921

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

TON MED

MAR 24 1924

LIBRARY

JULY CONTENTS

Editorials 261

President's Address: Coronado, May, 1921. By John C. Yates, M. D. 263

Minutes of the House of Delegates—Fiftieth Annual Session—of the Medical Society, State of California, Coronado, May, 1921 266

Report of Local Committee—San Diego 274

Original Articles:

Pernicious Anemia and Its Treatment. By Samuel H. Hurwitz, M. D. 275

Peripheral Nerve Surgery. By C. L. Tranter, M. D. 280

Amoebic Abscess of Liver with Pulmonary Sequelae. By Rexwald Brown, M. D. 282

Uteral Diverticula. By Drs. N. G. Hale and C. E. Von Geldern.. 284

One Hundred Consecutive Perineal Prostatectomies. By Arthur B. Cecil, M. D. 287

Fractured Skulls Seen in the San Francisco Emergency Hospitals. By Edmund Butler, M. D. 289

Congenital Pyloric Stenosis. By Alanson Weeks, M. D. 290

Surgical Results From An Economic Standpoint. By Gayle G. Moseley, M. D. 291

Chronic Dilatation of the Duodenum. By Harlan Shoemaker, M. D. 292

Acute Suppurative Thyroiditis. By P. K. Gilman, M. D. 294

Focal Infection. By F. F. Gundrum, M. D. 296

Book Reviews 296

County Societies:

Alameda 299

Los Angeles 299

Orange 299

Placer 299

San Joaquin 299

Department of Pharmacy and Chemistry. Edited by Felix Lengfeld, Ph. D. 300

University of California, Children's Department 301

Notices 301

Physiotherapists, California State Association 301

Healing Art, Certificate to Practice. 302

Anesthetists, Pacific Coast Association 302

Medical Corps of the Navy, Vacancies in the 302

Obituary—Wm. G. Cochran 302

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President H. G. BRAINERD, Los Angeles, President-Elect
 ALFRED C. REED, San Francisco, First Vice-Pres. JOSEPH CATTON, San Francisco, Second Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Editor and Secretary
 CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties.
 PAUL M. CARRINGTON, San Diego (Term expires 1924)

SECOND DISTRICT—Los Angeles, Santa Barbara, Ventura and Kern Counties.
 WM. H. KIGER, Los Angeles (Term expires 1922)

THIRD DISTRICT — San Luis Obispo and Monterey Counties.
 T. C. EDWARDS, Salinas (Term expires 1924)

FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.
 DWIGHT H. TROWBRIDGE, Fresno (Term expires 1924)

FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties.
 FRANK H. PATERSON, San Jose (Term expires 1923)

SIXTH DISTRICT—San Francisco County.
 C. G. KENYON, San Francisco, Chairman. (Term expires 1922)

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); Saxton T. Pope, San Francisco (term expires 1924); C. Van Zwalenburg, Riverside (term expires 1923).

SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties.
 EDW. N. EWER, Oakland (Term expires 1923)

EIGHTH DISTRICT—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.
 JAMES H. PARKINSON, Sacramento (Term expires 1922)

NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.
 JAMES H. McLEOD, Santa Rosa (Term expires 1923)

REID BROS., Inc.

MANUFACTURERS
IMPORTERS
EXPORTERS

Hospital and Surgical
Supplies
of every description

Large Stocks and Complete
Manufacturing Facilities

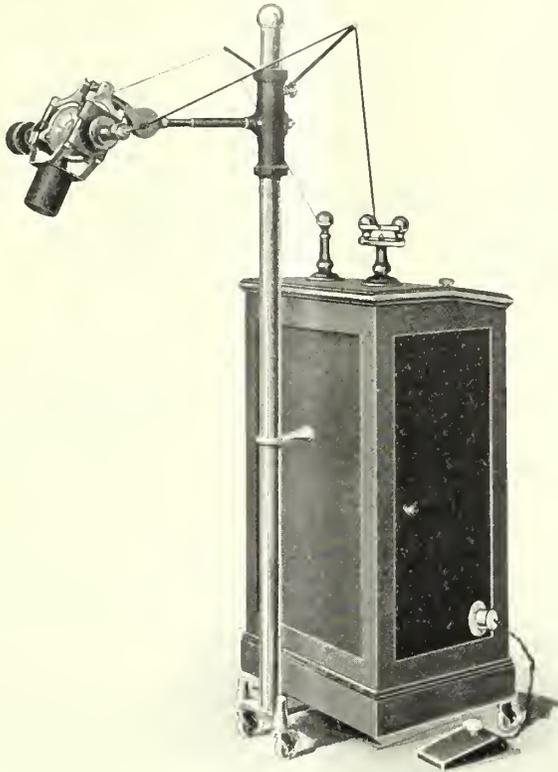
91 to 99 DRUMM ST. SAN FRANCISCO

BRANCHES

Seattle, Washington

Vancouver, Canada

Tokyo, Japan



VULCAN

AUTO X-RAY UNIT, De Luxe

(Coolidge Tube)

The "last word" in X-Ray apparatus, having an excess of power for any practical purpose in Radiography or Fluoroscopy, combining every desirable feature of others with special, exclusive features.

Sold at a moderate price—no transcontinental freight added. Factory service within reach of your office telephone—not 2000 miles away.

The reputation of Vulcan products is too well established to admit of question. Ten years on the market without a dissatisfied patron. References everywhere.

Literature and full information on request.

Vulcan Electric Company

"THE WESTERN HOUSE FOR THE WESTERN DOCTOR"

Makers of X-Ray and H. F. Treatment Apparatus

239-41 So. Los Angeles St.

Los Angeles, California

MEET US AT CORONADO

Hay Fever Prophylaxis

THE UNIFORM STABILITY AND ANTIGENIC
ACTIVITY OF THE PRODUCT EMPLOYED
ARE OF UTMOST IMPORTANCE

Pollen Antigen *Lederle*

IS SO PREPARED THAT ITS ANTIGENIC
ACTIVITY IS ACCURATELY DETERMINED
AND SO PRESERVED THAT ITS STABILITY
IS ASSURED.

Lederle Antitoxin Laboratories

511 FIFTH AVENUE

COR. OF FORTY-THIRD ST.

NEW YORK CITY

B & B Surgical Dressings

Absorbent Cotton
Gauze Bandages
Adhesive Tape
Surgeon's Soap
Surgical Lubricant
Formaldehyde Fumigators
Etc. Etc.

We Insure Sterility

B & B Sterile Surgical Dressings are sterilized, of course, in the making.

But we go further—we sterilize again after wrapping. This is done by modern apparatus, with live steam following a vacuum.

Then we make constant incubator tests, using center fibers, to prove the products sterile to the core.

This applies to B & B Cotton and Gauze in every form and package.

These products come to you utterly sterile if the package is intact.

That is one example of the B & B super-standards. In some way they bring you unique excellence in every B & B product.

All are produced by masters, in a model laboratory. Each is the result of 27 years of aiming at perfection.

Try B & B Adhesive—one fine example of what we have done.

BAUER & BLACK

Chicago New York Toronto

Makers of Sterile Surgical Dressings and Allied Products



Truly germicidal. Phenol coefficient of the 1% soap is 51.98. One cake represents the germicidal power of six pounds of carbolic acid.

Sent Free for a Test

We will send a tube of B & B Surgical Lubricant to any surgeon on request.

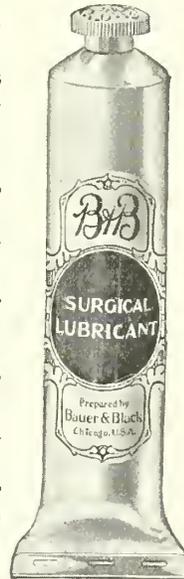
You will find it the ideal lubricant. Perfectly sterile, for we sterilize after sealing. Mildly antiseptic, without being irritating.

Water-soluble, so one may use it freely on instruments, gloves and hands. Non-corrosive and non-staining. Plain water removes it from clothing and bedding.

It contains no grease to soil.

Besides being a lubricant it is also an emollient. It is an excellent application for burns, skin eruptions, ivy poisoning, chapped hands, etc.

Send the coupon for this example of B & B efficiency.



BAUER & BLACK

25th and Dearborn Sts., Chicago

I am not acquainted with B & B Surgical Lubricant. Please mail me, without charge, a full-size tube to try.

.....

.....

.....

MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH—That vaccination against all three infections does definitely protect against all three.
- FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count

Write for Therapeutic Index Price List

AREQUIPA "PLACE OF REST"

AN OUT-DOOR SANATORIUM FOR THE CARE OF TUBERCULOUS WORKING GIRLS. A SCHOOL FOR TEACHING THEM HOW TO LIVE, AND AN EXPERIMENT STATION IN WORK-THERAPY.

The work is conducted at cost. Rates, \$10 a week (\$14 for bed patients).

Includes medical and nursing care, board and laundry.

Medical Director, Dr. Philip King Brown

APPLY OFFICE

AREQUIPA

401 Medical Bldg., San Francisco

Phone Franklin 844

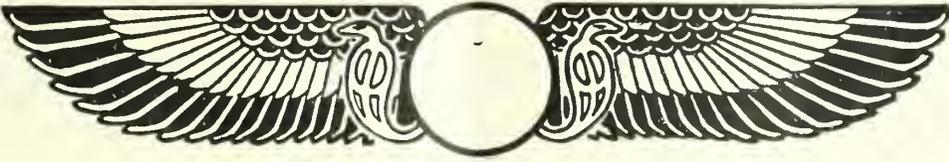
DEPENDABLE PRESCRIPTION SERVICE

*Shumate's
Prescription Pharmacies*

- | | |
|-------------------------------------|------------------------------------|
| 1 Cor. Sutter and Devisadero. | 8 Valencia and 16th Streets. |
| 2 Cor. Haight and Masonic Ave. | 9 California St. and 23rd Ave. |
| 3 Cor. Sacramento and Presidio Ave. | 10 Cor. Bush and Hyde Sts. |
| 4 84 Post Street East of Kearny. | 11 S. P. Bldg., Market Near Ferry. |
| 5 Cor. Carl and Cole Streets. | 12 Clement St. and 2nd Ave. |
| 6 Cor. Union and Steiner Streets. | 13 Polk and Washington Sts. |
| 7 Cor. Powell and Sutter Sts. | 14 Ninth Ave and Judah St. |

PHYSICIANS' PRESCRIPTIONS ACCURATELY DISPENSED

SAN FRANCISCO



MALNUTRITION

Tissue waste due to malnourishment, intolerance to food, impairment of the digestive functions and anorexia, high lights in the clinical picture of malnutrition, are amenable to diet and diet regulation particularly when "Ovaltine" is included in the dietary scheme.

For "Ovaltine" permits of protein liberality without impairment of digestion. Its proteins include leucosin and bynedestin of Winter Malted Barley and the phosphoproteins and albumins of Milk and Eggs, unimpaired by process of manufacture, easy of digestion and assimilation.

The enzymes of "Ovaltine" aid powerfully the digestive function by their hydrolytic action upon the starchy carbohydrates and their power to modify the curd of cow's milk, the digestibility of which is increased twofold by the use of "Ovaltine."

Then, too, where there is food intolerance or anorexia clinical evidence shows that "Ovaltine" is well borne and that it appeals to the appetite even of the most fastidious.

OVALTINE

Sold in 8 oz., 17 oz. and 5 lb. tins by druggists

SAMPLES AND LITERATURE MAILED TO PHYSICIANS UPON SIGNED REQUEST

THE WANDER COMPANY

37 SOUTH WABASH AVENUE, CHICAGO, ILL.

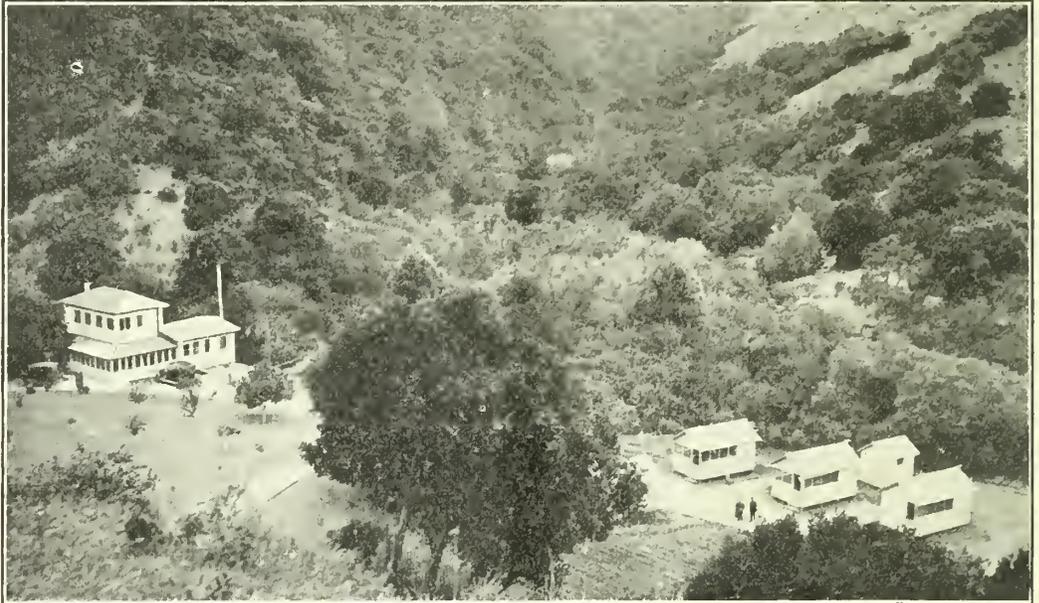
Works: Villa Park, Ill.



CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*



SOME OF THE COTTAGES

□
*Rates
Reasonable*
□
Climate Ideal



The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

NORMAL TISSUE EXTRACTS

(Archibald)

LEUCOCYtic EXTRACT

In acute infections or toxemias.

For the purpose of raising resistance and stimulating defensive and offensive elements.

SPLEEN EXTRACT

In chronic infections, Malaria, Tuberculosis and anemias. Increases both red and white cells and hemoglobin.

LYMPH GLAND EXTRACT

In subacute or chronic conditions in cases where the removal of dense or partially organized inflammatory exudates are a prominent factor.

LYMPHOID EXTRACT

Indicated pre-operatively and in the treatment of all types of hemorrhage by increasing the number and activity of the blood platelets.

NORMAL TISSUE EXTRACTS are for subcutaneous injections.

2 c. c.—6 Ampules \$2.50

Vitalait Laboratory of California

San Francisco - - Pasadena

FOR SALE

At a Sacrifice Price

Established and Completely
Equipped

PATHOLOGICAL LABORATORY

Located in San Francisco.

For Full Particulars Address Dr. X.,
Care This Journal.



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.

HYDROPATHIC
DEPARTMENT



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of HYDROTHERAPY,—coupled where indicated with NAUHEIM,—RADIO ACTIVE CLAY,—CALCIC CARBONATE,—MAGNESIA CARBONATE and SULPHATE BATHS,—RADIUM EMANATORIUM. Modern modifications of ZANDER APPARATUS, MASSAGE and MANIPULATIONS. ELECTRO-THERAPY, THERMO-PENETRATION, HELIO-THERAPY, PROCTOCLYSIS, CORRECTIVE GYMNASTICS and the application of tabulated PHYSICAL EFFICIENCY TESTS

We are well equipped with modern mechanical devices of scientifically proven efficiency for the RELIEF of SUFFERING. We maintain a most comprehensive SERVICE ORGANIZATION of TRAINED ATTENDANTS rendering PERSONALIZED SERVICE to every patient.

Our Institute is specially equipped for the relief of persons suffering from CHRONIC DISORDERS. We are also prepared to take care of POST-OPERATIVE CONVALESCENTS in need of RECONSTRUCTION and "CONDITIONING" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

DOCTOR:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern PHYSIO-THERAPY. Our twenty years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

Care—Courtesy—Privacy—Comfort.
Best references. Inspection invited.

G. H. Richardson, M. D.,
Medical Director.
N. A. Karpaty, B. Sc.,
Technical Superintendent.
Mrs. N. A. Karpaty,
In Charge of Women's Dept.

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES
133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

The Seymour Sanatorium

Banning, California

SITUATED in the broad San Gorgonio pass at an elevation of 2,400 feet, with inspiring views of Mt. Grayback and old San Jacinto on either hand, near, yet not upon the desert, the SEYMOUR SANATORIUM is exceptionally well located both from a climatic and environmental standpoint.

Here nature gives her best, and all modern means are used to assist and reinforce her efforts.

Careful study of each case, strict individualization in treatment and painstaking attention to detail, assure to the patient the attainment of the maximum benefit from the sanatorium sojourn.

The rates are very moderate

CHARLES E. ATKINSON, M. D., Medical Director



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Ætna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Ætna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Ætna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Ætna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Ætna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1921 - - - - \$204,839,890.53

If you are not acquainted with the Ætna Agent in your town write direct to

J. R. MOLONY, Manager, Western Branch
Department "C," 333 Pine Street, San Francisco, Calif.

ÆTNA LIFE INSURANCE COMPANY

AFFILIATED WITH

ÆTNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

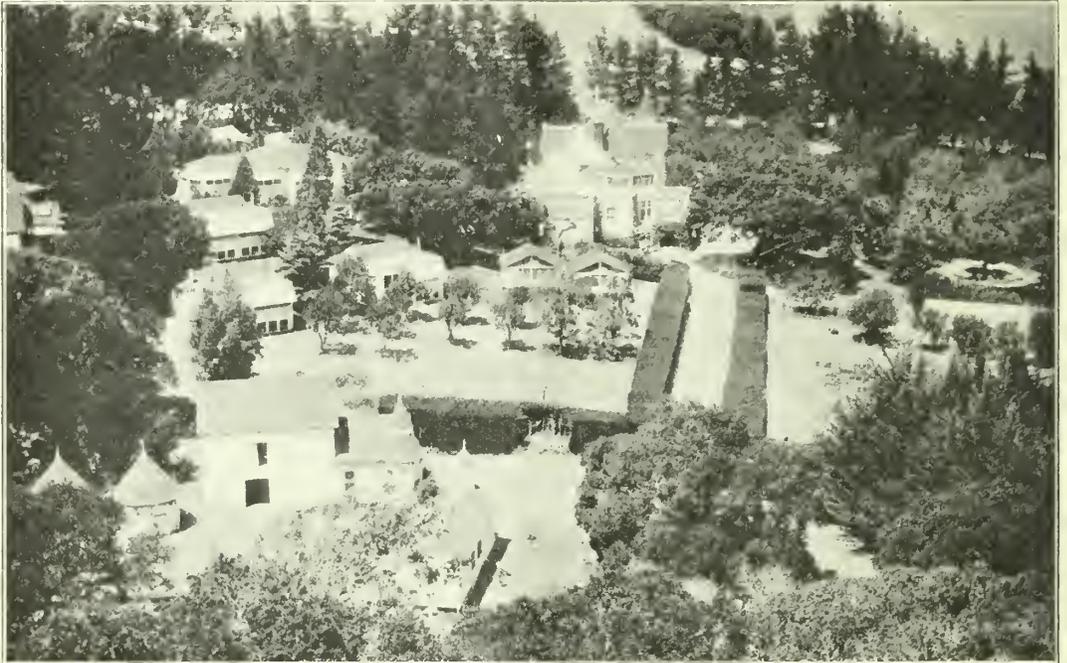
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

ANNOUNCING

The Formation Of

The Santa Barbara Clinic

For The Practice Of

Group Medicine

ASSOCIATES

REXWALD BROWN, M. D., Surgery
 BENJAMIN BAKEWELL, M. D., Obstetrics
 HILMAR O. KOEFOD, M. D., Medicine
 HARRY E. HENDERSON, M. D., Medicine
 H. J. PROFANT, M. D., Eye, Ear, Nose, Throat
 GEORGE F. FARMAN, M. D., Urology
 HUGH F. FREIDELL, M. D., Gastro-Enterology

A Building Has Been
 Erected For the Purpose

Complete Clinical and
 Laboratory Facilities—
 Competent Technicians

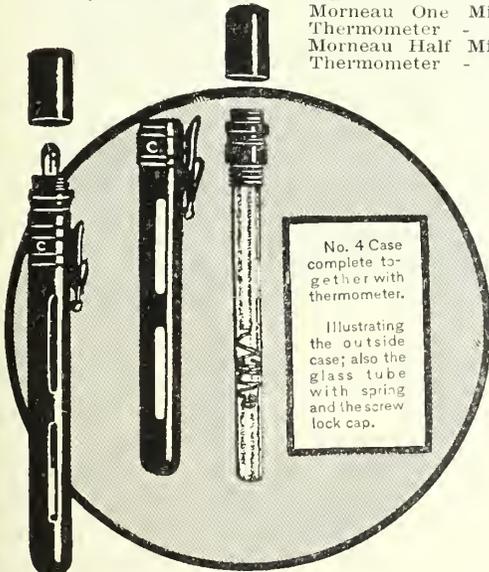
1421 STATE STREET

SANTA BARBARA, CALIFORNIA

Morneau — a Dependable Case
for Thermometers

Always Sterile
 Always at Hand

No. 4. Case only, with
 Pocket Clip - \$2.50
 No. 5. Case only,
 with Gold Chain and
 Pin - - - \$3.50
 Morneau One Minute
 Thermometer - \$1.50
 Morneau Half Minute
 Thermometer - \$1.50



You can DEPEND upon the Morneau Sanitary Thermometer Case keeping your thermometer sterile at all times. The reason is simple: it was built for that purpose.

The case is of ebonized rubber provided with a glass tube which holds the sterilizing solution. After each use the thermometer is bathed in this solution and freed of all disease organisms.

A spiral spring is inserted in the tube permitting the use of any standard thermometer. We advise using the Morneau Thermometers because their markings are on the inside of the glass.

The Morneau resembles a fountain pen in size and is carried just as conveniently. It is leak-proof. Easy to refill. If your dealer cannot supply you, write us.

Morneau
 SANITARY
 THERMOMETER CASE
 COMPANY
 APPLETON — WISCONSIN

**The
Management
of an
Infant's Diet**

DIARRHEA OF INFANTS

Three recommendations are made—

- Stop at once the giving of milk.
- Thoroughly clean out the intestinal tract.
- Give nourishment composed of food elements capable of being absorbed with minimum digestive effort.

A diet that meets the condition is prepared as follows:

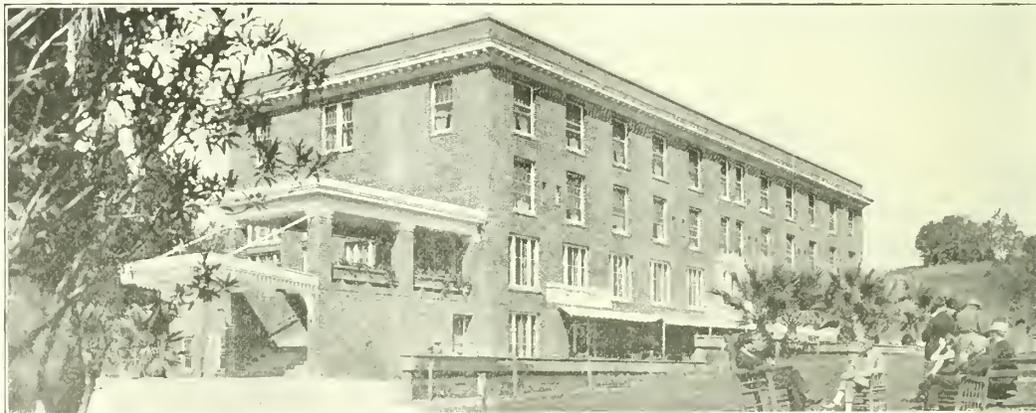
| | | |
|------------------------------------|-----------|-------------------------------|
| Mellin's Food | | 4 level tablespoonfuls |
| Water (boiled, then cooled) | | 16 fluidounces |

Feed small amounts at frequent intervals

It is further suggested:—As soon as the stools lessen in number and improve in character, gradually build up the diet by substituting one ounce of skimmed milk for one ounce of water until the amount of skimmed milk is equal to the quantity of milk usually given for the age of the infant; also that no milk fat be given until the baby has completely recovered.

MELLIN'S FOOD COMPANY, BOSTON, MASS.

BYRON HOT SPRINGS CALIFORNIA



“THE HOME OF HEALTH”

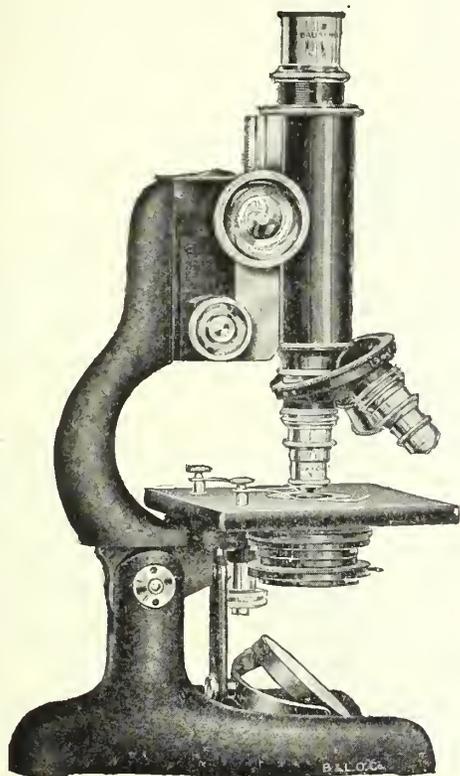
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto from San Francisco

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

**BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA**



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

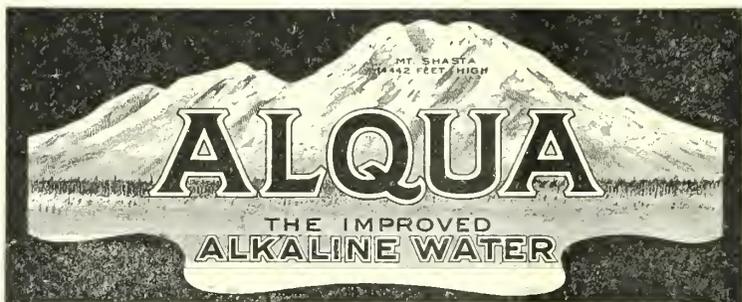
DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the direction of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLETS AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO-OAKLAND-SACRAMENTO-LOS ANGELES-CAL. U.S.A.

At All Druggists

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general
nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

Grageroff & Papazoni

Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

Readily Soluble
Practically Free from Toxicity
Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you communicate with

H. A. METZ LABORATORIES, Inc.
One-Twenty-Two Hudson Street, New York.



A Standby

TWENTY years ago Parke, Davis & Co. introduced to the medical profession the active principle of the suprarenal gland—Adrenalin.

Little was known at that time concerning its physiologic action and therapeutic application. Today, after years of laboratory research and clinical experimentation, Adrenalin holds a foremost place among the standbys of the materia medica.

For the relief of the paroxysm of asthma, for the control of hemorrhage, and in the treatment of shock and collapse, Adrenalin is the first thought of the therapist. In organotherapy it has certain special indications, and as a synergist to local anesthetics it has done much toward bringing local anesthesia technic to its present high degree of perfection.

Parke, Davis & Company

DETROIT

Quartz Mercury Vapor Ultra Violet Light

GENERATORS AND EQUIPMENT

QUARTZ COMPRESSION LENSES

QUARTZ LOCALIZING RODS

Applicators, Specula, Endoscopes, Proctoscopes, Laryngeal, Pharyngeal
Nasal, Urethral, Vaginal, Rectal, Uterine Lenses and Radiating
Tubes for the application of ultra-violet emanations.

WAGNER QUARTZ VAGINAL AND RECTAL SPECULA

The Pambrun Deep Penetration Filter System

TECHNIQUE — INSTRUCTION — INSTALLATION — MAINTENANCE

KROMAYER UNIT — Water Cooled

ALPINE SUN UNIT — Air Cooled

L. B. PAMBRUN

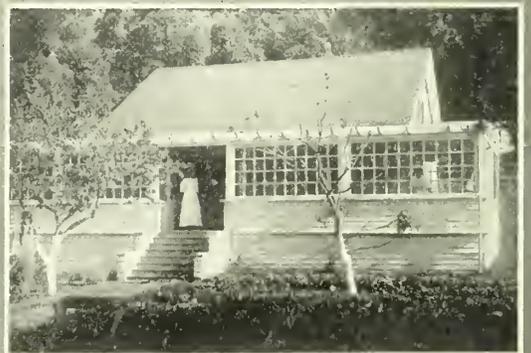


Phelan Building
SAN FRANCISCO
Phone SUTTER 2322

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

A BANKING SERVICE FOR THE MEDICAL PROFESSION

An Investment Department that can help you solve problems in buying and selling securities.

A Savings Department for your savings and surplus funds.

A Commercial Department for your checking account.

A Trust Department,—the largest in the West,—that can act as executor, trustee or custodian of your properties.

Safe Deposit Vaults for the safekeeping of your valuables.

THIS IS THE COMPLETE BANKING SERVICE THAT WE OFFER YOU.

UNION TRUST COMPANY

COMMERCIAL
SAVINGS

OF SAN FRANCISCO
MARKET ST. AND GRANT AVE.

SAFE DEPOSIT
TRUST

FOR SALE—Instruments customarily used in general practice at greatly reduced prices. For particulars write Mrs. J. B. Woodworth, 1024 Campus Ave., Redlands, California.

WANTED—Nurse who has done routine operating room work and stenography. Hospital in morning, office in afternoon. Board and room. Dr. E. Dozier, Redding, Cal.

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

For Immediate Delivery

PITUITOL

Under this distinctive trade name we offer a solution of the POSTERIOR PITUITARY LOBE, of greater concentration than the U. S. P. requirement.

PITUITOL—*Obstetrical*

Approximately 3 times U. S. P. strength
in ½ CC and 1CC Ampoules

PITUITOL—*Surgical*

Approximately 6 times U. S. P. strength
in 1 CC Ampoules

Our Pituitary Extracts are approved by the Council on Pharmacy and Chemistry.
Physiologically standardized, dated, sterile, positive action.

“Specify WILSON’S”

Prepared from Abattoir to finished Package by



4213 South Western Boulevard, Chicago, Ill.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments.

Southern California

DR. I. B. LINEBARGER

1000 Lyon St., Los Angeles

Phones: Main 5790-Auto 10155

Northern California

D. BLAINE MORGAN

84 Second St., San Francisco

Phone: Kearny 1416

Stock carried in both cities.

May we place you on our mailing list for “The Autacoid and Suture,” our house journal devoted to Glandular Therapy?

Write for Catalog

NOTICE

Best results from use of BIOLOGICAL PRODUCTS are only possible through proper refrigeration. We guarantee proper temperature and care at all times. We invite inspection of our SPECIAL BIOLOGICAL REFRIGERATOR.

Distributors of SQUIBB’S BIOLOGICAL PRODUCTS

BUTLER BROTHERS’ PHARMACY

Professional Pharmacists

Suite 807-9-11 Flood Bldg., Opp. Elevator

Powell and Market Streets, San Francisco, Cal.

Phone: Douglas 163

Private Exchange

TRAINER-PARSONS OPTICAL CO.

Dispensing Opticians

186 GEARY STREET - - - SAN FRANCISCO

Near Stockton. Opp. City of Paris

Telephone Kearny 2767

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

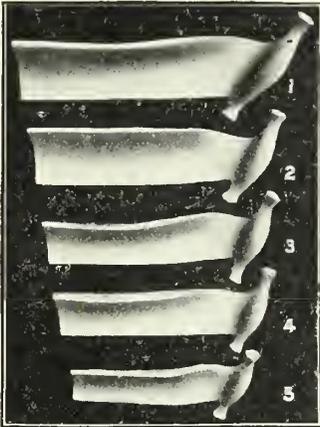
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





**Walker's Colles
Fracture Splints
NOW IN STOCK**

**TRAVERS
Surgical Co.**

SAN FRANCISCO, CAL.

Phone Sutter 4651 372 Sutter Street

**SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES**

**Our Stock is
Complete**

- CYSTOSCOPES AND ACCESSORIES
- MICROSCOPES AND SUPPLIES
- SPLINTS OF ALL KINDS
- LUER SYRINGES AND NEEDLES
- PHYSICIAN'S OFFICE FURNITURE
- ELECTRIC DIAGNOSTIC INSTRUMENTS

*If It Is Surgical
We Have It*

**Treat Hay Fever
With Suprarenalin**



SUPRARENALIN is the remedy in Hay Fever. It may be administered locally, internally or Hypodermatically.

Locally—Solution and ointment are applied to affected parts.

Internally—Solution should be given, so that the patient will get from 1/70 to 1/10 of a grain; the dose repeated in from 10 minutes to two hours, according to effects.

(Let the patient hold Suprarenalin in the mouth for a while, as the best systemic effects are got by absorption through the membranes.)

Hypodermatically—Suprarenalin Solution is injected into the arm or neck.

Suprarenalin is recommended in Hay Fever in various forms. Herewith are suggestions made by men of authority.

One recommends using solutions of varying strengths from 1:10,000 to 1:1000 made up with normal salt solution. To sustain the relief to some extent, he suggests spraying over the constricted mucous membrane a 5 grain to the ounce solution of menthol in alcohol, benzoinol or other light oil.

Another uses Suprarenalin Solution in strengths varying from 1:10,000 to 1:1000, applying these locally to the conjunctiva and nasal membranes. He also suggests the following combinations which are snuffed into the nasal passages or insufflated by means of a nasal blower.

1. Suprarenalin 1 part
Zinc Stearate (Comp).....100 parts
Heavy Magnesium Carbonate.....900 parts
Mix. Triturate well.
2. Suprarenalin 1 part
Zinc Oxide100 parts
Bismuth subcarbonate.....400 parts
Mix. Triturate well.
3. Suprarenalin gland substance..... 1 part
Zinc Stearate..... 20 parts
Zinc Oxide..... 80 parts
Mix. Triturate well.
4. Suprarenalin 1 part
Bismuth subcarbonate300 parts
Zinc Oxide300 parts
Zinc Stearate200 parts
Mix. Triturate well.

A prominent nose and throat specialist recommends:

| | | | |
|------------------------------|-------|------|------|
| | grm. | | |
| Cocainae hydrochloridi... | 15 or | grs. | iiss |
| Sodii boratis..... | 30 or | grs. | v- |
| Suprarenalin Sol. (1:1000) 4 | or | 5 | i |
| Glycerine 2 | or | 5 | ss- |
| Aqua Camphorae ad.....30 | | | 5 i |

M. Sig. Use as a spray to the nose four or five times daily or oftener if needed.

Suprarenalin Solution 1:1000 (Armour) is stable, uniform, non-irritating and is free from chemical preservatives. Literature to Physicians.

ARMOUR AND COMPANY
CHICAGO



The Most Ethical
 Prescription Pharmacy
 in
 San Francisco

Accuracy, Purity, Quality
 and Immediate Service

**Broemmell's Prescription
 Pharmacy**

California and Steiner Sts. West 558-559
 and Manufacturing Chemists
 San Francisco, California

SAVE MONEY ON

YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
 Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
 FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-ograpb metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
 NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

ALTA SANATORIUM

For the treatment of Pulmonary Tuberculosis
ALTA (PLACER CO.) CALIFORNIA

Invigorating climate. Beautiful scenery
 Strict medical attention. Moderate terms

Apply for Particulars

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of
FINE SHOES

Sole Agent for
DR. A. REED'S CUSHION SHOE

Fine Grades in Correct Styles and
 Orthopedic Shapes

228 POWELL STREET
 Near Geary San Francisco, Cal.

Physiotherapy

DR. A. GOTTLIEB

1661 Sacramento Street
 San Francisco, Calif.
 Phone Prospect 593

A theoretical and practical course in thermo- helio- electro- and mechanotherapy for regular graduates in medicine and for physiotherapists will begin August 1, 1921, and continue eight weeks—three nights a week, between 7:30 and 9:00 P. M. For out-of-town applicants special hours can be arranged. Registration must be made in advance because the class is limited.

FEE FOR THE COURSE IS \$75.00

POTTENGER SANATORIUM

For Diseases of the Lungs and Throat

MONROVIA,
CALIFORNIA



A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

HERE IS ONE OF THE ARTICLES

that can be bought now at a bargain. Many other articles in the ALBATROSS line can be obtained at greatly reduced prices.

DID YOU SEE OUR TWO PAGE AD. IN THE MAY NUMBER?



No. 143—ALBATROSS EXAMINING TABLE

Albatross Metal Furniture Company

PORTLAND - OREGON

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

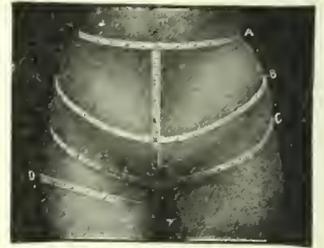


Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of
Crutches Sold or Rented
Arch-Support Fitting a Specialty
ARTIFICIAL LIMBS and ORTHOPEDIC APPLIANCES
Bonded Manufacturers for U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments ORTHOPEDIC APPLIANCES

Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street

Between Post and Sutter Streets
SAN FRANCISCO

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco

Phones: Sutter 936-937

MANUFACTURERS

Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enameled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO

Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400

SAN FRANCISCO

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabil-
izer and combination fluoroscopic and radio-
graphic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB

REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

WANTED—By competent nurse a position
in physician's or dentist's office. Ref-
erences furnished. Phone Fillmore 3084,
or address Miss M, care State Journal
of Medicine, 930 Butler Bldg., San
Francisco.

Doctor:---

The science of collecting has been our study for twelve years, and there are few who
have devoted more time, money and energy to their profession.

If we can be of service to you, mail us your statements of accounts; or, better
still, call on us.

"WE GET THE COIN"—"WE PAY"

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.

Citizens National Bank Building, Los Angeles

Phone 60563



KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

On N. W. Railway Six miles north of Chicago
with the latest equipment for the treatment of
nervous and mental diseases. Approved diag-
nostic and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with special ventilation. Day and
appointments. Bath rooms with suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief of Staff

Consultation by appointment

All correspondence should be addressed to

KENILWORTH SANITARIUM

Kenilworth Illinois



SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

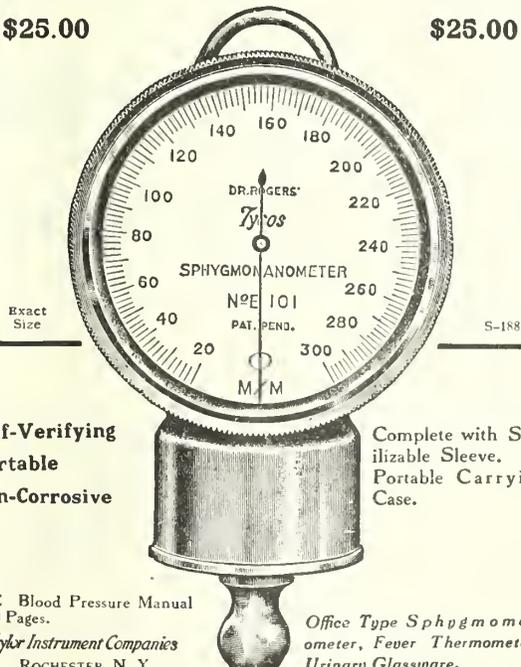
OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

Tycos Sphygmomanometer

\$25.00

\$25.00



Self-Verifying
Portable
Non-Corrosive

Complete with Sterilizable Sleeve. In Portable Carrying Case.

FREE Blood Pressure Manual
—40 Pages.

Taylor Instrument Companies
ROCHESTER, N. Y.

Office Type Sphygmomanometer, Fever Thermometers, Urinary Glassware.



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
E. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK
X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY
Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco
Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

Dickson-Bull
Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue
Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Cystoscopy **Urethroscopy**
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

"Summer Diarrhea"

INFANTILE

Clinical Reports
of its
Successful Treatment
with

Bacillus Lactis Bulgaricus

As Presented In

Bulgara Tablets

H. W. & D.

Worthy of Investigation

Reprints, Bacteriologic Endorsements, and
Other Information Upon Request

Hynson, Westcott & Dunning

Pharmaceutical Laboratory

BALTIMORE - - - MARYLAND

G. E. LAMONT

PHONE
DOUGLAS
- 5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING *****



CORONA

The Personal Writing Machine
DOCTORS!

Save money and
avoid mistakes by
typing your own
bills, case records,
prescriptions, manu-
scripts and corre-
spondence.

\$50 WITH CASE



Corona Typewriter Co., Inc.

Phone
Sutter 1538

546 MARKET ST.
San Francisco



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. R. E. BERING, Medical Director

PHONE MARKET 8048

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.

The advice of the hospital staff is always at the
disposal of the patients' physicians.

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

HELIOS SUN CURE
SANITARIUM
SYSTEM ROLLIER

SAN RAFAEL, Marin County, Calif.

TELEPHONE S. R. 519

HELIO THERAPY or treatment by scientific application of Sun Rays is recognized by leading surgeons as an efficient method of treating Bone and Joint Tuberculosis, Anemia and kindred diseases. Results, even in severe Hip and Spine cases, have been most gratifying. We will gladly co-operate in cases not yielding to ordinary methods.

For rates and particulars please apply

Charles L. Freytag, M. D.,

MEDICAL DIRECTOR

Schroth Building, San Francisco, Cal.
Telephone Garfield 148

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$1.00; Canadian, \$1.50.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 10 cents; of
the previous calendar year, also 10 cents; two years
old, 20 cents; three years old, 25 cents; in other words,
5 cents additional is charged for each year preceding the
last calendar year.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. Currency should
not be sent unless the letter is registered. Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

CONVENIENT

A Complete Food

Requires Neither Cooking
Nor the Addition of Milk

"Horlick's"

The Original Malted Milk

Obviates many of the difficulties that are
generally connected with the prescribed
feeding of infants.

Easily prepared to meet the changing
needs of the individual infant.

Very reliable—prescribed by the medical
profession for over one-third of a century.

Avoid Imitations

Samples and Printed Matter Prepaid

HORLICK'S - Racine, Wis.

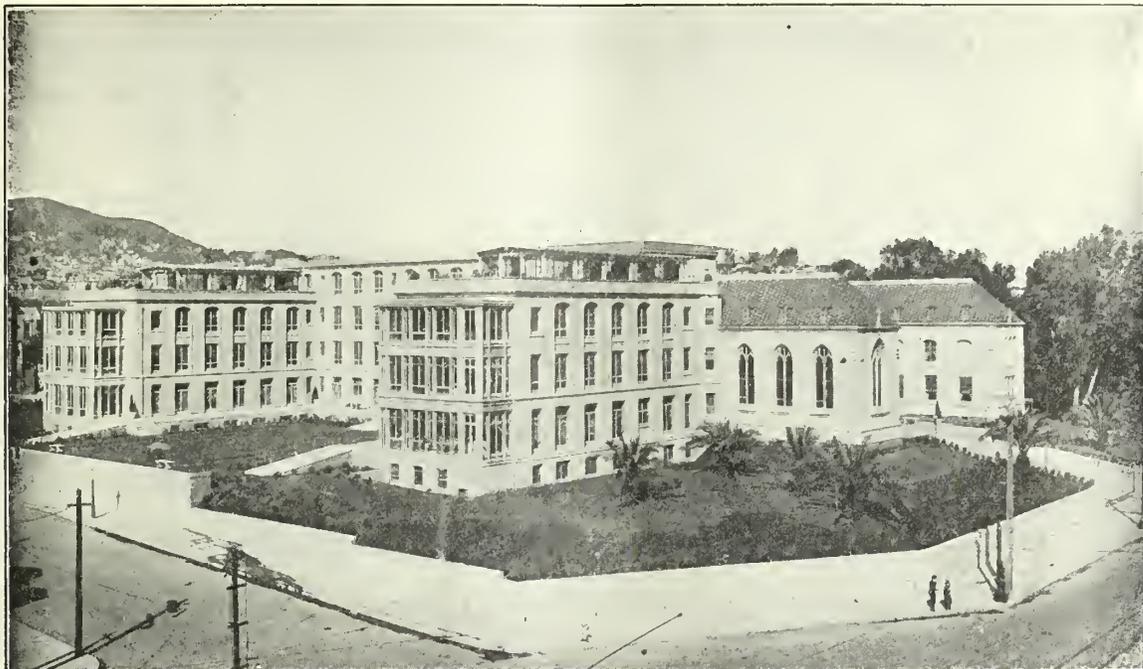
WM. H. WEEKS

Architect

75 POST
STREET

SAN
FRANCISCO

Largest Architectural Organization in
the West Specializing in Hospitals
and Public Buildings

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. Associate Staff—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. Consulting Staff—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. Pathologist—E. V. Knapp, M. D. Roentgenologist—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President

WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,

W. H. HILL, M. D., Resident Physician.

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

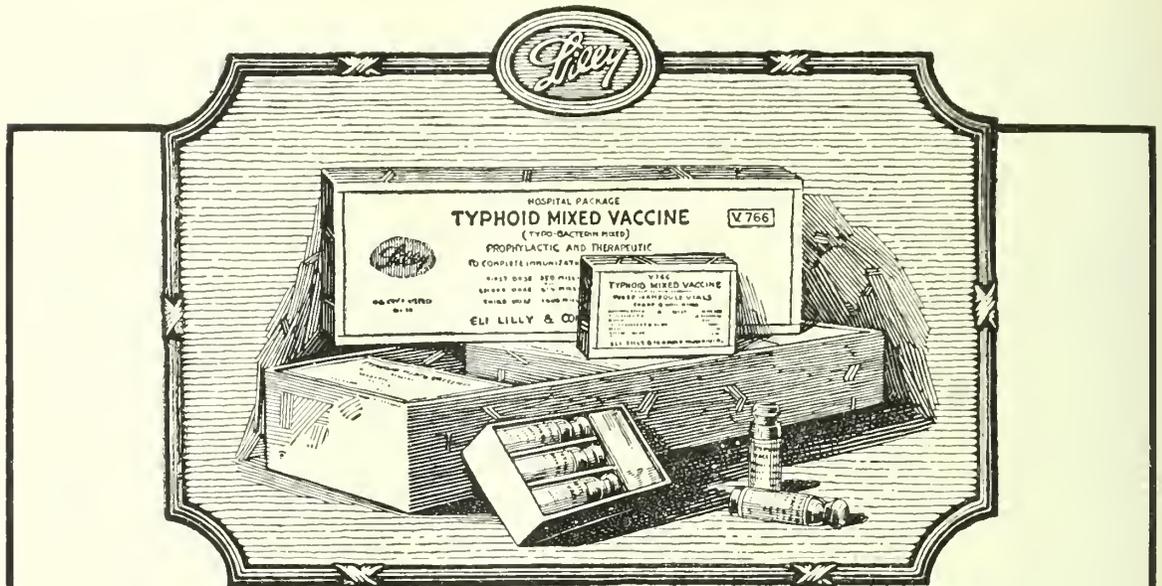
Sherman's polyvalent vaccines are dependable antigens

Local Agents:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY
F. I. LACKENBACH

LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"



Now Is the Time to Immunize Your Patients

The season of *Vacation Typhoid* will soon be with us. Physicians should urge vaccination against typhoid *now*. Vaccination is simple and safe. Its effectiveness is unquestioned. It should be advocated generally as a protective measure.

Specify "Lilly" Typhoid and Typhoid Mixed Vaccines. They are potent and reliable. Supplied through the drug trade in ampoule vials and syringe packages to meet all requirements.

SEND FOR FURTHER INFORMATION

ELI LILLY & COMPANY

Indianapolis, U. S. A.

Infant Feeding
Diet Materials

**CHOOSE THE BOTTLE BABY'S FOOD CAREFULLY
AND IT WILL BE
MEAD'S DEXTRI-MALTOSE, COW'S MILK AND WATER**

You would not send your patient to a drug store to ask the druggist to mix up "something for rheumatism," would you?

YOU WOULD WRITE A PRESCRIPTION

Consider the Baby. Infant Feeding means an **INDIVIDUAL** formula too. The physician's prescription for the right proportions of **MEAD'S DEXTRI-MALTOSE, Cow's Milk and Water**, gives gratifying results.

Literature and Formulas Sent to Physicians Only

THE MEAD JOHNSON POLICY
Mead's Infant Diet Materials are advertised only to the medical profession. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own prescription blank.

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.

Atophan

TRADE MARK

Has finally demonstrated the fallacy of the so-called uric acid solvent therapy (lithia, etc.) and made unnecessary the employment of Colchicum with its always to be feared deleterious effects on heart and intestines.

Information, Literature and Ample Trial Quantity from



Accomplishes a definite scientifically and clinically established, physiologic stimulation of the uric acid excretion. Performed innocuously and controllable to a nicety by dosage and by urine and blood tests.

SCHERING & GLATZ, INC.
150 Maiden Lane, New York

GOUT

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

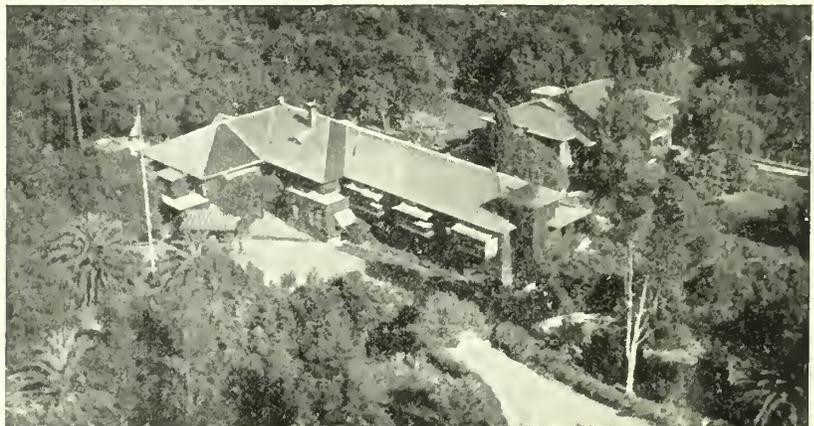
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.

Cuisine Excellent.

Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.

Write for beautiful illustrated booklet.

Phone Fair Oaks 901

Dairy and Poultry Plant.

Rooms With or Without Baths.

Private Bungalows With Sleeping Porches.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.

Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

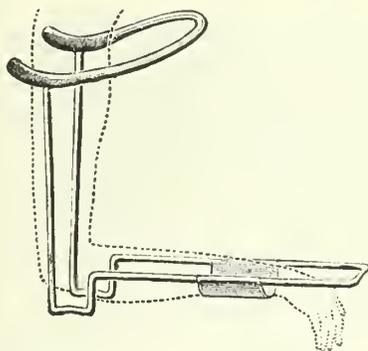
(THE BANNING SANATORIUM)

Banning (Riverside County) California

This well known institution (for the treatment of tuberculosis of the throat and chest) has recently been rebuilt and enlarged. The City of Banning (suffering from phthisiophobia) passed a "zoning" ordinance that forced abandonment of the former site of this sanatorium. A new site was purchased. An injunction was sought to prevent the use of the new site for sanatorium purposes. A temporary injunction was granted but, at the final hearing, this injunction was dissolved and the right to build and maintain the sanatorium was established. Many of the most prominent physicians in the state contributed testimony that enabled us to win the suit. During the progress of these suits the institution found it difficult to provide for patients demanding admission. Now, however, in its new quarters, it is prepared to accept all who apply. To physicians who are unfamiliar with our work we will gladly furnish references to other physicians (in almost every town in California) who have had patients or relatives in this institution. A circular describing conditions and containing rates will be mailed upon request. Address

DRS. KING and BRAMKAMP.

BANNING, CALIFORNIA.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL X-RAY LABORATORY

Thomson Building
Oakland

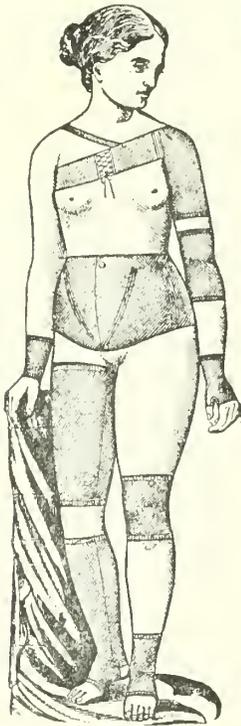
Widemann's Evaporated Goat Milk



Baby
Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
San Francisco, Cal.



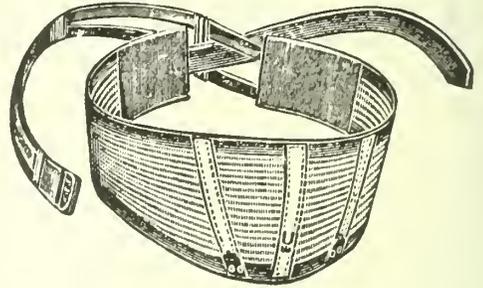
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS

TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DR. HARRY SPIRO

Practice Limited To

CARDIO-VASCULAR DISEASES

300 Coleson Building

212 Stockton Street - San Francisco

Phone Garfield 22

FRESNO BIOLOGICAL DEPOT

412 Bank of Italy Bldg.

Fresno, California

Phone 1434

Night 3083-W

San Joaquin Valley Distributors

Cutter's Biologics

Metz Products. Steripules

Travers Surgical Instruments

Office and Hospital Equipment

MICROSCOPES

Bought
Sold
Exchanged
Repaired

W. O. HAMMER
35 Montgomery St.
San Francisco,
California
Phone Kearny 708

In place of Opium

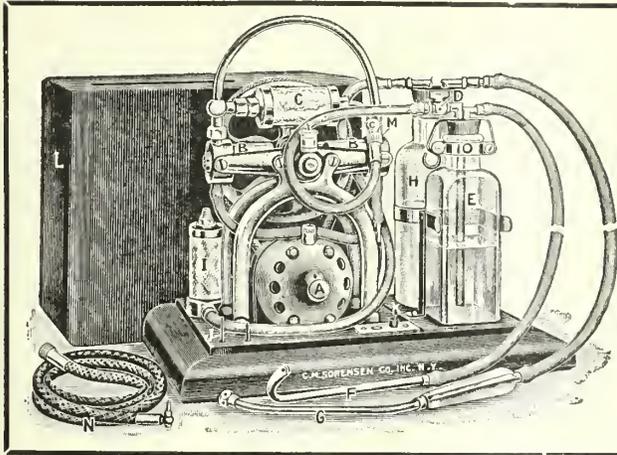
in true asthma, dysmenorrhea, gall-stone and other colics, hiccough, whooping cough, neuritis, post-partum pains—the therapeutic field is widening logically.

BENZYLETS!

The no-habit, non-toxic, non-narcotic analgesic-antispasmodic; tasteless, no gastric irritation; boxes of 24 globules of the pure drug ethically labelled at your favorite pharmacy.

BENZYLETS!!

SHARP & DOHME



The Yankauer Combination Pressure and Suction Outfit

is small and compact, but very efficient. It enables operator to administer ether vapor and draw blood and secretion through tube into vacuum bottle. Especially designed for tonsil and adenoid operations. Also can be used for spraying or nebulizing.

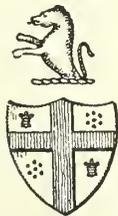
For particulars write

Bischoff's Surgical House

Dealers in Physicians and Hospital Supplies

1702-6 Telegraph Ave.

Oakland, Cal.



SPECIALIZING IN
OCULISTS' PRESCRIPTIONS
SINCE 1909

John J. Wooster Co
Opticians

234 Stockton St.

At Union Square



HOSPITAL FOR CHILDREN AND TRAINING SCHOOL FOR NURSES

A general hospital of 275 beds for women and children. Thirty beds for maternity patients in a separate building, newly equipped.

Complete services of all kinds for women and children. Infant feeding a specialty.

House staff consists of three resident physicians and eight internes.

Accredited by the Council on Medical Education and Hospitals of the American Medical Association.

Institutional member of League for the Conservation of Public Health.

The oldest school of nursing in the West.

Director of Hospital
Dr. Wm. E. Musgrave
Medical Superintendent
Dr. Edna L. Barney
Assistant Superintendent
Mrs. Hulda N. Fleming
Superintendent of Nurses
Miss Ada Boye, R.N.
3700 California Street
San Francisco



Guarding Quality in the "Crushes"

OUR determination is that Ward's Orange-Crush, Lemon-Crush and Lime-Crush must *always* be of such high quality as to merit the confidence and recommendation of the physician.

All production in our plant is guided and guarded by trained chemists in charge of a splendidly-equipped Service Laboratory. This Laboratory co-operates with Orange-Crush bottlers throughout the country,

making frequent tests and analyses and helping in every way to

make sure that the "Crushes" are always up to par.

These delicious drinks are compounds of fruit oils and fruit juices pressed from oranges, lemons or limes. To these are added citric acid, pure granulated sugar, certified food color and carbonated water.

To those who seek reliable carbonated beverages we suggest the "Crushes." No curative properties are claimed. It is not claimed that Orange-Crush can replace orange juice in infant feeding. The "Crushes" are just pure, wholesome fruit-flavored drinks, cooling and refreshing.

The "Crushes" are guaranteed under all pure food laws, Federal and State. They are sold in bottles and at fountains in all principal towns and cities.

We welcome correspondence from physicians. All inquiries will be promptly answered.

Orange-Crush Company
Plant and Laboratories, Chicago
Research Laboratory Los Angeles





RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M.D.
Medical Director

HAY FEVER MEMORANDA

Series II.

Late Spring Type. Patients whose hay fever develops in the latter part of May, or during June, should be tested with the pollens of the chief grasses, such as orchard grass, timothy, red-top and certain early flowering weeds.

Late Summer Type. Patients whose hay fever develops in mid-August and continues until frost should be tested with the pollens of such weeds as ragweed and goldenrod, the related sunflower; also with the pollen of the one important late flowering grass, viz., corn, if exposed to same.

Arlco-Pollen Extracts

For Cutaneous Tests and Treatment cover early and late spring, also summer and autumn.

Literature and List of Pollens on Request.

THE ARLINGTON CHEMICAL CO.

**YONKERS,
N. Y.**

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques

for superficial conditions.

Tube and needle applicators

for deep therapy

Apparatus for radium emanation

installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practicable.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.
PITTSBURGH, PA.

BOSTON
Little Building

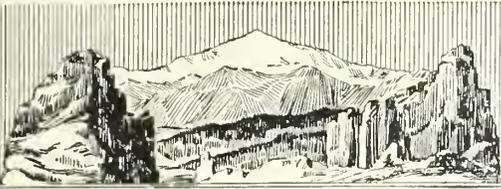
CHICAGO

Marshall Field Annex Building

SAN FRANCISCO

Flood Building

Astor 100 Bldg. **NEW YORK** Fifth Av. & 42 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

122 South Michigan Ave. CHICAGO
50 Union Square NEW YORK
LONDON PARIS

Home School for Nervous and Backward Children

Most approved methods of physical and mental development through motor activities and sense training. Outdoor study and play the entire year.

Beautiful estate devoted to the welfare and happiness of the children. Ideal home life.

THE CEDARS

ROSS, MARIN CO., CAL.

C. C. Myers, Principal.

QUALITY GARMENT SHOP

We manufacture and make

SURGEONS' GOWNS, DENTISTS'
SMOCKS, NURSES' UNIFORMS

511 Sutter St.
Near Powell

Phone Kearny 1271

1023 Fillmore St.
Near McAllister

Phone Market 8125

SAN FRANCISCO

The Modern Dressing Material

Cellosilk

Trade-mark Copyright 1920

Marshalltown Laboratories

ADVANTAGES OVER OTHER MATERIALS

- Saves you time in dressing**—Soft, pliable and easy to handle.
- Aids quick healing**—NON-ADHERENT; no sticking or tearing when removed.
- Eliminates pain**—Makes changing of dressing easy.
- Safe and Sure results**—TRANSPARENT; progress watched through dressing.

Prepared in Perforated and Impervious Forms

- Impervious Cellosilk:** More satisfactory and less expensive than Oiled Silk and other materials previously used. Excels for wet dressing coverings, impervious dressings of all kinds and constructing Non-Adherent drains. "Standard" (single weight) \$1.25. "Standard Heavy" (double weight) \$1.75
- Perforated Cellosilk:** A professional improvement for dressing wounds requiring air and drainage. Excels for dressing skin grafts, ulcers and all granulating surfaces. "Standard Perforated" \$2.00.

Have Your Dealer

Send you a roll of both Perforated and Impervious Cellosilk which you will find constant use for. Rolls 9 in. x 12 ft. at above prices.

MARSHALLTOWN LABORATORIES

MARSHALLTOWN, IOWA



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. **Jr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.**

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
Member of the Federal Reserve System. Member of the Associated Savings Banks of San Francisco
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

DECEMBER 31, 1920

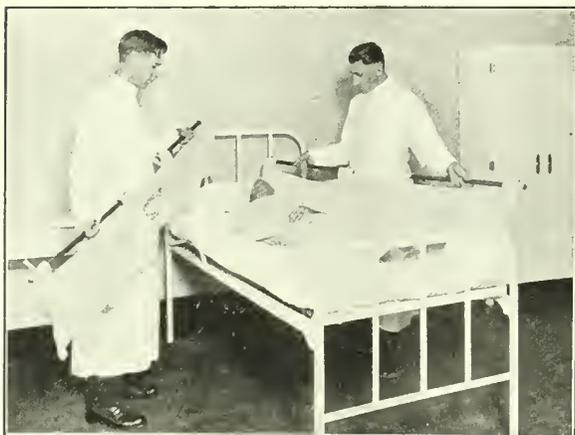
| | | | |
|----------------|------------------------------|-------------------------------|--------------|
| Assets | \$69,878,147.01 | Capital Actually Paid Up..... | 1,000,000.00 |
| Deposits | 66,338,147.01 | Reserve and Contingent Funds | 2,540,000.00 |
| | Employees' Pension Fund..... | | \$343,536.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.



Taking Stretcher from Beneath the Patient. Leaving Him Free Upon the Bed

With a GWIN-FLEX patients are placed on the bed or wheeled stretcher without disturbing their position. There is no strain or jar from lifting. Operations may be performed with the Gwin-Flex stretcher on the operating table, under the patient in readiness to lift him.

Noted surgeons regard this stretcher as a very necessary part of the operating room equipment. It insures them against the undoing of their skillful and delicate operations.

PRICE \$16.00

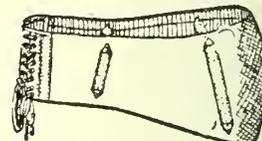
Gwin-Flex Stretcher Co.

660 O'Farrell Street San Francisco

PERCY J. MEYER & CO.

379 Geary St., San Francisco

*Surgical Instruments,
Hospital Supplies
Established 1908*



Preferred attention to the fitting of Prescriptions for Elastic Hosiery, Abdominal Belts, Maternity or Surgical Corsets and Post-Operative Bandages

*Service by mail
Lady Attendant*

CALCREOSE

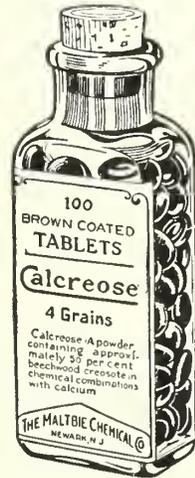
INTESTINAL INFECTIONS

CALCREOSE is an ideal intestinal antiseptic. It is useful in cases of intestinal sepsis, either primary or secondary.

CREOSOTE is one of the few drugs which appear to have a just claim to be useful as intestinal antiseptics, but it impairs the appetite and disturbs digestion, besides causing gastric distress.

CALCREOSE is free from these objections, even when taken in comparatively large doses—as high as 160 grains per day—for long periods of time.

Write for literature and samples



THE MALTBIE CHEMICAL COMPANY, Newark, N. J.

RADIUM

The Burnett Sanitarium Company of Fresno, California, is fully equipped with a large supply of radium to take care of all kinds of cases.

Emanation tubes will be sent on request of physicians at the rate of \$1.00 per millicurie. A description of the case should accompany the application for emanation tubes.

The medical profession is cordially invited to send their patients to the Burnett, resting assured that not only will their patients receive careful attention, but the physicians themselves will be treated in an ethical manner.

D. H. TROWBRIDGE, M. D.,
General Manager



Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
X-Ray and High Frequency Coils and Machines
Interrupterless X-Ray Transformers (Three Sizes)
Coolidge Tube Transformers and Controls
Electric Bakers (Limb and Body)
Ozone Generators—Single, Double and Quadruple
Electric Light Bath Cabinets with Thermo-Vacuum Space
Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and
Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for
price lists and descriptive literature

1921 Membership Roster

The June number of the JOURNAL contained the usual annual supplement of the roster of members of the State Society. Any member noting any error in this roster is requested to communicate the fact to the Secretary's office.

Also any member failing to secure his copy of the supplement is requested to notify the office.

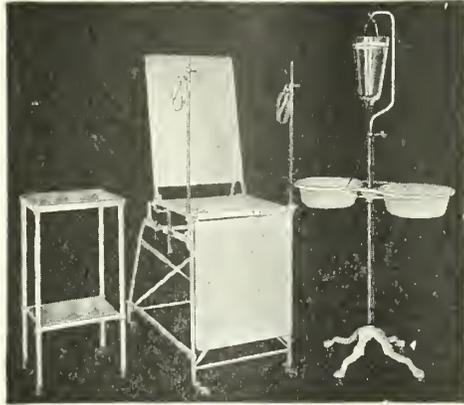




A.M.A. Inst. Cabinet

Strongly made, cleanly designed, with five adjustable glass shelves. Steel sides, plate glass door, utility steel shelf below. Height, 67 in.; width, 21 in.; depth, 15 in.

6CJ944 Cabinet. \$65.00



Economy Three Piece Outfit

This desirable outfit is well suited for general office practice and emergency work. It consists of a U. S. Army model examining and operating table, a combination immersion bowl and irrigator stand, and a very useful instrument table. Operating table and instrument stand are mobile, mounted on ball-bearing casters. Made throughout from heavy sheet steel, tubes and angles, finished in clean, washable white enamel.

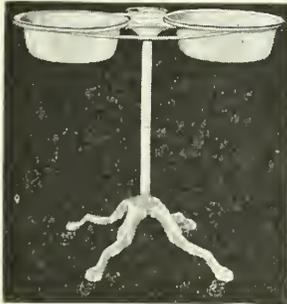
6CJ751 Three Piece Office Outfit. \$45.00



Railway Surgeon's Stand

Has 9 glass stoppered bottles enclosed on top with railing. Irrigator with rod and swinging bowl add to its convenience. Below is large compartment, 20x16x12 inches, for pus basins, dressings, etc. Size top, 16x20.

6CJ1015 Surg. Stand. \$20.00



Immersion Bowl Stand

A sturdy, well balanced stand. Complete with two 13-inch, white enamel, porcelain finished steel bowls.

6CJ904 Immers'n Bowl St'd. \$12.50

Steel Furniture for the Modern and Progressive Physician

Investing in modern steel office equipment is like investing in the best gold bonds—it pays dividends.

It's easy to work with modern up-to-date equipment and patients are always favorably impressed with it. Besides, steel equipment, especially the Betz kind, resists wear. It looks well for years and years when covered with Betz clean, washable, wear-resisting white enamel.

Then, there's a lot in the way furniture is designed. Betz steel furniture is to be found most everywhere, so physicians are familiar with its clean lines and convenient design. We have been making it for 25 years at reasonable prices, and that experience is built into every piece.

Note How Reasonable the Prices Are

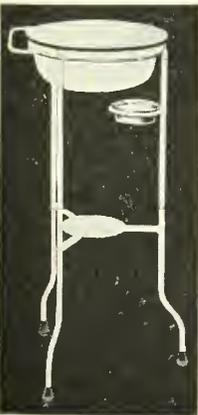
FRANK S. BETZ CO., Hammond, Ind.
New York - Chicago



Steel Office Chairs

These chairs are very substantially made with seat and back welded solid to the tubular steel frame. Made to fit body curves.

6CJ1070 Chair with arms, each. \$9.50
6CJ1071 Ch'r without arms, each. 8.50



Portable Wash Bowl St'd

A clean, strong combination stand complete with 13-inch single bowl, pitcher and soap dish. A convenient portable stand.

6CJ900 Wash Bowl and Stand \$9.00



Revolving Office Chair and Stool

All-purpose steel chair and stool, adjustable as to height. All metal, pressed steel seat. 6CJ1075 Chair with back \$11
6CJ1076 Stool. \$7.00



Two Bowl Wash or Immersion Stand

Equipped with two 13½-inch porcelain white enamel bowls, soap dish, steel shelf and towel rack. 6CJ933 Wash Stand. \$17.50



Mayo's Stand

A handy combination of irrigator, immersion bowl stand and instrument table. Has 13-inch adjustable bowl and 13x19 inch adjustable table for instruments. Is 48 in. high.

6CJ879 Mayo's Stand. \$18.00

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiappella, Chico..... | 2d Thursday. |
| Contra Costa County Medical Society..... | M. L. Fernandez, Pinole..... | C. T. Wetmore, Hercules..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Igllick, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozler, Susanville..... | R. W. T. Garner, Susanville..... | |
| Los Angeles County Medical Society..... | Walter Brem, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | J. A. Beck, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | Edward F. Donnelly, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | J. H. Lang, Fullerton..... | W. C. Mayes, Santa Ana..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. L. Curtiss, Redlands..... | E. J. Eyttinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | H. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. P. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | J. R. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | J. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Bly, Red Bluff..... | |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lela J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.

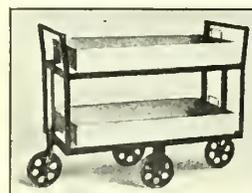
*Patronize the Advertisers Who Support
The California State Journal of Medicine*

Phone Park 8998

E. H. MARKEL
Orthopedic Appliances

TRUSSES AND ELASTIC HOSIERY

1138 Mission Street Between 7th and 8th
San Francisco, California



A Husky Worker

that never goes on a strike, never complains about long hours or asks for more pay. Our "Tray Truck" is indispensable in the modern hospital or sanitarium. You CAN get along without it, but why should you? This is the day when efficiency spells success.

EAMES CO.

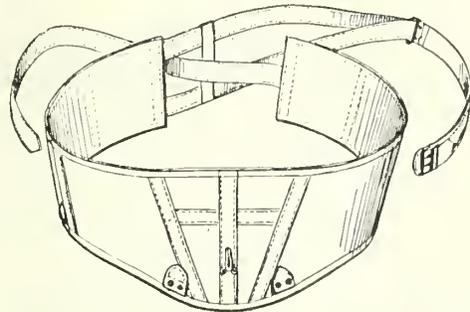
55 FIRST STREET SAN FRANCISCO

Manufacturers of Invalid Chairs, In-door Trucks for Every Purpose and Sole Makers of Celebrated EAMES Rubber Tired Ball Bearing WHEELS. Send for Catalog.

NOTICE

The JOURNAL office will very much appreciate the return of any copies of the June (1921) issue. Members having no further use for their copy will return it to

930 Butler Building
SAN FRANCISCO



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are especially well cared for in a unique and efficient manner. For twenty-one years we have made our business a study, and by confining ourselves to these specialties have developed methods that assure relief to the patient and satisfaction to the doctor.

Every physician should secure a copy of our catalogue, which explains our business in detail. We have the largest and best equipped plant on the Pacific Coast and are the exclusive agents for the famous Drs. Smith's "Honest John" Truss, the only practical device for holding at the internal ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
San Francisco

1522 Broadway
Oakland

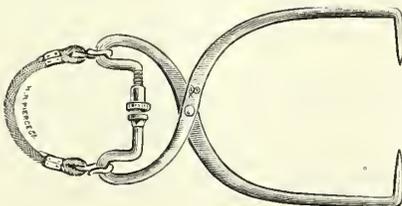
Walters Surgical Company

"Service and Dependability"

441 SUTTER STREET
Between Powell and Stockton Streets
Phone: Douglas 4017

High Grade Surgical Instruments and Hospital Supplies

Trusses Abdominal Supporters
Elastic Hosiery
Orthopedic Appliances
Laboratory Apparatus, Stains



Edmonton Fracture Extension Tongs

AMERICAN

FORCEPS

Allis—Carmalt

Kelly—Oschner

BAUMANOMETER Sphygmomano Meter

BUCK'S Dental Films

CASTLE Office Sterilizers

ETHER Vapor and Vacuum Apparatus

LABORATORY ESSENTIALS

METZ, Arsphenamine and Neo

SHERMAN Bacterine Vaccine

Everything today

Pacific Surgical Mfg. Co.

320 W. Sixth Street

Main 2959

LOS ANGELES

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

PROMPT ~ ACCURATE ~ DEPENDABLE



Our prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over nine years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy. *This should mean much to you.*

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diacetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

LIBRARY

California

State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

AUGUST, 1921

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

AUGUST CONTENTS

Editorials 303-305

Orthodiagraphy 304

Extension Work of the State Medical Society 304

Group Medicine 304

Ethics of Advertising 304

Silver Arspenamine 304

Infantile Paralysis Increasing 305

Street Venders of Nostrums 305

New Examining and Treatment Table 305

Original Articles:

Epidemic Encephalitis. By H. C. Moffitt, M. D. 305

Diagnosis of Hypothyroidism. By N. W. Janney, M. D. 313

Artificial Pneumothorax in the Treatment of Pulmonary Disease. By Robt. A. Peers, M. D. 316

Monthly Fluctuations in the Normal Metabolic Rates of Men and Women. By A. H. Rowe, M. D., and Margaret Eakin, B. A. 320

Tics, and Their Treatment. By Thos. C. Little, M. D. 324

Chronic Trochanteric Bursitis. By J. K. Swindt, M. D. 326

Meningitic Epilepsy. By C. E. Reynolds, M. D. 329

Chronic Arthritis. By Samuel J. Hunkin, M. D. 334

Skin Rashes in Exophthalmic Goitre. By F. F. Gundrum, M. D. 339

Useful Apparatus in Physiotherapy. By H. L. Langnecker, M. D., San Francisco, and F. E. Boerke 339

County Societies:

Alameda 339

Mendocino 340

San Diego 340

San Joaquin 340

Book Reviews 340

Books Received 341

Medicine Before the Bench 342

Legal Liability for Transmitting Infection 342

Decayed Teeth and Children's Diseases 343

Public Health Service Hospitals... 343

Spare the Ox 343

Milk Standards—United States Public Health Service 343

Section on Orthopedic Surgery... 343

Section on Obstetrics and Gynecology for the Coming State Meeting 344

Pacific Coast Orthopedic Association 344

Narcotic Law 344

California State Homeopathic Medical Society 344

New Members 344

Obituary—Harry Mitchell Sherman, M. D. 345

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President H. G. BRAINERD, Los Angeles, President-Elect
 ALFRED C. REED, San Francisco, First Vice-Pres. JOSEPH CATTON, San Francisco, Second Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Editor and Secretary
 CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

- FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties.
PAUL M. CARRINGTON, San Diego (Term expires 1924)
- SECOND DISTRICT—Los Angeles, Santa Barbara, Ventura and Kern Counties.
WM. H. KIGER, Los Angeles (Term expires 1922)
- THIRD DISTRICT — San Luis Obispo and Monterey Counties.
T. C. EDWARDS, Salinas (Term expires 1924)
- FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.
DWIGHT H. TROWBRIDGE, Fresno (Term expires 1924)
- FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties.
FRANK H. PATERSON, San Jose (Term expires 1923)
- SIXTH DISTRICT—San Francisco County.
C. G. KENYON, San Francisco, Chairman. (Term expires 1922)
- SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties.
EDW. N. EWER, Oakland (Term expires 1923)
- EIGHTH DISTRICT—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.
JAMES H. PARKINSON, Sacramento (Term expires 1922)
- NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.
JAMES H. McLEOD, Santa Rosa (Term expires 1923)

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); Saxton T. Pope, San Francisco (term expires 1924); C. Van Zwalenburg, Riverside (term expires 1923).

REID BROS., Inc.

MANUFACTURERS
IMPORTERS
EXPORTERS

Hospital and Surgical
Supplies
of every description

Large Stocks and Complete
Manufacturing Facilities

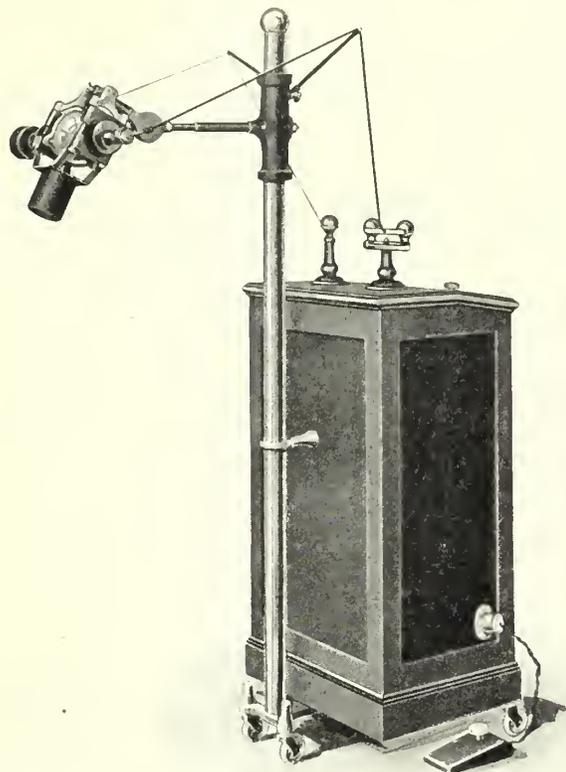
91 to 99 DRUMM ST. SAN FRANCISCO

BRANCHES

Seattle, Washington

Vancouver, Canada

Tokyo, Japan



VULCAN

AUTO X-RAY UNIT, De Luxe

(Coolidge Tube)

The "last word" in X-Ray apparatus, having an excess of power for any practical purpose in Radiography or Fluoroscopy, combining every desirable feature of others with special, exclusive features.

Sold at a moderate price—no transcontinental freight added. Factory service within reach of your office telephone—not 2000 miles away.

The reputation of Vulcan products is too well established to admit of question. Ten years on the market without a dissatisfied patron. References everywhere.

Literature and full information on request.

Vulcan Electric Company

"THE WESTERN HOUSE FOR THE WESTERN DOCTOR"

Makers of X-Ray and H. F. Treatment Apparatus

239-41 So. Los Angeles St.

Los Angeles, California

MEET US AT CORONADO

Hay Fever Prophylaxis

THE UNIFORM STABILITY AND ANTIGENIC
ACTIVITY OF THE PRODUCT EMPLOYED
ARE OF UTMOST IMPORTANCE

Pollen Antigen *Lederle*

IS SO PREPARED THAT ITS ANTIGENIC
ACTIVITY IS ACCURATELY DETERMINED
AND SO PRESERVED THAT ITS STABILITY
IS ASSURED.

Lederle Antitoxin Laboratories

511 FIFTH AVENUE

COR. OF FORTY-THIRD ST.

NEW YORK CITY

Announcing the Opening of

St. Gothard Convalescent Home

St. Helena, Napa County, California

Selected Nervous Cases Accepted
No Acoholic, nor Drug Addicts
Attending Physician, Myron M. Booth

*For particulars address C. & L. Broniscoe, 925 Grove St., San Francisco
Phone Park 5193*

*Patronize the Advertisers Who Support
The California State Journal of Medicine*



MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH—That vaccination against all three infections does definitely protect against all three.
- FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count
Write for Therapeutic Index Price List

"SPRING ACRES"

2747 Fruitvale Avenue
Oakland . . . California

EXCLUSIVELY FOR THE CARE
OF TUBERCULAR PATIENTS

Privacy, individual service, homelike comforts
and amusements are featured for all patients.
Patients select their own physicians

Rates \$25.00 per week and up

Mrs. L. E. Everson :: :: :: :: :: Fruitvale 42

DEPENDABLE PRESCRIPTION SERVICE

Shumate's
Prescription Pharmacies

- | | |
|-------------------------------------|------------------------------------|
| 1 Cor. Sutter and Devisadero. | 8 Valencia and 16th Streets. |
| 2 Cor. Haight and Masonic Ave. | 9 California St. and 23rd Ave. |
| 3 Cor. Sacramento and Presidio Ave. | 10 Cor. Bush and Hyde Sts. |
| 4 84 Post Street East of Kearny. | 11 S. P. Bldg., Market Near Ferry. |
| 5 Cor. Carl and Cole Streets. | 12 Clement St. and 2nd Ave. |
| 6 Cor. Union and Steiner Streets. | 13 Polk and Washington Sts. |
| 7 Cor. Powell and Sutter Sts. | 14 Ninth Ave and Judah St. |

PHYSICIANS' PRESCRIPTIONS ACCURATELY DISPENSED

SAN FRANCISCO

Six Good Reasons Why OVALTINE

Rebuilds Tissue & Restores Function

1. It provides adequate utilizable energy value.
2. It contains as building elements the complete proteins, leucosin, bynedestin, caseinogen, ovalbumin, ovovitellin and lactalbumin.
3. It contains the soluble easily digested and assimilated carbohydrates, maltose and lactose.
4. Its enzymes are a powerful aid to digestion.
5. Its mineral constituents efficiently remineralize the patient.
6. Its accessory food factors promote normal metabolism.

Samples and literature mailed upon signed request.

Indications

Convalescence, Phthisis and other wasting diseases, Malnutrition, Malassimilation, the Dyspepsias or where diet reinforcement of easy digestion and assimilation is required as in Fever, Pregnancy or Lactation.

MENHI,
Form of Skhket.

M14

The Wander Company

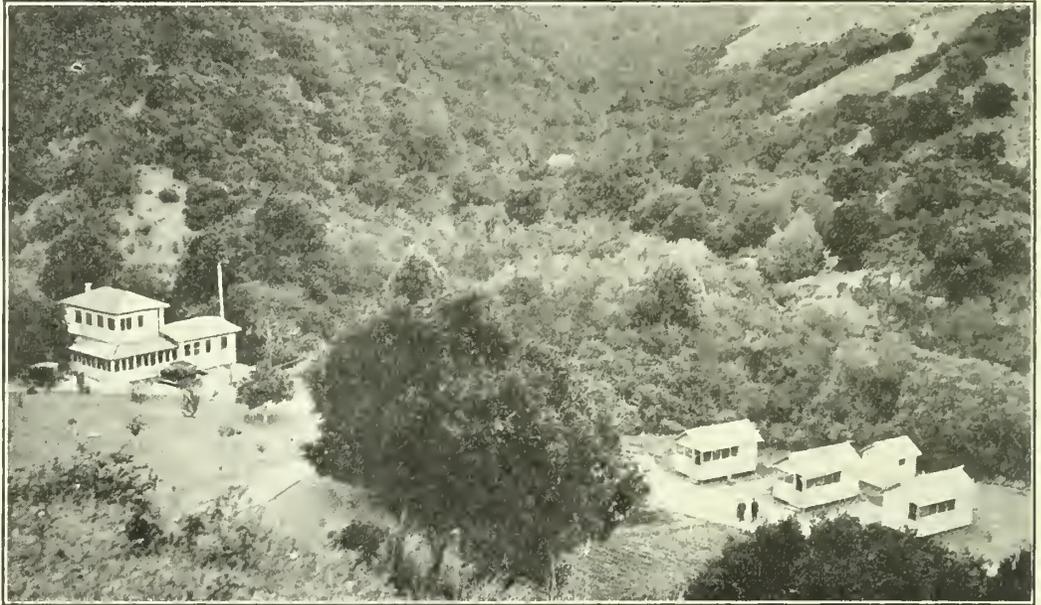
37 South Wabash Avenue, Chicago, Ill.

WORKS: VILLA PARK, ILL.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*
□



SOME OF THE COTTAGES

□
*Rates
Reasonable*
□
Climate Ideal
□

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS
DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
FLOOD BUILDING - - - SAN FRANCISCO
Telephone Douglas 4486

NORMAL TISSUE EXTRACTS

(Archibald)

LEUCOCYTIC EXTRACT

In acute infections or toxemias.

For the purpose of raising resistance and stimulating defensive and offensive elements.

SPLEEN EXTRACT

In chronic infections; Malaria, Tuberculosis and anemias. Increases both red and white cells and hemoglobin.

LYMPH GLAND EXTRACT

In subacute or chronic conditions in cases where the removal of dense or partially organized inflammatory exudates is a prominent factor.

LYMPHOID EXTRACT

Indicated pre-operatively and in the treatment of all types of hemorrhage. Increasing the number and activity of the blood platelets. Decreasing coagulation time.

ALL NORMAL TISSUE EXTRACTS are for subcutaneous injections.

2 c. c.—6 Ampules \$2.50

Vitalait Laboratory of California

Flood Bldg.
San Francisco - - Pasadena

BEAR IN MIND

three things

WALKER'S SPLINTS

genuine pistol grip for Collis fractures

STANDARD SPHYGMOMANOMETER

broad mercury column, large index, \$30

HARE MARPLE OPHTHALMOSCOPE

an improved instrument

are now in stock. Your inspection is invited.

Pacific Surgical Mfg. Co.

LOS ANGELES

MAIN 2959



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.

HYDROPATHIC
DEPARTMENT



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of HYDROTHERAPY,—coupled where indicated with NAUHEIM,—RADIO ACTIVE CLAY,—CALCIC CARBONATE,—MAGNESIA CARBONATE and SULPHATE BATHS,—RADIUM EMANATORIUM. Modern modifications of ZANDER APPARATUS, MASSAGE and MANIPULATIONS. ELECTRO-THERAPY, THERMO-PENETRATION, HELIO-THERAPY, PROCTOCLYSIS, CORRECTIVE GYMNASTICS and the application of tabulated PHYSICAL EFFICIENCY TESTS

We are well equipped with modern mechanical devices of scientifically proven efficiency for the RELIEF of SUFFERING. We maintain a most comprehensive SERVICE ORGANIZATION of TRAINED ATTENDANTS rendering PERSONALIZED SERVICE to every patient.

Our Institute is specially equipped for the relief of persons suffering from CHRONIC DISORDERS. We are also prepared to take care of POST-OPERATIVE CONVALESCENTS in need of RECONSTRUCTION and "CONDITIONING" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

DOCTOR:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern PHYSIO-THERAPY. Our twenty years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

Care—Courtesy—Privacy—Comfort.
Best references. Inspection invited.

G. H. Richardson, M. D.,
Medical Director.
N. A. Karpaty, B. Sc.,
Technical Superintendent.
Mrs. N. A. Karpaty,
In Charge of Women's Dept.

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES
133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

The Seymour Sanatorium

Banning, California

SITUATED in the broad San Geronio pass at an elevation of 2,400 feet, with inspiring views of Mt. Grayback and old San Jacinto on either hand, near, yet not upon the desert, the SEYMOUR SANATORIUM is exceptionally well located both from a climatic and environmental standpoint.

Here nature gives her best, and all modern means are used to assist and reinforce her efforts.

Careful study of each case, strict individualization in treatment and painstaking attention to detail, assure to the patient the attainment of the maximum benefit from the sanatorium sojourn.

The rates are very moderate

CHARLES E. ATKINSON, M. D., Medical Director



PROTECTION

YOUR insurance problem has many phases. Your home, your family, your property, your automobile, your prosperity and even your good name as a physician or surgeon—all call for adequate insurance protection.

An insurance organization like the Affiliated Aetna Companies is equipped to handle all your insurance needs and give you the efficient and intelligent service which your interests demand.

Aetna Malpractice Protection

Under this form of policy doctors can be certain of all available legal protection in opposing malpractice claims and suits. These policies are issued *only* to members in good standing of the Medical Society.

You can get full information about these and any other policies in which you are interested from the Aetna agent in your town. He is a good man to know. Tell him your insurance needs and, without obligation on your part, let him prescribe for you. With the great Aetna organization behind him he is competent both to prescribe and to fill prescriptions.

Here are some of the more important lines written by the Affiliated Aetna Companies:

| | | |
|---------------------|------------------------------|--------------------------|
| <i>Life</i> | <i>Hospital</i> | <i>Fire</i> |
| <i>Accident</i> | <i>Combination Residence</i> | <i>Use and Occupancy</i> |
| <i>Health</i> | <i>General Liability</i> | <i>Marine</i> |
| <i>Automobile</i> | <i>Burglary</i> | <i>Surety Bonds</i> |
| <i>(Every kind)</i> | <i>Theft</i> | <i>Plate Glass</i> |

Total assets January 1, 1921 - - - - \$204,839,890.53

If you are not acquainted with the Aetna Agent in your town write direct to

J. R. MOLONY, Manager, Western Branch
Department "C," 333 Pine Street, San Francisco, Calif.

ÆTNA LIFE INSURANCE COMPANY

AFFILIATED WITH

ÆTNA CASUALTY AND SURETY COMPANY

AUTOMOBILE INSURANCE COMPANY

Of Hartford, Conn.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

ANNOUNCING

The Formation Of

The Santa Barbara Clinic

For The Practice Of

Group Medicine

ASSOCIATES

REXWALD BROWN, M. D., Surgery
 BENJAMIN BAKEWELL, M. D., Obstetrics
 HILMAR O. KOEFOD, M. D., Medicine
 HARRY E. HENDERSON, M. D., Medicine
 H. J. PROFANT, M. D., Eye, Ear, Nose, Throat
 GEORGE F. FARMAN, M. D., Urology
 HUGH F. FREIDELL, M. D., Gastro-Enterology

A Building Has Been
 Erected For the Purpose

Complete Clinical and
 Laboratory Facilities—
 Competent Technicians

1421 STATE STREET

SANTA BARBARA, CALIFORNIA

The Bridge

YOU probably remember the incident. It happened a few months ago. A bridge in the middle west collapsed. And down went a passenger train, carrying with it death and destruction into the water below. The investigation which followed showed that the bridge, from an engineering standpoint, was constructed along the

right lines. The wreck was due to a defective cable—poor quality of material.

The doctor's prescription is the *bridge* that carries the patient from sickness to good health. The materials that go into the prescription are the *cables* of the bridge. This is why we use only the best quality of products in filling prescriptions.

KECK'S PRESCRIPTION PHARMACIES

UPSTAIRS

135 Stockton St., Near Geary
 Phone Sutter 5426

209 Post St., Near Grant Ave.
 Phone Garfield 1380

SAN FRANCISCO

A
Rational Procedure
in
Summer Diarrhea

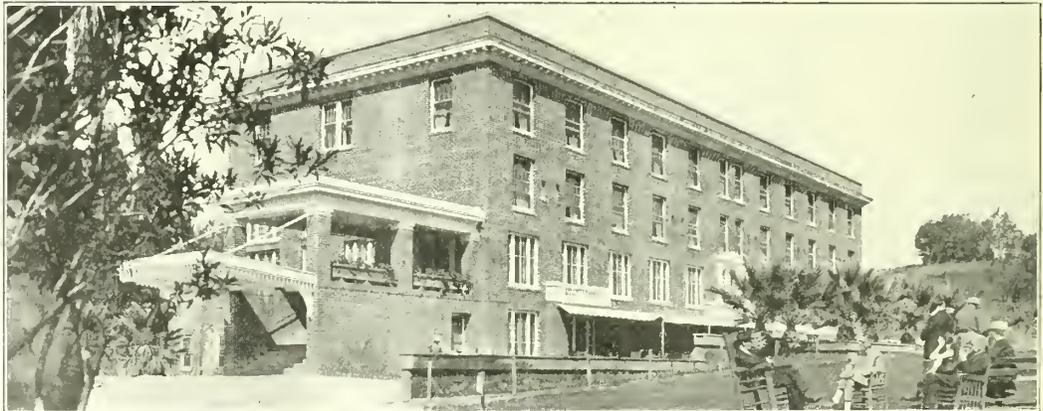
For Infants
of any age

Mellin's Food
4 level tablespoonfuls
Water (boiled, then cooled)
16 fluid ounces

Give one to three ounces every hour or two, according to the age of the baby, continuing until stools lessen in number and improve in character.

Milk, preferably skimmed, may then be substituted for water—one ounce each day—until regular proportions of milk and water, adapted to the age of the baby, are reached.

BYRON HOT SPRINGS CALIFORNIA



"THE HOME OF HEALTH"

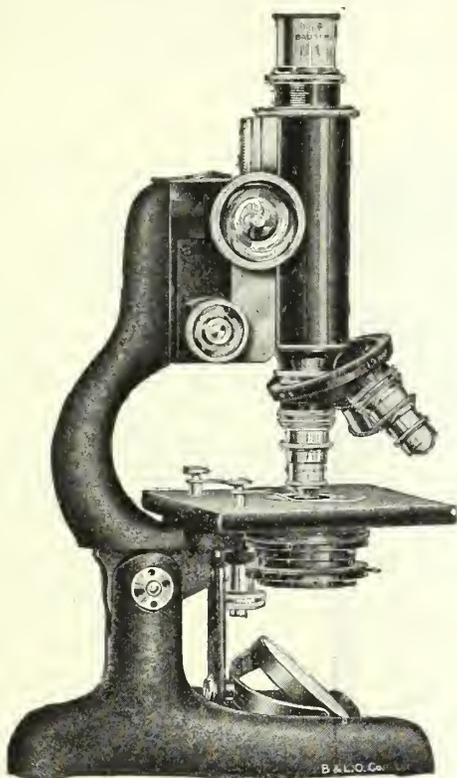
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto from San Francisco

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

**BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA**



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—

MT. SHASTA
14,442 FEET HIGH

ALQUA

THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLETS AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U.S.A.

- pre- and post-operative conditions
- pre- and post-partum conditions
- infectious diseases
- hyperacid stomach conditions
- headache, due to high acidity
- headache, due to brain oedema
- skin conditions
- genito-urinary infection
- edema—local or general
- nephritis
- diabetes
- asthma and hay-fever
- arterio-sclerosis
- cyclic vomiting
- alcoholism
- typhoid bacilli
- children and in infantile diarrhoea.

At All Druggists

Grageroff & Papazoni



Laboratory of Clinical
Pathology



222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

- Readily Soluble
- Practically Free from Toxicity
- Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you communicate with

HAMETZ LABORATORIES, Inc
One-Hundred-Two Hudson Street, New York.



For

Prophylaxis against Diphtheria

DIPHThERIA TOXIN-ANTITOXIN MIXTURE (Diphtheria Prophylactic) is a mixture of Diphtheria Toxin and Antitoxin prepared according to directions laid down by Von Behring, Park and others.

Indications for use:

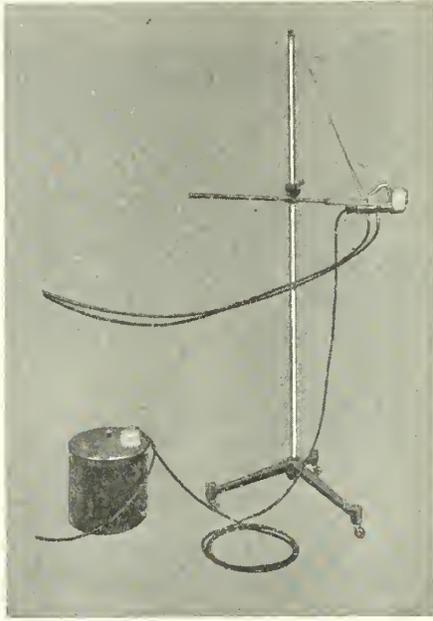
1. For general prophylaxis against diphtheria in schools and communities, excluding immediate contacts.
2. For permanent immunity against infection for individuals not recently exposed.
3. In conjunction with a prophylactic dose of diphtheria antitoxin for those who are exposed to diphtheria and desire a longer protection than would result from antitoxin alone.

Contra-indications: (1) It should never be used as a treatment for diphtheria. (2) It should never be used as an immunizing agent for an individual recently exposed, unless a prophylactic dose of diphtheria antitoxin is given at the same time.

Diphtheria Toxin-Antitoxin Mixture (Diphtheria Prophylactic) is given in three subcutaneous injections of one cubic centimeter each, at intervals of about five days. It is supplied in cases of three 1-cc bulbs, without injecting attachment.

Parke, Davis & Company

Consider—



THE KROMAYER LAMP

that the Kromayer lamp enjoys the distinction for highest intensity of Ultra-Violet radiation and the most practical means for administering treatment of many conditions.

The effective results obtained with its use over a period of ten years has been the stimulant for our scientific research work that has resulted in bringing the lamp to its present high state of efficiency.

It is chosen as the most desirable method of applying actinic rays to Lupus, Naevus, Acne, Psoriasis, Eczema, Ulcers and Wounds; to specific or non-specific orificial inflammatory conditions such as Tubercular Laryngitis, Rectal Fistulae, Otitis Media, Frontal Sinus Infections, Ozena and a number of gynecological conditions.

Write for interesting illustrative booklet.

Hanovia Chemical & Mfg. Co.

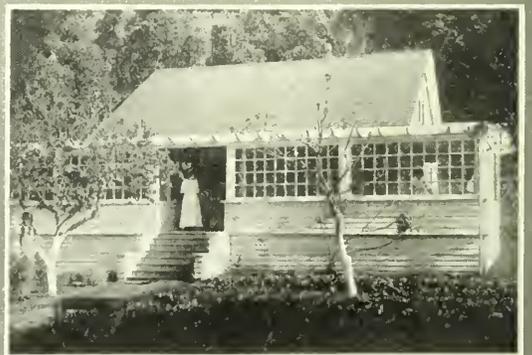
San Francisco, Cal.

Executive Offices: - - - - Newark, N. J.

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery. Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

A BANKING SERVICE FOR THE MEDICAL PROFESSION

An Investment Department that can help you solve problems in buying and selling securities.

A Savings Department for your savings and surplus funds.

A Commercial Department for your checking account.

A Trust Department,—the largest in the West,—that can act as executor, trustee or custodian of your properties.

Safe Deposit Vaults for the safekeeping of your valuables.

THIS IS THE COMPLETE BANKING SERVICE THAT WE OFFER YOU.

UNION TRUST COMPANY

COMMERCIAL SAVINGS OF SAN FRANCISCO SAFE DEPOSIT TRUST
MARKET ST. AND GRANT AVE.

Pacific Surgical Gown Co.

Manufacturers of

Dental Gowns
Operating Gowns
Instrument Rolls
Leg Holders
Cushions for all
Operating Tables



Operating Gown

1626 EDDY STREET
San Francisco California
West 2715

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

If Your Diagnosis Indicates

Glandular Insufficiency

and you desire to be assured of high quality, reliable endocrine products

"Specify WILSON'S"

Ovary, Thyroid, Pituitary, Suprarenal, Corpus Luteum

The quality of the product can be no better than the soundness of the raw material. You realize the importance of having prescriptions filled with desiccated substance obtained from absolutely fresh, sound glands.

As a subsidiary of Wilson & Co., Packers, we have the distinct advantage of a direct supply of fresh glands.

Prepared from Abattoir to finished Package
BY



4213 SOUTH WESTERN BOULEVARD, CHICAGO, ILL.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments.

DR. I. B. LINEBARGER

Southern California Representative

Care of Wilson & Co.

1000 Lyons Street, Los Angeles, Cal.

MR. D. B. MORGAN

Northern California Representative

84 Second Street, San Francisco, Cal.

May we place you on our mailing list for "The Autacoid and Suture," our house journal devoted to Glandular Therapy?

Write for Catalog

NOTICE

Best results from use of **BIOLOGICAL PRODUCTS** are only possible through proper refrigeration. We guarantee proper temperature and care at all times. We invite inspection of our **SPECIAL BIOLOGICAL REFRIGERATOR**.

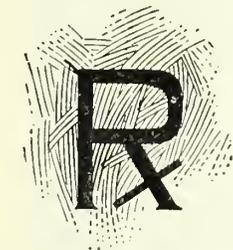
Distributors of **SQUIBB'S BIOLOGICAL PRODUCTS**

BUTLER BROTHERS' PHARMACY

Professional Pharmacists

Suite 807-9-11 Flood Bldg., Opp. Elevator

Powell and Market Streets, San Francisco, Cal.



Phone: Douglas 163
Private Exchange

TRAINER-PARSONS OPTICAL CO.

Dispensing Opticians

186 GEARY STREET - - - SAN FRANCISCO

Near Stockton. Opp. City of Paris

Telephone Kearny 2767

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

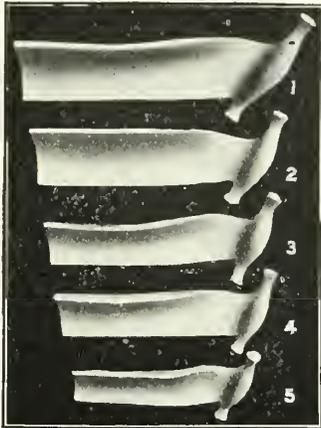
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





Walker's Colles Fracture Splints NOW IN STOCK

TRAVERS Surgical Co.

SAN FRANCISCO, CAL.

Phone Sutter 4 6 5 1 372 Sutter Street

SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES

Our Stock is Complete

CYSTOSCOPES AND ACCESSORIES
MICROSCOPES AND SUPPLIES
SPLINTS OF ALL KINDS
LUER SYRINGES AND NEEDLES
PHYSICIAN'S OFFICE FURNITURE
ELECTRIC DIAGNOSTIC INSTRUMENTS

*If It Is Surgical
We Have It*

Treat Hay Fever With Suprarenalin



SUPRARENALIN is the remedy in Hay Fever. It may be administered locally, internally or Hypodermatically.

Locally—Solution and ointment are applied to affected parts.

Internally—Solution should be given, so that the patient will get from 1/70 to 1/10 of a grain; the dose repeated in from 10 minutes to two hours, according to effects.

(Let the patient hold Suprarenalin in the mouth for a while, as the best systemic effects are got by absorption through the membranes.)

Hypodermatically—Suprarenalin Solution is injected into the arm or neck.

Suprarenalin is recommended in Hay Fever in various forms. Herewith are suggestions made by men of authority.

One recommends using solutions of varying strengths from 1:10,000 to 1:1000 made up with normal salt solution. To sustain the relief to some extent, he suggests spraying over the constricted mucous membrane a 5 grain to the ounce solution of menthol in alboline, benzoinol or other light oil.

Another uses Suprarenalin Solution in strengths varying from 1:10,000 to 1:1000, applying these locally to the conjunctiva and nasal membranes. He also suggests the following combinations which are snuffed into the nasal passages or insufflated by means of a nasal blower.

1. Suprarenalin 1 part
Zinc Stearate (Comp).....100 parts
Heavy Magnesium Carbonate.....300 parts
Mix. Triturate well.
2. Suprarenalin 1 part
Zinc Oxide100 parts
Bismuth subcarbonate.....400 parts
Mix. Triturate well.
3. Suprarenalin gland substance..... 1 part
Zinc Stearate.....20 parts
Zinc Oxide..... 80 parts
Mix. Triturate well.
4. Suprarenalin 1 part
Bismuth subcarbonate300 parts
Zinc Oxide300 parts
Zinc Stearate200 parts
Mix. Triturate well.

A prominent nose and throat specialist recommends:

| | | | | |
|------------------------------|-----|----|------|------|
| | gm. | | | |
| Cocainae hydrochloridi... | 15 | or | grs. | iiss |
| Sodii boratis..... | 30 | or | grs. | v- |
| Suprarenalin Sol. (1:1000) 4 | | or | 5 | i |
| Glycerine | 2 | or | 5 | ss- |
| Aqua Camphorae ad..... | 30 | or | | 3 i |

M. Sig. Use as a spray to the nose four or five times daily or oftener if needed.

Suprarenalin Solution 1:1000 (Armour) is stable, uniform, non-irritating and is free from chemical preservatives. Literature to Physicians.

ARMOUR AND COMPANY
CHICAGO



The Most Ethical
Prescription Pharmacy
in
San Francisco

Accuracy, Purity, Quality
and Immediate Service

Broemmel's Prescription
Pharmacy

California and Steiner Sts. West 558-559
and Manufacturing Chemists
San Francisco, California

SAVE MONEY ON

YOUR **X-RAY** SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

X-RAY PLATES. Three brands in stock for quick shipment. **PARAGON**
Brand, for finest work; **UNIVERSAL** Brand, where price is important.

X-RAY FILMS. Duplitzed or double coated—all standard sizes. Eastman,
Ilford or X-graph metal backed. Fast or slow emulsion.

BARIUM SULPHATE. For stomach work. Finest grade. Low price.

COOLIDGE X-RAY TUBES. 5 Styles. 10 or 30 millamp.—Radiator
(small bulb), or broad, medium or fine focus, large bulb. Lead
Glass Shields for Radiator type.

DEVELOPING TANKS. 4 or 6 compartment stone, will end your dark
room troubles. 5 sizes of Enameled Steel Tanks.

DENTAL FILM MOUNTS. Black or gray cardboard with celluloid window
or all celluloid type, one to eleven film openings. Special list
and samples on request. Price includes your name and address.

DEVELOPER CHEMICALS. Metol, Hydroquinone, Hypo, Prepared Developers, etc.

INTENSIFYING SCREENS. Patterson, T-E, or celluloid-backed screens,
Reduce exposure to one-fourth or less. Double screens for film.
All-metal Cassettes.

LEADED GLOVES AND APRONS. (New type glove, lower priced.)

FILING ENVELOPES with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

ALTA SANATORIUM

For the treatment of Pulmonary Tuberculosis

ALTA (PLACER CO.) CALIFORNIA

Invigorating climate. Beautiful scenery
Strict medical attention. Moderate terms

Apply for Particulars

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

DR. A. REED'S CUSHION SHOE

Fine Grades In Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary

San Francisco, Cal.

The Laboratories of
REED & CARNRICK
Are Devoted to Making

Organic Physiological Products

Full particulars concerning these and answers to all queries will be gladly given.
Please remember that in writing to **REED & CARNRICK** you will be answered by medical men thoroughly trained in hospital work and practice and not by theoretic laboratory workers.

REED & CARNRICK

42-44-46 Germania Avenue
Jersey City, N. J.

POTTENGER SANATORIUM

For Diseases of the Lungs and Throat

MONROVIA,
CALIFORNIA



A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

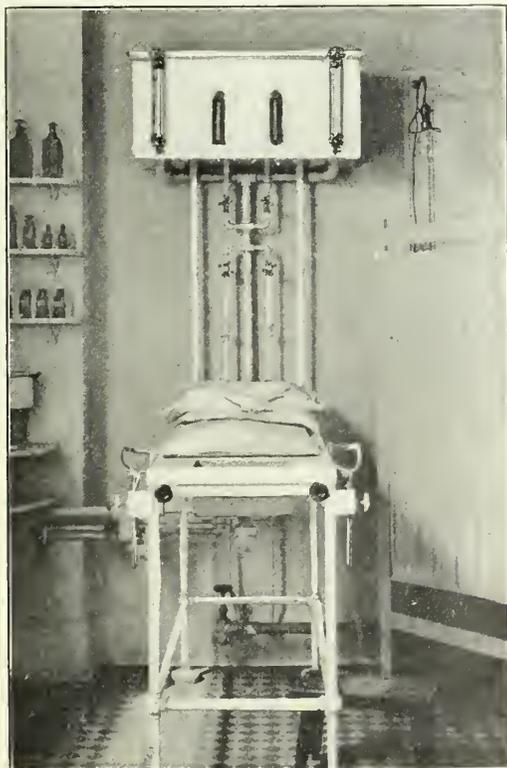
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California



UNIT NO. 1. CABLE IRRIGATING TABLE

“RAPID, EFFICIENT, SATISFACTORY”

Says a Brooklyn Specialist in Describing the

Cable Irrigating Table

For the Treatment of

ALL INFLAMMATORY DISEASES OF
THE PELVIS

Made in Three Units of One, Two and
Three Tables

Unit No. 1. For Physician's Office.

Unit No. 2. Used in smaller institutions.

Unit No. 3. Installed in large Hospitals and
Clinics.

Let us send you folder describing
this equipment

Get in touch with Hospitals and Physicians
familiar with its use

Albatross Metal Furniture Company
PORTLAND, OREGON

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

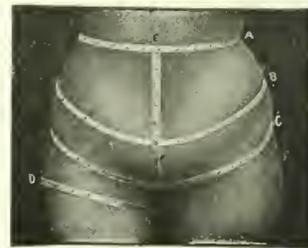


Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of

Crutches Sold or Rented
Arch-Support Fitting a Specialty

ARTIFICIAL LIMBS and ORTHOPEDIC APPLIANCES

Bonded Manufacturers for U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

QUALITY GARMENT SHOP

We manufacture and make to order

SURGEONS' GOWNS, DENTISTS' SMOCKS, NURSES' UNIFORMS, ETC.

511 Sutter St.

Near Powell

Phone Kearny 1271

SAN FRANCISCO

1023 Fillmore St.

Near McAllister

Phone Market 8125

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco
Phones: Sutter 936-937

MANUFACTURERS

Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enameled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400

SAN FRANCISCO

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco

Phone Fillmore 4160

FOR SALE—Outfit for country doctor. Suitable for all emergencies. Medical, Surgical and Electrical. New or in first-class condition. Cost, approximating \$2,000. Bargain. Also several hundred volumes of books. Address Dr. "T," care of the California State Journal of Medicine.

Doctor:---

The science of collecting has been our study for twelve years, and there are few who have devoted more time, money and energy to their profession.



If we can be of service to you, mail us your statements of accounts; or, better still, call on us.

"WE GET THE COIN"—"WE PAY"

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.

Citizens National Bank Building, Los Angeles

Phone 60563

KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. An adequate night nursing service maintained. Sound-proofed rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to

KENILWORTH SANITARIUM
Kenilworth - - - Illinois



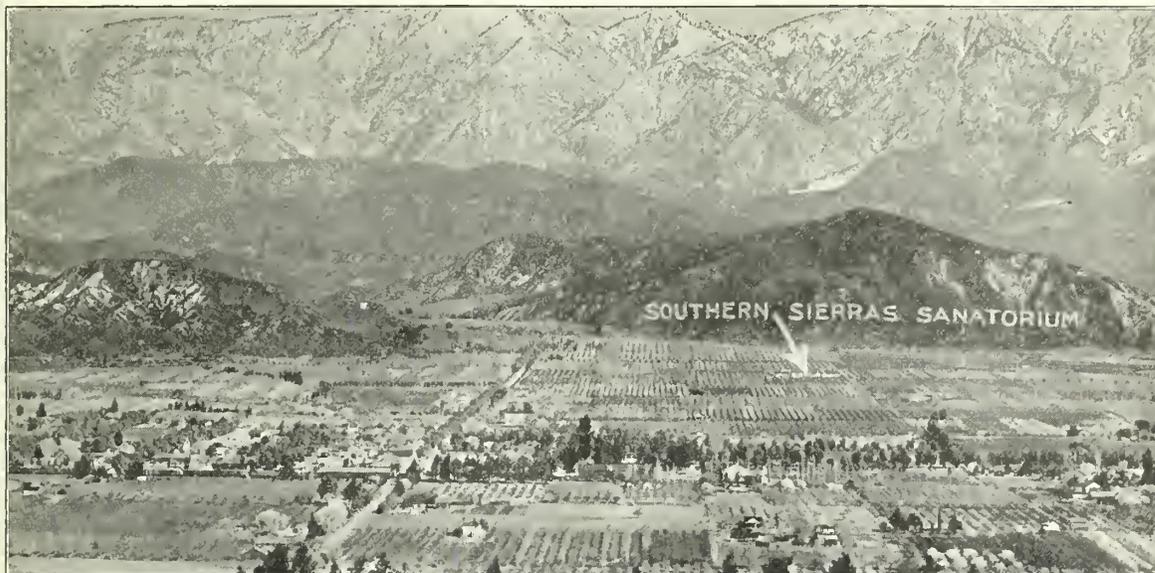
SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

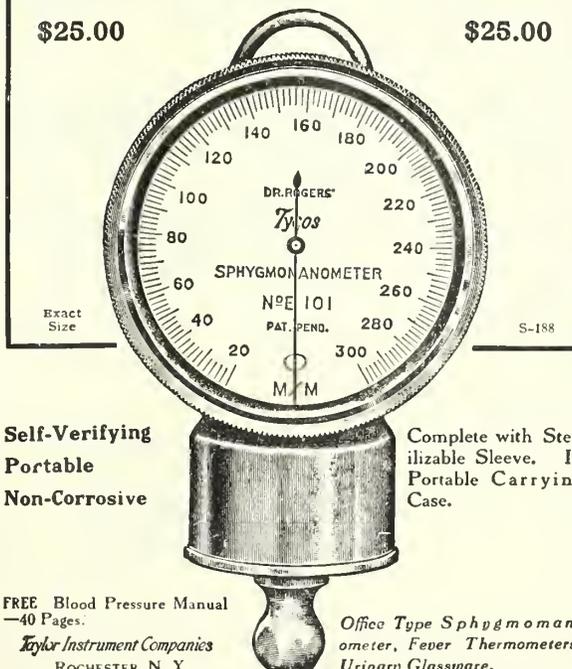
OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

Tycos Sphygmomanometer

\$25.00

\$25.00



Self-Verifying
Portable
Non-Corrosive

Complete with Sterilizable Sleeve. In Portable Carrying Case.

FREE Blood Pressure Manual
—40 Pages.

Taylor Instrument Companies
ROCHESTER, N. Y.

Office Type Sphygmomanometer, Fever Thermometers, Urinary Glassware.



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
E. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK
X-Ray Laboratory

SPECIALIZING ON THE HEAD

Stereoscopic Plates of Sinuses
Eye Localization

Separate Laboratory for
DENTAL RADIOGRAPHY
Referred Cases Only

318-321 Head Building, 209 Post Street
San Francisco
Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

Dickson-Bull
Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue
Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Cystoscopy **Urethroscopy**
Catheterization of Ureters
Functional Kidney Tests
Roentgenographic Diagnosis

A course of individual instruction in
Urology including the modern methods
of diagnosis and treatment.

WILLIAM E. STEVENS, M.D., F.A.C.S.
210 Post Street San Francisco

The Plague of Summer!

Infantile Diarrhea

(Of Bacterial Origin)

Treatment by the ingestion of the
BULGARIAN BACILLI

Has been growing in favor during
the last eleven years, evidenced by the
constantly increasing demand for

BULGARA TABLETS, H. W. & D.

A most convenient and reliable form
for administering Bulgarian Bacilli.

*Literature, including bacteriologic reports,
and sample furnished upon request*

Hynson, Westcott & Dunning
BALTIMORE

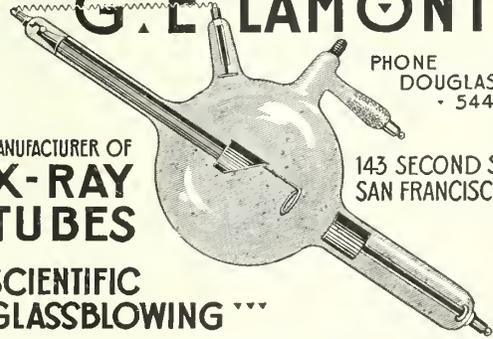
G. E. LAMONT

PHONE
DOUGLAS
- 5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING**

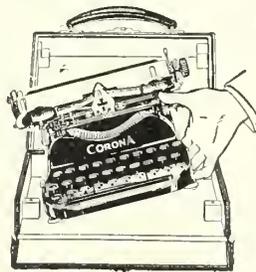


CORONA

The Personal Writing Machine
DOCTORS!

Save money and
avoid mistakes by
typing your own
bills, case records,
prescriptions, manu-
scripts and corre-
spondence.

\$50 WITH CASE



Corona Typewriter Co., Inc.

Phone
Sutter 1538

546 MARKET ST.
San Francisco



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. CHAS. S. FREEDMAN, Medical Director

PHONE MARKET 8048
PHONE MARKET 331

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.

The advice of the hospital staff is always at the
disposal of the patients' physicians.

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

HELIOS

**SUN CURE
SANITARIUM
SYSTEM ROLLIER**

SAN RAFAEL, Marin County, Calif.

TELEPHONE S. R. 519

HELIO THERAPY or treatment by scientific application of Sun Rays is recognized by leading surgeons as a most efficient method of treating Bone and Joint Tuberculosis, Anemia and kindred diseases. Results, even in severe Hip and Spine cases, have been most gratifying. We will gladly co-operate in cases not yielding to ordinary methods.

For rates and particulars please apply

Charles L. Freytag, M. D.,

MEDICAL DIRECTOR
Schroth Building, San Francisco, Cal.
Telephone Garfield 148

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$4.00; Canadian, \$5.00.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 50 cents.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. **Currency should
not be sent unless the letter is registered.** Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

CONVENIENT

A Complete Food

Requires Neither Cooking
Nor the Addition of Milk

"Horlick's"

The Original Malted Milk

Obviates many of the difficulties that are
generally connected with the prescribed
feeding of infants.

Easily prepared to meet the changing
needs of the individual infant.

Very reliable—prescribed by the medical
profession for over one-third of a century.

Avoid Imitations

Samples and Printed Matter Prepaid

HORLICK'S - - Racine, Wis.

WM. H. WEEKS

Architect

75 POST
STREET

SAN
FRANCISCO

Largest Architectural Organization in
the West Specializing in Hospitals
and Public Buildings

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.

Visiting Staff—Geo. H. Evans, M. D.; Harold P. Hill, M. D.; J. Wilson Shiels, M. D.; C. G. Kenyon, M. D.; H. M. Sherman, M. D.; L. W. Allen, M. D.; F. B. Carpenter, M. D.; Alanson Weeks, M. D.; Kaspar Pischel, M. D.; E. F. Glaser, M. D.; W. P. Willard, M. D.; T. G. Inman, M. D.; Geo. J. McChesney, M. D. Associate Staff—A. Miles Taylor, M. D.; J. F. Sullivan, M. D.; R. L. Ochsner, M. D.; Geo. S. Snyder, M. D.; Wm. Kenney, M. D.; Gilbert M. Barrett, M. D.; R. B. Tupper, M. D.; H. A. Fletcher, M. D.; R. W. Harvey, M. D. Consulting Staff—W. E. Hopkins, M. D.; Thos. W. Huntington, M. D.; D. W. Montgomery, M. D.; W. R. P. Clark, M. D. Pathologist—E. V. Knapp, M. D. Roentgenologist—H. E. Ruggles, M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent.

VEN. J. A. EMERY, Secretary and Treasurer,
W. H. HILL, M. D., Resident Physician.

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

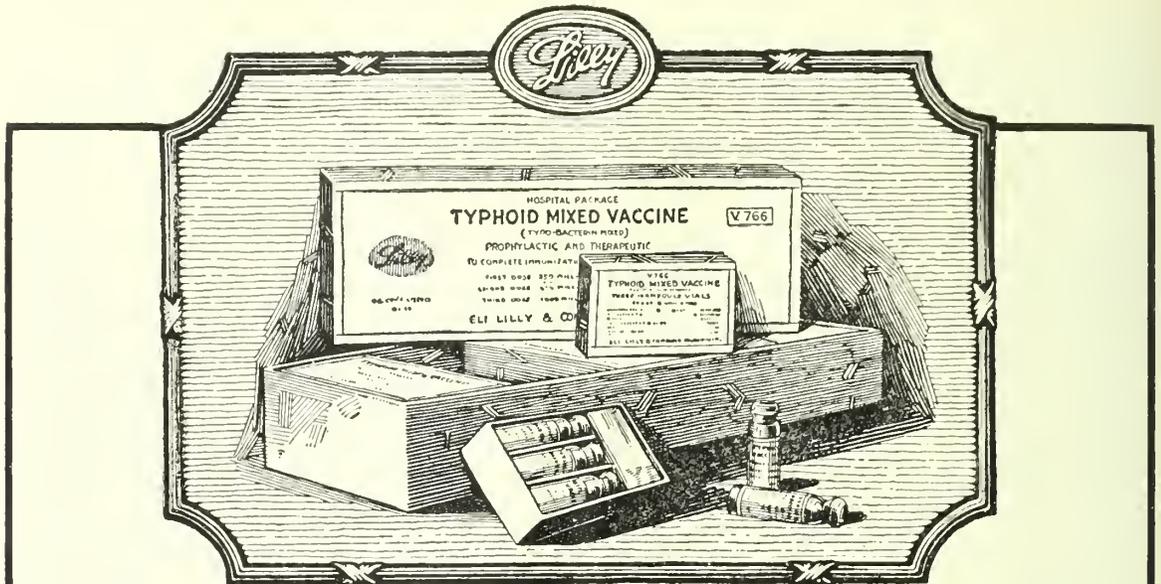
Sherman's polyvalent vaccines are dependable antigens

Local Agents:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY
F. I. LACKENBACH

LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"



Now Is the Time to Immunize Your Patients

The season of *Vacation Typhoid* will soon be with us. Physicians should urge vaccination against typhoid *now*. Vaccination is simple and safe. Its effectiveness is unquestioned. It should be advocated generally as a protective measure.

Specify "Lilly" Typhoid and Typhoid Mixed Vaccines. They are potent and reliable. Supplied through the drug trade in ampoule vials and syringe packages to meet all requirements.

SEND FOR FURTHER INFORMATION

ELI LILLY & COMPANY

Indianapolis, U. S. A.

Infant Feeding
Diet Materials

OUR AIM IS TO SERVE TO DESERVE

"SERVICE" is the keynote of our success. Through Service we have made friends with the medical profession who prescribe.

MEAD'S DEXTRI-MALTOSE

in their infant feeding work. We depend upon the gratifying results obtained with Dextri-Maltose, cow's milk and water, to win the physicians' confidence in our products. We never tire of serving our friends, and would enjoy the privilege of furnishing you with the following:

PHYSICIAN'S FILE BOX containing data on Diarrheas, Constipation, Regurgitation, Curds, Supplemental Feedings, Diets for Older Children, Diets for Nursing Mothers, Slide Feeding Scale, Prescription Blanks, etc.

GLAD TO SEND SAMPLES ALSO

THE MEAD JOHNSON POLICY

Mead's Infant Diet Materials are advertised only to the medical profession. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own private prescription blank.

MEAD JOHNSON & COMPANY
EVANSVILLE

INDIANA, U.S.A.



Atophan

TRADE MARK

Migraine, Hemicrania, Eyestrain, etc., are all just "Headache" to the patient, and speedy relief is clamored for. But the physician regards "Headache" only as a symptom and wants time to find the underlying cause.

Information, Literature and Ample Trial Quantity from

Atophan is doubly valuable and efficient in these and other forms of "retention" headaches, because of its typical stimulation of the uric acid excretion, and its remarkably prompt and innocuous, analgesic and decongestive action.

SCHERING & GLATZ, INC.
150 Maiden Lane, New York



"HEADACHES"

(Migraine, Hemicrania, Eye-Strain, Etc.)

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

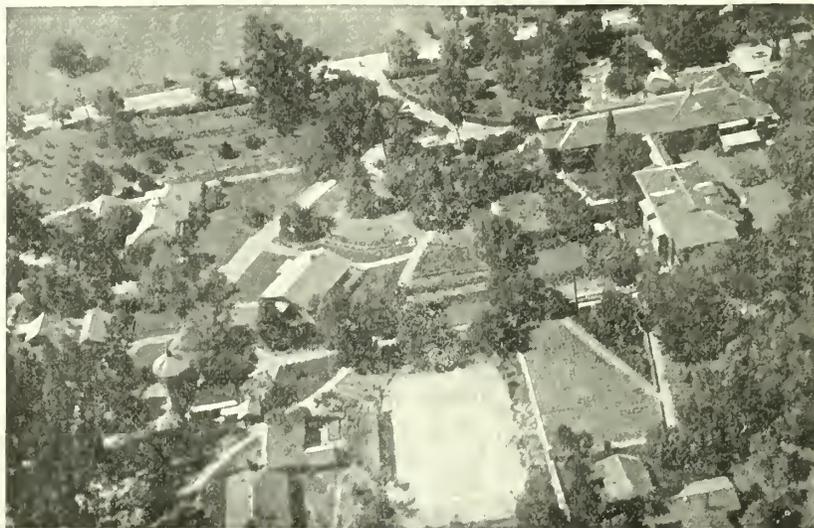
A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

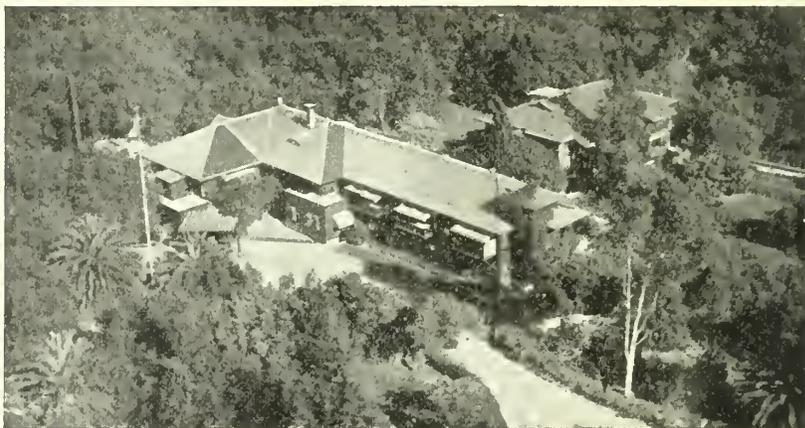
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.

Cuisine Excellent.

Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.

Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.

Rooms With or Without Baths.

Private Bungalows With Sleeping Porches.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

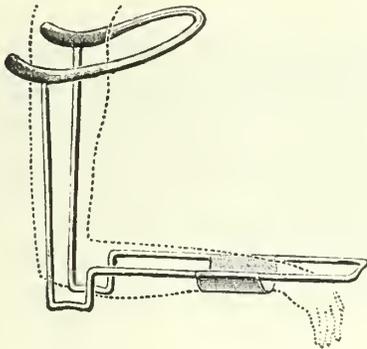
(THE BANNING SANATORIUM)

Banning (Riverside County) California

This well known institution (for the treatment of tuberculosis of the throat and chest) has recently been rebuilt and enlarged. The City of Banning (suffering from phthisiophobia) passed a "zoning" ordinance that forced abandonment of the former site of this sanatorium. A new site was purchased. An injunction was sought to prevent the use of the new site for sanatorium purposes. A temporary injunction was granted but, at the final hearing, this injunction was dissolved and the right to build and maintain the sanatorium was established. Many of the most prominent physicians in the state contributed testimony that enabled us to win the suit. During the progress of these suits the institution found it difficult to provide for patients demanding admission. Now, however, in its new quarters, it is prepared to accept all who apply. To physicians who are unfamiliar with our work we will gladly furnish references to other physicians (in almost every town in California) who have had patients or relatives in this institution. A circular describing conditions and containing rates will be mailed upon request. Address

DRS. KING and BRAMKAMP.

BANNING, CALIFORNIA.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL X-RAY LABORATORY

Thomson Building

Oakland

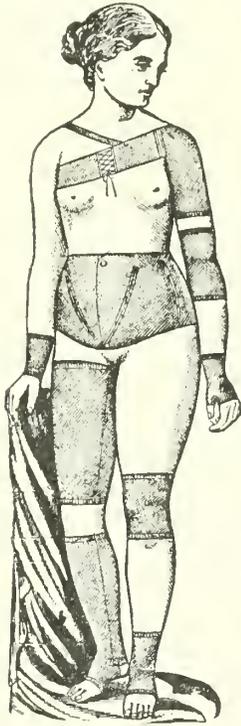
Widemann's Evaporated Goat Milk



Baby
Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
San Francisco, Cal.



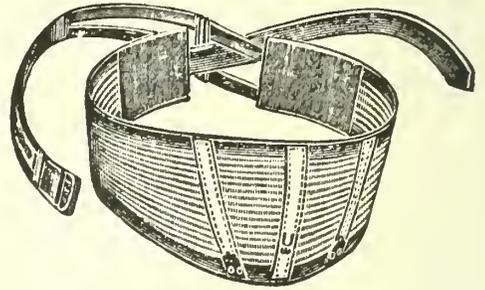
DOCTOR:

Send us your patients needing TRUSSES, ELASTIC HOSIERY, ABDOMINAL SUPPORTERS, ORTHOPEDIC APPLIANCES, etc., and have them properly fitted by our experts.

We specialize in this line of work and guarantee satisfaction.

Hatteroth's Surgical House

232 Powell Street
Second Floor
(Between Geary and O'Farrell)
San Francisco, California
Phone Sutter 749



Keniston & Root

SURGICAL INSTRUMENTS
PHYSICIANS', NURSES', AND
HOSPITAL SUPPLIES
ELASTIC HOSIERY, BELTS,
TRUSSES, ARCH SUPPORTS
TWO STORES
LOS ANGELES and SACRAMENTO

Mail Orders Filled Promptly

W. B. KERN, M.D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DR. HARRY SPIRO

Practice Limited To

CARDIO-VASCULAR DISEASES

300 Coleson Building

212 Stockton Street - San Francisco

Phone Garfield 22

FRESNO BIOLOGICAL DEPOT

412 Bank of Italy Bldg.

Fresno, California

Phone 1434

Night 3083-W

San Joaquin Valley Distributors

Cutter's Biologics

Metz Products. Steripules

Travers Surgical Instruments

Office and Hospital Equipment

MICROSCOPES

Bought
Sold
Exchanged
Repaired

W. O. HAMMER
35 Montgomery St.
San Francisco,
California
Phone Kearny 708

In place of Opium

in true asthma, dysmenorrhea, gall-stone and other colics, hiccough, whooping cough, neuritis, post-partum pains—the therapeutic field is widening logically.

BENZYLETS!

The no-habit, non-toxic, non-narcotic analgesic-antispasmodic; tasteless, no gastric irritation; boxes of 24 globules of the pure drug ethically labelled at your favorite pharmacy.

BENZYLETS!!

SHARP & DOHME



WE CARRY A COMPLETE STOCK
 FURNITURE - SURGICAL INSTRUMENTS
 GLASSWARE - ENAMELWARE
 LABORATORY SUPPLIES
 MICROSCOPES - VIBRATORS
 HIGH FREQUENCY OUTFITS, ETC.
 DISTRIBUTORS OF
 PERFECTION BRAND - SURGEONS'
 GLOVES - CATGUT - THERMOMETERS
 Write Us For Prices

Bischoff's Surgical House
 (The House of Service)
 Oakland, California



SPECIALIZING IN
 OCULISTS' PRESCRIPTIONS
 SINCE 1909

John J. Wooster Co
 Opticians

234 Stockton St.

At Union Square



HOSPITAL FOR CHILDREN AND TRAINING SCHOOL FOR NURSES

A general hospital of 275 beds for women and children. Thirty beds for maternity patients in a separate building, newly equipped.

Complete services of all kinds for women and children. Infant feeding a specialty.

House staff consists of three resident physicians and eight internes.

Accredited by the Council on Medical Education and Hospitals of the American Medical Association.

Institutional member of League for the Conservation of Public Health.

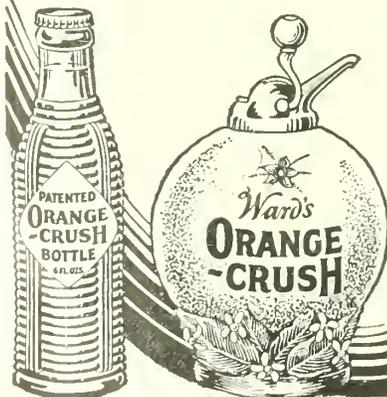
The oldest school of nursing in the West.

Director of Hospital
Dr. Wm. E. Musgrave
Medical Superintendent
Dr. Edna L. Barney
Assistant Superintendent
Mrs. Hulda N. Fleming
Superintendent of Nurses
Miss Ada Boye, R.N.
3700 California Street
San Francisco



Ward's ORANGE-CRUSH LEMON-CRUSH and LIME-CRUSH

*Dependable
Drinks*



SO well-known and well-liked are the "Crushes" that information regarding these drinks should be most interesting to the medical profession. Orange-Crush, Lemon-Crush and Lime-Crush are compounds of fruit oils, fruit juices and citric acid from oranges, lemons or limes, purest sugar and carbonated water. They are guaranteed under all pure food laws, Federal and State.

To make sure that always and everywhere the "Crushes" will be right, there is maintained at Orange-Crush Company's plant a Service Laboratory, modernly equipped, manned by trained chemists. These chemists select all ingredients, direct all production and actively co-operate with bottlers and dealers—to keep the quality of the "Crushes" always up to par. This service pays. It is evidenced by the public's good will toward the "Crushes."

No medical claims are made. Orange-Crush is not offered as an antiscorbutic in infant-feeding. But where wholesome, cooling drinks are desired, our claim is that the "Crushes" are without equal. These drinks are sold in bottles and dispensed at fountains in all principal towns and cities. We will gladly furnish physicians with information regarding the "Crushes." All correspondence will get prompt attention.

Orange-Crush Company Plant and Laboratories,
Chicago
Research Laboratories, Los Angeles
In Canada: Orange-Crush Bottling Co., Ltd., Winnipeg



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M. D.
Medical Director

HAY FEVER MEMORANDA

Series III.

Late Summer Type. Patients whose hay fever develops in mid-August and continues until frost should be tested with the pollens of such weeds as ragweed, goldenrod and the related sunflower. Also with the pollen of the one important late flowering grass, viz., corn, if exposed to same. Together with any pollen of local importance—such as alfalfa in some sections—or cocklebur in others.

Patients whose hay fever continues beyond the pollinating seasons—even into the winter—should be tested with bacterial proteins to locate a possible secondary sensitization of this type.

For those who react to bacterial proteins, specific bacterial vaccines are indicated as supplementary treatment.

ARLCO-POLLEN EXTRACTS

For *Cutaneous Tests* and *Treatment* cover *Early* and *Late Spring* also *Summer* and *Autumn*.

LITERATURE AND LIST OF POLLEN EXTRACTS AND SPECIFIC BACTERIAL VACCINES ON REQUEST.

The Arlington Chemical Co.

Yonkers, N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been proven therapeutically practicable.

U. S. Bureau of Standards Certificate.

Our Departments of Physics and Medicine give instruction in the physics and therapeutic application of Radium.

RADIUM CHEMICAL CO.

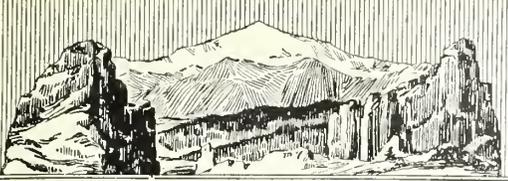
PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Fisgod Building

Astor Trust Bldg NEW YORK Fifth Ave. & 42 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN

Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

**THE RADIUM COMPANY
OF COLORADO, Inc.**

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

| | | |
|---------------------------------------|-----------------------------|-----------------|
| 122 South Michigan Ave. CHICAGO | 10 Union Square NEW YORK | LONDON PARIS |
|---------------------------------------|-----------------------------|-----------------|

FOR SALE—Instruments customarily used in general practice at greatly reduced prices. For particulars write Mrs. J. B. Woodworth, 1024 Campus Ave., Redlands, California.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES
Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street
Between Post and Sutter Streets
SAN FRANCISCO

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiappella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | M. L. Fernandez, Pinole..... | C. T. Wetmore, Hercules..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Iglick, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozler, Susanville..... | R. W. T. Garner, Susanville..... | |
| Los Angeles County Medical Society..... | Walter Brem, Los Angeles..... | Harlan Shoemaker, Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | J. A. Beck, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | Edward F. Donnelly, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | J. H. Lang, Fullerton..... | W. C. Mayes, Santa Ana..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. L. Curtiss, Redlands..... | E. J. Eyttinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | H. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Sliskiyou County Medical Society..... | J. R. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | J. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Bly, Red Bluff..... | |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lela J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

Member Federal Reserve System and Associated Savings Banks of San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

JUNE 30, 1921

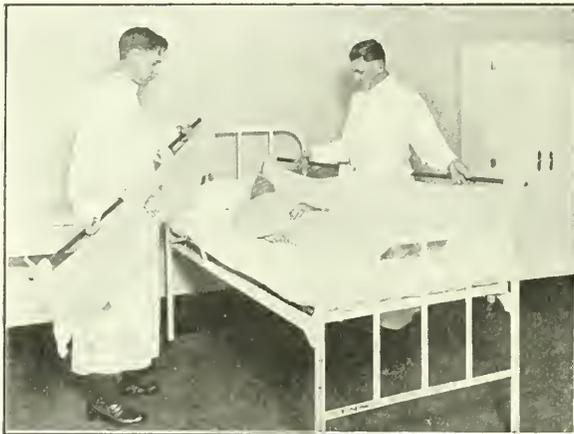
| | | | |
|----------------|------------------------------|-------------------------------|----------------|
| Assets | \$71,383,431.14 | Capital Actually Paid Up..... | \$1,000,000.00 |
| Deposits | 67,792,431.14 | Reserve and Contingent Funds | 2,591,000.00 |
| | Employees' Pension Fund..... | | \$357,157.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.



Taking Stretcher from Beneath the Patient. Leaving Him Free Upon the Bed

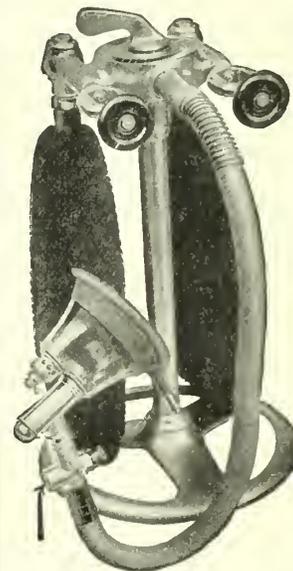
With a GWIN-FLEX patients are placed on the bed or wheeled stretcher without disturbing their position. There is no strain or jar from lifting. Operations may be performed with the Gwin-Flex stretcher on the operating table, under the patient in readiness to lift him.

Noted surgeons regard this stretcher as a very necessary part of the operating room equipment. It insures them against the undoing of their skillful and delicate operations.

PRICE \$16.00

Gwin-Flex Stretcher Co.

660 O'Farrell Street San Francisco



THE BABY CLARKE is appropriately named. It is a portable gas outfit which the physician can very well take with him as part of his obstetrical equipment. There is constant and legitimate call from women patients that some of the terrors of obstetrical pain be relieved. It is the common practice now in hospitals to use gas for this purpose. THE BABY CLARKE will render the same service to the obstetrician and may be carried to the patient's home and used there or anywhere else.

The portable apparatus is automatic, and requires no attention in analgesia, also used in minor operations. Most progressive men are using Nitrous Oxid-Oxygen in their Obstetrics.

Write for Literature or Demonstration

We specialize in GAS OUTFITS, small monthly payments

DOCTORS' SUPPLY CO.

948 Market St., San Francisco
PHONE DOUGLAS 2831

CALCREOSE

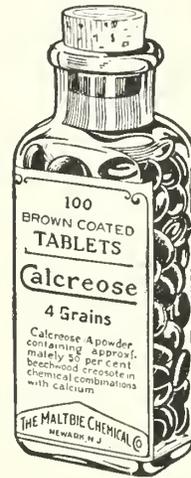
Intestinal Antisepsis

is often called for during the summer months. CALCREOSE, a mixture containing in loose chemical combination approximately equal weights of creosote and lime, acts as an intestinal antiseptic.

CALCREOSE does not have any untoward effect on the stomach, even when given in large doses and for a long period of time; therefore, patients do not object to its administration.

TABLETS—POWDER—SOLUTION

Write for literature and samples



The Maltbie Chemical Company, Newark, N. J.

RADIUM

The Burnett Sanitarium Company of Fresno, California, is fully equipped with a large supply of radium to take care of all kinds of cases.

Emanation tubes will be sent on request of physicians at the rate of \$1.00 per millicurie. A description of the case should accompany the application for emanation tubes.

The medical profession is cordially invited to send their patients to the Burnett, resting assured that not only will their patients receive careful attention, but the physicians themselves will be treated in an ethical manner.

D. H. TROWBRIDGE, M. D.,

General Manager



Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
 X-Ray and High Frequency Coils and Machines
 Interrupterless X-Ray Transformers (Three Sizes)
 Coolidge Tube Transformers and Controls
 Electric Bakers (Limb and Body)
 Ozone Generators—Single, Double and Quadruple
 Electric Light Bath Cabinets with Thermo-Vacuum Space
 Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and
 Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for
 price lists and descriptive literature

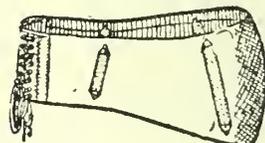
WANTED—Young physician graduate of A1 school, internship, ex-service, general practice, now specializing in Eye, Ear, Nose and Throat, desires to become associated with a busy Oculist and Aurist with the idea in view of forming a partnership. Experienced operator and skilled refractionist. None but men doing scientific work need answer. "Code," care of California State Journal of Medicine.

POSITION WANTED by Neurologist and internist, 31 years old, M. D., Ph. D., in nervous and mental diseases; excellent training in neurology, fair knowledge of internal medicine, desires part or full time place with neurologist or internist. Address C. E. N., care California State Journal of Medicine, 930 Butler Bldg.

PERCY J. MEYER & CO.

379 Geary St., San Francisco

*Surgical Instruments,
 Hospital Supplies
 Established 1908*



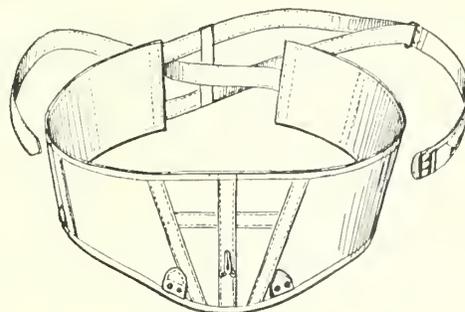
Preferred attention to the fitting of
 Prescriptions for Elastic Hosiery,
 Abdominal Belts, Maternity or
 Surgical Corsets and Post-Operative
 Bandages

*Service by mail
 Lady Attendant*

HOURLY NURSING SERVICE

SAN FRANCISCO COUNTY NURSES'
CENTRAL DIRECTORY

1155 Pine Street
Telephone: Prospect 66
San Francisco, California



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are especially well cared for in a unique and efficient manner. For twenty-one years we have made our business a study, and by confining ourselves to these specialties have developed methods that assure relief to the patient and satisfaction to the doctor.

Every physician should secure a copy of our catalogue, which explains our business in detail. We have the largest and best equipped plant on the Pacific Coast and are the exclusive agents for the famous Drs. Smith's "Honest John" Truss, the only practical device for holding at the internal ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
San Francisco

1522 Broadway
Oakland

Phone Park 8998

E. H. MARKEL Orthopedic Appliances

TRUSSES AND ELASTIC HOSIERY

1138 Mission Street Between 7th and 8th
San Francisco, California

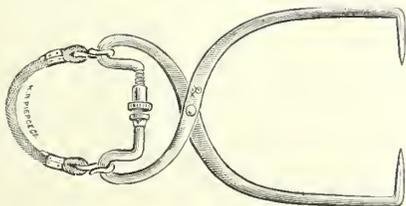
Walters Surgical Company

"Service and Dependability"

441 SUTTER STREET
Between Powell and Stockton Streets
Phone: Douglas 4017

High Grade Surgical Instruments and Hospital Supplies

Trusses Abdominal Supporters
Elastic Hosiery
Orthopedic Appliances
Laboratory Apparatus, Stains



Edmontons Fracture Extension Tongs

STERIPULES

(The Perfect Ampule)

For intravenous, intramuscular and
subcutaneous use

"STERIPULES"

are prepared in modern laboratories under
ideal conditions. Double distilled water;
chemicals of highest purity and alkali-free
glass ampules only are used.

Literature gladly furnished

Stocked complete by

Pacific Surgical Mfg. Co.

320 WEST SIXTH STREET, LOS ANGELES

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

Pacific Wassermann Laboratories



Prompt • Accurate • Dependable

OUR prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over ten years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy.

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diabetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California

State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

SEPTEMBER, 1921

SEPTEMBER CONTENTS

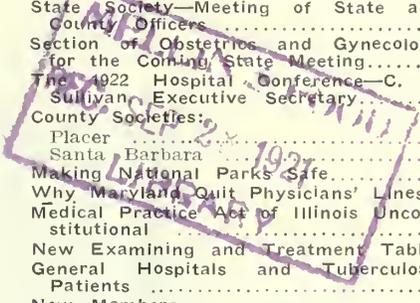
| | | |
|---|-----|---|
| Editorials | | The Etiology of Parenchymatous Nephritis. By George E. Ebricht, M. D. 369 |
| Should the Patient Have the Right of Choice of Physician | 347 | Lesions in the Posterior Urethra, Manifestations of— By L. C. Jacobs, M. D. 370 |
| Medical Education | 348 | Fever, Further Studies in the Nature of— By E. C. Schmidt, M. D., and W. S. Sansum, M. D. 371 |
| Oral Radiography | 348 | Benzyl Benzoate Therapy, Biological Facts. By L. A. Emge, M. D. 374 |
| The Influence of Climate on Tuberculosis | 349 | Psychopathology of Somatic Disease, The. By C. L. Allen, M. D. 377 |
| Relationship Between the State and the Physician in England | 349 | The 1922 Meeting of the State Society |
| Advertising Medicine | 349 | 377 |
| California Association of Radiographers | 350 | Cardiac Irregularities. By W. J. Kerr, M. D., and H. E. Ruggles, M. D. 380 |
| California Association of Medical Social Workers | 350 | California Association of Medical Social Workers. Preamble and Constitution. 381 |
| Anesthesiology Situation in California 351 | | California Association of Radiographers. Preamble and Constitution. 382 |
| Original Articles: | | Book Reviews |
| D'Arsonval Method of Coagulation Necrosis for the Removal of Immense Intravesical Outgrowths of the Prostate, Simple or Malignant. By Granville MacGowan, M. D. 351 | | 384 |
| Investigation into the Oxygen Percentages of Nitrous Oxide Oxygen Anesthesia. By Dorothy A. Wood, M. D., and Mary E. Botsford, M. D. 354 | | Books Received |
| Industrial Accident Practice in California. By T. C. Myers, M. D. 357 | | 384 |
| Leukemia, Acute Lymphatic, With Special Reference to Throat Conditions. By H. D. Newkirk, M. D. 360 | | State Society—Meeting of State and County Officers |
| Uterus, Precancerous Lesion of the. By Wm. G. Moore, M. D. 362 | | 385 |
| Basal Metabolism, Estimations in Cases With Lowered Metabolism. By R. B. Hill, M. D. 363 | | Section of Obstetrics and Gynecology for the Coming State Meeting |
| Hand Deformities, Restoration of Function. By A. Gottlieb, M. D., and L. I. Newman, M. D. 365 | | 385 |
| Vegetative Systems, Nervous and Endocrin to Chemical Medicine. By F. M. Pottenger, M. D. 367 | | The 1922 Hospital Conference—C. J. Sullivan, Executive Secretary. 385 |
| | | County Societies: |
| | | Placer |
| | | 385 |
| | | Santa Barbara |
| | | 385 |
| | | Making National Parks Safe |
| | | 385 |
| | | Why Maryland Quit Physicians' Lines |
| | | 385 |
| | | Medical Practice Act of Illinois Unconstitutional |
| | | 386 |
| | | New Examining and Treatment Table |
| | | 386 |
| | | General Hospitals and Tuberculosis Patients |
| | | 386 |
| | | New Members |
| | | 386 |
| | | Deaths .. |
| | | 386 |

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President H. G. BRAINERD, Los Angeles, President-Elect
 ALFRED C. REED, San Francisco, First Vice-Pres. JOSEPH CATTON, San Francisco, Second Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Editor and Secretary
 CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

- | | | |
|---|--|--|
| FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties. PAUL M. CARRINGTON , San Diego (Term expires 1924) | FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties. FRANK H. PATERSON , San Jose (Term expires 1923) | SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties. EDW. N. EWER , Oakland (Term expires 1923) |
| SECOND DISTRICT — Los Angeles, Santa Barbara, Ventura and Kern Counties. WM. H. KIGER , Los Angeles (Term expires 1922) | SIXTH DISTRICT — San Francisco County. C. G. KENYON , San Francisco, Chairman. (Term expires 1922) | EIGHTH DISTRICT — Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties. JAMES H. PARKINSON , Sacramento (Term expires 1922) |
| THIRD DISTRICT — San Luis Obispo and Monterey Counties. T. C. EDWARDS , Salinas (Term expires 1924) | COUNCILORS AT LARGE: O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); Saxton T. Pope, San Francisco (term expires 1924); C. Van Zwalenburg, Riverside (term expires 1923). | NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties. JAMES H. McLEOD , Santa Rosa (Term expires 1923) |
| FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties. DWIGHT H. TROWBRIDGE , Fresno (Term expires 1924) | | |



HAY-FEVER

Curative Treatment

When used for the treatment of actual attacks of Hay-Fever

Pollen Antigen—*Lederle*

shortens the attack and renders the symptoms more mild. As a rule, the Hay-Fever symptoms begin to be less distressing after 3 or 4 doses of Pollen Antigen have been given and entirely disappear, on the average, after 8 doses. Some cases require a greater number of doses before complete relief is obtained.

LEDERLE ANTITOXIN LABORATORIES

511 FIFTH AVENUE
CORNER OF FORTY-THIRD STREET
NEW YORK CITY

PACIFIC COAST BRANCH
163 JESSIE STREET
SAN FRANCISCO, CALIFORNIA
TELEPHONE KY. 4598

Announcing the Opening of

St. Gothard Convalescent Home

St. Helena, Napa County, California

Selected Nervous Cases Accepted
 No Acoholic, nor Drug Addicts
 Attending Physician, Myron M. Booth

*For particulars address C. & L. Broniscoe, 925 Grove St., San Francisco
 Phone Park 5193*



HOSPITAL FOR CHILDREN AND TRAINING SCHOOL FOR NURSES

A general hospital of 275 beds for women and children.
 Thirty beds for maternity patients in a separate building, newly equipped.

Complete services of all kinds for women and children.
 Infant feeding a specialty.

House staff consists of three resident physicians and eight internes.

Accredited by the Council on Medical Education and Hospitals
 of the American Medical Association.

Institutional member of League for the Conservation of Public
 Health.

The oldest school of nursing in the West.

Director of Hospital
 Dr. Wm. E. Musgrave
 Medical Superintendent
 Dr. Edna L. Barney
 Assistant Superintendent
 Mrs. Hulda N. Fleming
 Superintendent of Nurses
 Miss Ada Boye, R.N.
 3700 California Street
 San Francisco



MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.

SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."

THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.

FOURTH—That vaccination against all three infections does definitely protect against all three.

FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.

SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count

Write for Therapeutic Index Price List

"SPRING ACRES"

2747 Fruitvale Avenue
Oakland . . . California

EXCLUSIVELY FOR THE CARE
OF TUBERCULAR PATIENTS

Privacy, individual service, homelike comforts
and amusements are featured for all patients.
Patients select their own physicians

Rates \$25.00 per week and up

Mrs. L. E. Everson :: :: :: :: Fruitvale 42

DEPENDABLE PRESCRIPTION SERVICE

*Shumate's
Prescription Pharmacies!*

- | | |
|-------------------------------------|------------------------------------|
| 1 Cor. Sutter and Devisadero. | 8 Valencia and 16th Streets. |
| 2 Cor. Haight and Masonic Ave. | 9 California St. and 23rd Ave. |
| 3 Cor. Sacramento and Presidio Ave. | 10 Cor. Bush and Hyde Sts. |
| 4 84 Post Street East of Kearny. | 11 S. P. Bldg., Market Near Ferry. |
| 5 Cor. Carl and Cole Streets. | 12 Clement St. and 2nd Ave. |
| 6 Cor. Union and Steiner Streets. | 13 Polk and Washington Sts. |
| 7 Cor. Powell and Sutter Sts. | 14 Ninth Ave and Judah St. |

PHYSICIANS' PRESCRIPTIONS ACCURATELY DISPENSED

SAN FRANCISCO

Six Good Reasons Why OVALTINE

Rebuilds Tissue & Restores Function

1. It provides adequate utilizable energy value.
2. It contains as building elements the complete proteins, leucosin, bynedestin, caseinogen, ovalbumin, ovovitellin and lactalbumin.
3. It contains the soluble easily digested and assimilated carbohydrates, maltose and lactose.
4. Its enzymes are a powerful aid to digestion.
5. Its mineral constituents efficiently remineralize the patient.
6. Its accessory food factors promote normal metabolism. ✓

Samples and literature mailed upon signed request.

Indications

Convalescence, Phthisis and other wasting diseases, Malnutrition, Malassimilation, the Dyspepsias or where diet reinforcement of easy digestion and assimilation is required as in Fever, Pregnancy or Lactation.

MENHI,
Form of Sekhet.

M14

The Wander Company

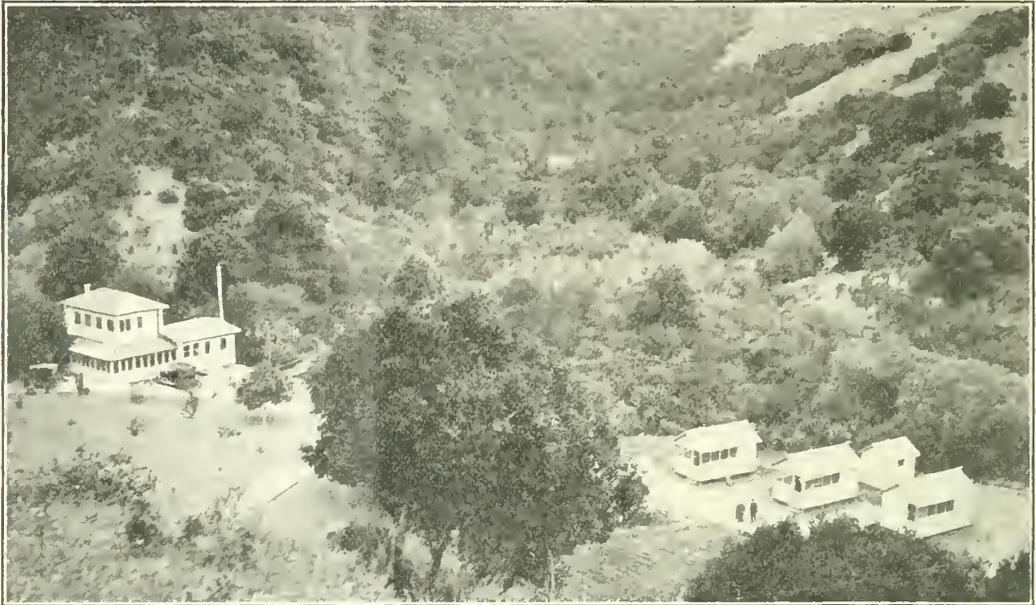
37 South Wabash Avenue, Chicago, Ill.

WORKS: VILLA PARK, ILL.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
 of Hospital
 Atmosphere*
 □



SOME OF THE COTTAGES

□
*Rates
 Reasonable*
 □
Climate Ideal
 □

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
 FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

NORMAL TISSUE EXTRACTS

(Archibald)

LEUCOCYTIC EXTRACT

In acute infections or toxemias.

For the purpose of raising resistance and stimulating defensive and offensive elements.

SPLEEN EXTRACT

In chronic infections, Malaria, Tuberculosis and anemias. Increases both red and white cells and hemoglobin.

LYMPH GLAND EXTRACT

In subacute or chronic conditions in cases where the removal of dense or partially organized inflammatory exudates is a prominent factor.

LYMPHOID EXTRACT

Indicated pre-operatively and in the treatment of all types of hemorrhage. Increasing the number and activity of the blood platelets. Decreasing coagulation time.

ALL NORMAL TISSUE EXTRACTS are for subcutaneous injections.

2 c. c.—6 Ampules \$2.50

Vitalait Laboratory of California

Flood Bldg.
San Francisco - - Pasadena

AMERICAN AMBULANCE

AND NURSES' BUREAU

PHONE MARKET 21

Military Blue Ambulances

City and Country Trips on Application

Rates Reasonable

146 CENTRAL AVE., SAN FRANCISCO



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.

HYDROPATHIC
DEPARTMENT

PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY PRIVATE CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of *Hydrotherapy*,—coupled where indicated with *Nauheim*,—*Radio Active Clay*,—*Calcic Carbonate*,—*Magnesia Carbonate* and *Sulphate Baths*,—*Radium Emanatorium*. Modern modifications of *Zander Apparatus*, *Massage* and *Manipulations*. *Electro-Therapy*, *Thermo-Penetration*, *Actino-Therapy*, *Proctoclysis*, *Corrective Gymnastics* and the application of tabulated *Physical Efficiency Tests*

We are well equipped with modern mechanical devices of scientifically proven efficiency for the *Relief of Suffering*. We maintain a most comprehensive *Service Organization* of *Trained Attendants* rendering *Personalized Attention* to every patient.

Our Institute is specially equipped for the relief of persons suffering from *Chronic Disorders*. We are prepared to take care of *Post-Operative Convalescents* in need of *Reconstruction* and "*Conditioning*" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

Doctor:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern *Physio-Therapy*. Our twenty-three years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

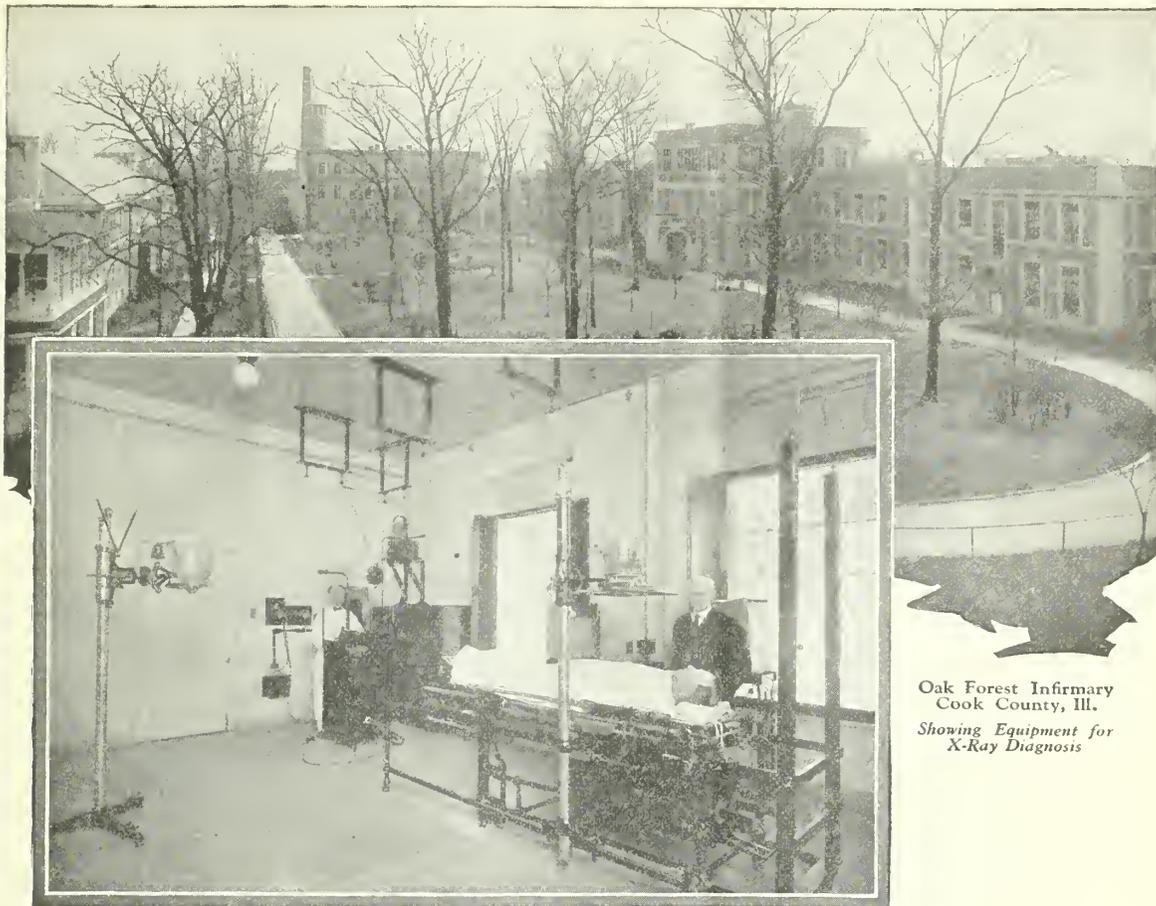
N. A. Karpaty, B. Sc.,
Technical Superintendent.

G. H. Richardson, M. D.,
Medical Director.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

Nathalie Selling, M. D.,
Staff Associate.

Care—Courtesy—Privacy—Comfort. Best references. Inspection invited.



Oak Forest Infirmary
Cook County, Ill.
Showing Equipment for
X-Ray Diagnosis

Guarding a Physician's Reputation

MORE precious than money is reputation to the physician. Yet increased income is usually the result of increased reputation in the practice of medicine—which is as it should be. Reputation is built on *character* and *ability*. It is hard to acquire and easy to lose. Every drug manufacturer, every instrument maker is a guardian of medical reputations. If he fails, the structure reared on character and ability fails. For these reasons the Victor X-Ray Corporation has set for itself a standard higher than that followed by ordinary business firms who deal only with the general public. Every piece of Victor apparatus is made, therefore, not simply according to an honest business man's code of honor, but according to the higher code that physicians obey. However new in design, it is a scientifically tested piece of apparatus—as much so as any

new serum or anti-toxin. It must function trustworthily—not merely for a time, but during its whole, long, useful life.

To this end the Victor X-Ray Corporation established Service Stations in the principal cities to give physicians technical advice. It is the business of these stations not only to assist in keeping Victor X-Ray apparatus in perfect condition but to co-operate with physicians in every legitimate way.

Victor Service also includes the publication of a periodical called "Service Suggestions" in which X-ray progress is recorded. Although published primarily for the benefit of Victor clients it will be sent to physicians who wish to learn of the advances that are made from time to time in radiography. There is no charge for "Service Suggestions."

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago
State Territorial Sales Distributors

MADE IN U.S.A.

SAN FRANCISCO: BUSH ELECTRIC CORPORATION, 334 SUTTER ST.
LOS ANGELES: VICTOR ELECTRIC LOS ANGELES, 930 HILL ST.





Santa Barbara Cottage Hospital and Training School for Nurses

LOCATION, climatic conditions and equipment make this institution of special interest to the public as a place for the care of general Medical and Surgical patients. Its attending staff is thoroughly competent.

METABOLIC DEPT. In a separate wing. A department for the scientific study and treatment of diabetes and other metabolic diseases. Under the direction of Dr. W. D. Sansum. Graduate dietitians and school of dietetics.

OBSTETRICAL DEPT. Also in a separate wing. With nurses devoting full time to the work.

ROENTGEN AND RADIUM DEPT. Fully equipped and under the direction of Dr. H. J. Ullmann.

LABORATORIES. Under the direction of a full-time pathologist and five full-time assistants.

RESEARCH DEPT. Cost of research work carried on here last year, \$17,000.

SCHOOL OF NURSING. Offers an excellent training for young women wishing to take up the nursing profession.

F. R. NUZUM, M. D., Medical Director. MISS F. C. JOHNSON, Superintendent.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

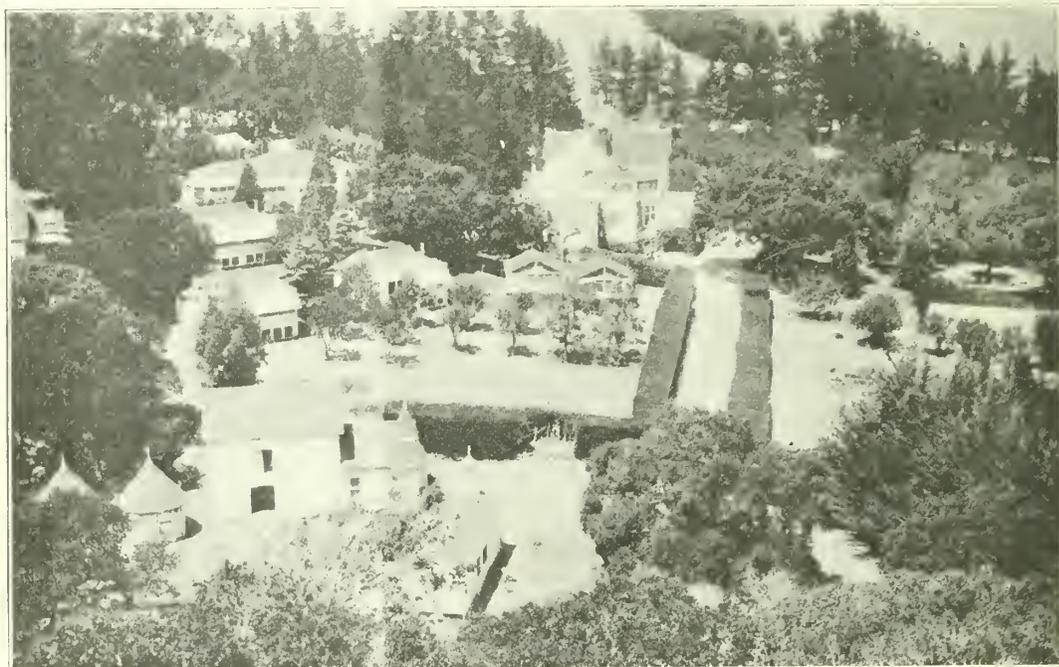
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES
133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

Your Prescriptions

BE VERY CAREFUL WHO FILLS THEM

TAKE NO CHANCES WHEN ADMINISTERING MEDICINE
TO THE SICK

Inferior medicines never saved a life, satisfied a scientific physician or his patient. We use the best medicinal preparations the market affords.

In so doing we are serving the best interests of the doctor, the patient and ourselves.

HOURS

Week Days, 8:30 A. M. to 10 P. M.

Sundays and Holidays,

10 A. M. to 6 P. M.

PRESCRIPTIONS EXCLUSIVELY

WE DELIVER ANYWHERE WITHOUT EXTRA CHARGE
TO YOUR PATIENT

Note: We do not require the physician to overstock himself on Salvarsan in order to get the best discount. Our discount is the same whether he purchases one tube or one hundred tubes.

KECK'S PRESCRIPTION PHARMACIES

UPSTAIRS

135 Stockton St., Near Geary
Phone Sutter 5426

209 Post St., Near Grant Ave.
Phone Garfield 1380

SAN FRANCISCO

The
Management
of an
Infant's Diet

A Temporary Diet in Summer Diarrhea

Mellin's Food . . . 4 level tablespoonfuls
Water (boiled, then cooled) 16 fluidounces

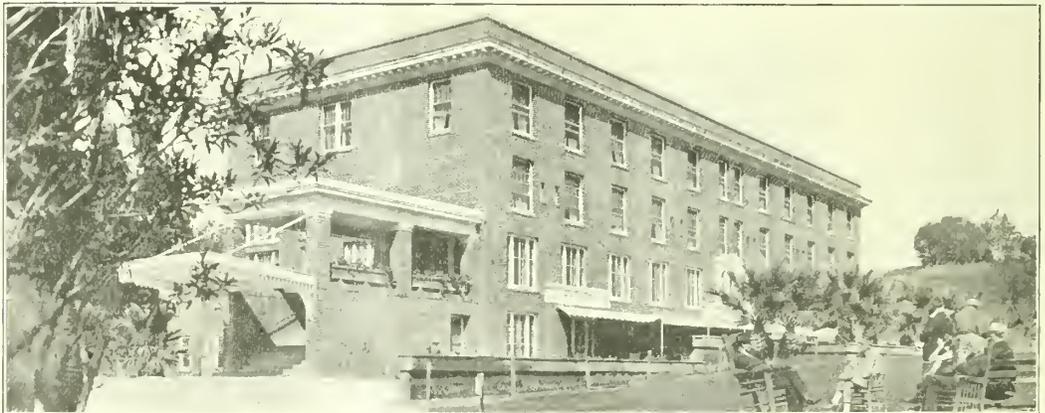
To be given in small amounts at frequent intervals.

Each ounce of this mixture has a food value of 6.2 Calories and furnishes immediately available nutrition well suited to spare the body-protein, to prevent a rapid loss of weight, to resist the activity of putrefactive bacteria, and to favor a retention of fluids and salts in the body tissues.

MELLIN'S FOOD COMPANY,

BOSTON, MASS.

BYRON HOT SPRINGS CALIFORNIA



"THE HOME OF HEALTH"

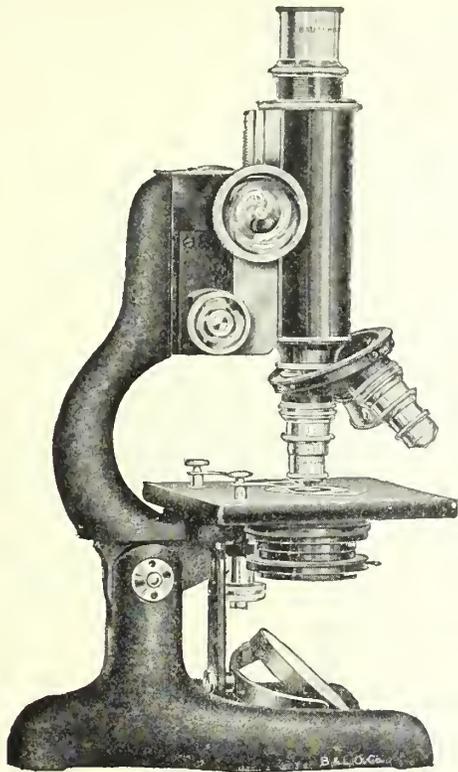
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto from San Francisco

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 660



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.

Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.

Abbe condenser in quick-screw sub-stage.

Circular dust-proof nosepiece.

Side fine adjustment—lever type, ceases to act when objective touches the slide.

Large stage is completely covered with rubber—top, bottom and edges.

Complete in polished hardwood carrying case,

\$132.00

**BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA**

154 SUTTER STREET

SAN FRANCISCO

CALIFORNIA



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

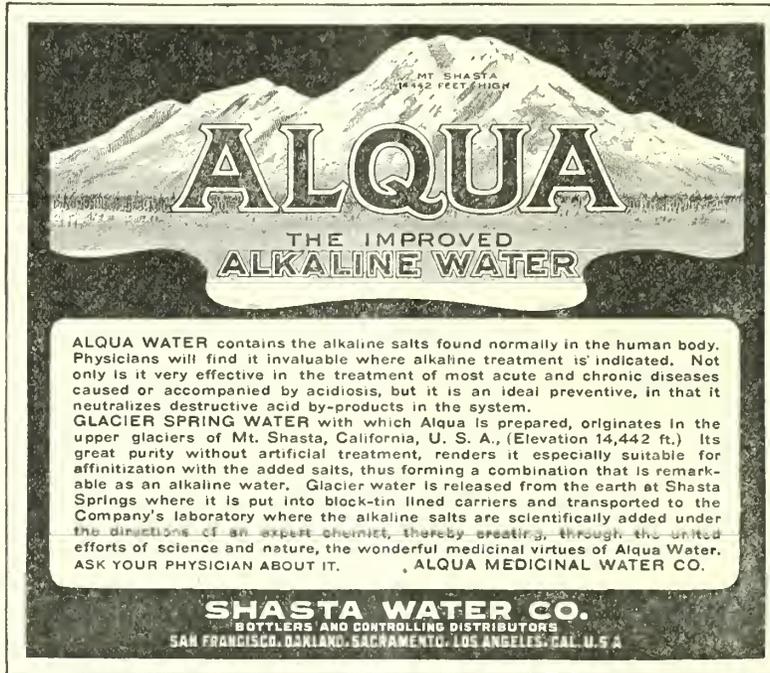
DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT.

ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLETS AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO, OAKLAND, SACRAMENTO, LOS ANGELES, CAL. U.S.A.

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general
nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

At All Druggists

Grageroff & Papazoni

Laboratory of Clinical
Pathology

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.
Phone Pico 3778

Arsphenamine products should be

Readily Soluble
Practically Free from Toxicity
Easy of Administration

Neosalvarsan

(NEOARSPHENAMINE-METZ)

possesses all of these qualities.

Order by either name and if your local dealer cannot supply you communicate with

H. METZ LABORATORIES, Inc.
One-Twenty-Two Hudson Street, New York



For
**Prophylaxis against
 Diphtheria**

DIPHThERIA TOXIN-ANTITOXIN MIXTURE (Diphtheria Prophylactic) is a mixture of Diphtheria Toxin and Antitoxin prepared according to directions laid down by Von Behring, Park and others.

Indications for use:

1. For general prophylaxis against diphtheria in schools and communities, excluding immediate contacts.
2. For permanent immunity against infection, for individuals not recently exposed.
3. In conjunction with a prophylactic dose of diphtheria antitoxin for those who are exposed to diphtheria and desire a longer protection than would result from antitoxin alone.

Contra-indications: (1) It should never be used as a treatment for diphtheria. (2) It should never be used as an immunizing agent for an individual recently exposed, unless a prophylactic dose of diphtheria antitoxin is given at the same time.

Diphtheria Toxin-Antitoxin Mixture (Diphtheria Prophylactic) is given in three subcutaneous injections of one cubic centimeter each, at intervals of about five days. It is supplied in cases of three 1-cc bulbs, without injecting attachment.

Parke, Davis & Company



THE ALPINE SUN LAMP

THE Alpine Sun Lamp illustrated above presents the most convenient source of intense Ultra-Violet Light known at the present time.

Its field of indications covers Tuberculosis in most of its manifestations, superficial skin lesions, nervous diseases, post-operative infections, osteomyelitis, sluggish ulcers, and conditions resulting from faulty metabolism.

Standard

SINCE the advent of the Alpine Sun Lamp over a decade ago the high standard set for it has always been upheld.

Long researches by us and clinical tests made by users, have made this lamp an instrument of physical and mechanical precision, particularly typified by the model shown in the accompanying illustration.

And the consistent good work continues!

Send for Literature

Hanovia Chemical & Mfg. Co.
San Francisco, Cal.

EXECUTIVE OFFICES
NEWARK, N. J.

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases

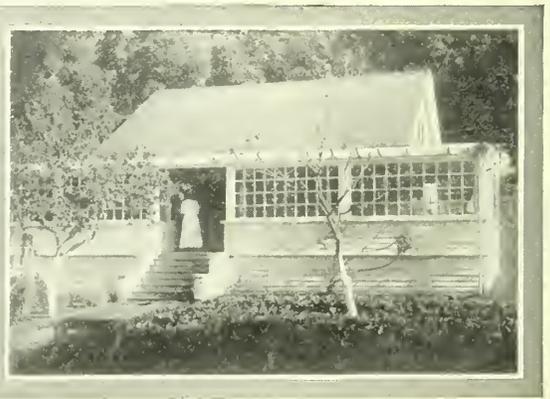


22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS



FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

OR

LOUIS BOONSHAFT, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

A BANKING SERVICE FOR THE MEDICAL PROFESSION

An Investment Department that can help you solve problems in buying and selling securities.

A Savings Department for your savings and surplus funds.

A Commercial Department for your checking account.

A Trust Department,—the largest in the West,—that can act as executor, trustee or custodian of your properties.

Safe Deposit Vaults for the safekeeping of your valuables.

THIS IS THE COMPLETE BANKING SERVICE THAT WE OFFER YOU.

UNION TRUST COMPANY

COMMERCIAL SAVINGS OF SAN FRANCISCO SAFE DEPOSIT TRUST
MARKET ST. AND GRANT AVE.

Pacific Surgical Gown Co.

Manufacturers of

Dental Gowns
Operating Gowns
Instrument Rolls
Leg Holders
Cushions for all
Operating Tables



Operating Gown

1626 EDDY STREET
San Francisco California
West 2715

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

*For Immediate Delivery***PITUITOL**

Under this distinctive trade name we offer a solution of the POSTERIOR PITUITARY LOBE, of greater concentration than the U. S. P. requirement.

PITUITOL—Obstetrical

Approximately 3 times U. S. P. strength
in ½ CC and 1 CC Ampoules

PITUITOL—Surgical

Approximately 6 times U. S. P. strength
in 1 CC Ampoules

Our Pituitary Extracts are approved by the Council on Pharmacy and Chemistry.
Physiologically standardized, dated, sterile, positive action.

“Specify WILSON’S”

Prepared from Abattoir to finished Package by

*“This mark***THE WILSON LABORATORIES***your guarantee”*

4213 South Western Boulevard, Chicago, Ill.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments

Southern California

DR. I. B. LINEBARGER

1000 Lyon St., Los Angeles

Phones: Main 5790-Auto 10155

Northern California

D. BLAINE MORGAN

84 Second St., San Francisco

Phone: Kearny 1416

Stock carried in both cities

May we place you on our mailing list for “The Autacoid and Suture,” our house journal devoted to Glandular Therapy?

Write for Catalog**NOTICE**

Best results from use of **BIOLOGICAL PRODUCTS** are only possible through proper refrigeration. We guarantee proper temperature and care at all times. We invite inspection of our **SPECIAL BIOLOGICAL REFRIGERATOR.**

Distributors of **SQUIBB’S BIOLOGICAL PRODUCTS****BUTLER BROTHERS’ PHARMACY**

Professional Pharmacists

Suite 807-9-11 Flood Bldg., Opp. Elevator

Powell and Market Streets, San Francisco, Cal.

Phone: Douglas 163
Private Exchange

TRAINER - PARSONS OPTICAL CO.**Dispensing Opticians**

186 GEARY STREET - - - SAN FRANCISCO

Near Stockton. Opp. City of Paris

Telephone Kearny 2767

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

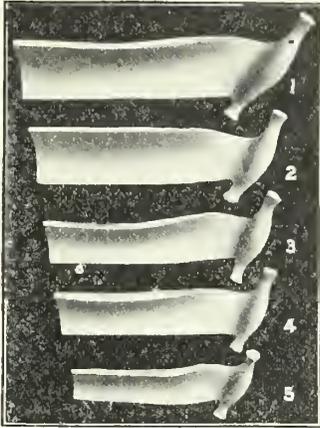
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





**Walker's Colles
Fracture Splints
NOW IN STOCK**

**TRAVERS
Surgical Co.**

SAN FRANCISCO, CAL.

Phone Sutter 4 6 5 1 372 Sutter Street

**SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES**

**Our Stock is
Complete**

CYSTOSCOPES AND ACCESSORIES
MICROSCOPES AND SUPPLIES
SPLINTS OF ALL KINDS
LUER SYRINGES AND NEEDLES
PHYSICIAN'S OFFICE FURNITURE
ELECTRIC DIAGNOSTIC INSTRUMENTS

If It Is Surgical

We Have It

THE ENDOCRINES?

The Armour Laboratory!

Suprarenal Cortex,
powder and three grain
tablets.

Suprarenal Medulla,
powder and one grain
tablets.

Placental Substance,
powder and five grain tablets.

Suprarenalin Solution, 1:1000,
Stable, uniform and non-irritating,
water white and free from preserva-
tives.

Suprarenalin Ointment, 1:1000,
very bland with lasting effects.



Pituitary Liquid,

Physiologically Stand-
ardized — obstetrical $\frac{1}{2}$
c. c. Surgical 1 c. c.
ampoules.

**Sterile, Surgical Catgut —
Ligatures**

Plain, and Chromic (boilable),
60 inch and 20 inch.
Iodized (nonboilable) 60 inch.

"Just what a ligature should be."

Literature Upon Request

ARMOUR AND COMPANY
CHICAGO



The Most Ethical
Prescription Pharmacy
in
San Francisco

Accuracy, Purity, Quality
and Immediate Service

Broemmel's Prescription
Pharmacy

California and Steiner Sts. West 558-559
and Manufacturing Chemists
San Francisco, California

SAVE MONEY ON
YOUR **X-RAY** SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens, Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

ALTA SANATORIUM

For the treatment of Pulmonary Tuberculosis

ALTA (PLACER CO.) CALIFORNIA

Invigorating climate. Beautiful scenery
Strict medical attention. Moderate terms

Apply for Particulars

Phone Kearny 4591

F. L. HEIM & SON

Manufacturer and Importer of

FINE SHOES

Sole Agent for

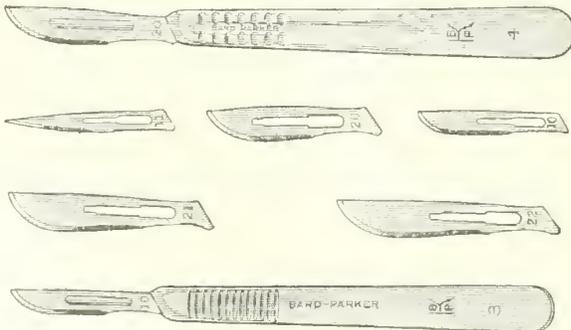
DR. A. REED'S CUSHION SHOE

Fine Grades in Correct Styles and
Orthopedic Shapes

228 POWELL STREET

Near Geary

San Francisco, Cal.



MAIL ORDERS FILLED PROMPTLY

Bard Parker

OPERATING KNIVES

Blades \$1.50 the dozen

Handles \$1.00 each

Keniston & Root

PHYSICIANS' SUPPLIES

418 W. 6th St. } & { 1010 10th St.
Los Angeles } & { Sacramento

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.
Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM.
Monrovia, California

**MEDICAL SUPERINTENDENT
OLIVE VIEW
TUBERCULOSIS SANATORIUM.**

Salary: \$250 to \$300 per month, with full maintenance, furnished house, heat, light, etc.

The Civil Service Commission of the County of Los Angeles will hold an open competitive examination (at centrally located points as necessary) for the above position, September 20, 1921. Qualified tuberculosis specialists of administrative ability are invited to compete. For particulars address immediately, 1007 Hall of Records, Los Angeles, Cal.

Phone 667-72

Appointment only

If no answer call
607-89 or Main 7675

Dr. Don P. Flagg

MEDICAL PSYCHOLOGIST

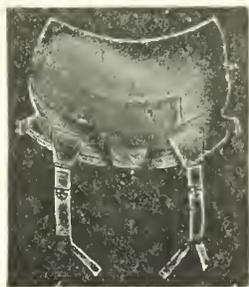
Neurology and Psychiatry, Nervous Children
406 AUDITORIUM BLDG., LOS ANGELES, CAL.
5th and Olive Sts.

Wishes to announce the opening of a laboratory for vocational guidance, fitness for occupation being determined by psychological, nervous and mental tests, neurology and psychiatry, nervous children.

WANTED—In eye, ear, nose and throat. association in group, position as assistant or partnership, or independent location; 35; single; A. B., M. D., 1912; three years general internship in New York hospitals; five years general practice in South America; speak Spanish; post-graduate special training in New York City; have considerable equipment; have California license. Address Dr. W. H. Gardiner, 930 Butler Bldg., S. F., care State Medical Society.

FOR SALE—\$5000 a year country practice. Married man doing surgery can double this. Good offices, low expense; ideal climate. Can be had for an investment of \$350 up. Address Dr. L. J. M., California State Journal of Medicine.

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

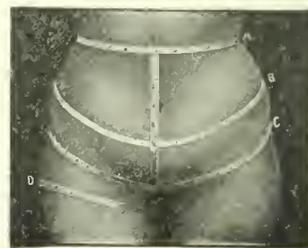


Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of

Crutches Sold or Rented
Arch-Support Fitting a Specialty

ARTIFICIAL LIMBS and ORTHOPEDIC APPLIANCES

Bonded Manufacturers for U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

QUALITY GARMENT SHOP

We manufacture and make to order

SURGEONS' GOWNS, DENTISTS' SMOCKS, NURSES' UNIFORMS, ETC.

511 Sutter St.
Near Powell

Phone Kearny 1271

1023 Fillmore St.
Near McAllister

Phone Market 8125

SAN FRANCISCO

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco
Phones: Sutter 936-937

MANUFACTURERS

Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enameled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400

SAN FRANCISCO

In Case of Hernia

Prescribe the
Benjamin Natural Support

A visit to the office of M. J. Benjamin will convince you that, where an operation is impracticable, there is only one other thing for hernia.

That is the Benjamin Natural Support Principle. Designed to hold the worst rupture securely, without pushing into muscle wall or impairing circulation. Made complete for each case to satisfy individual requirements.

Mr. Benjamin gives his personal attention to each case, assuring that hernia will be correctly held.

When you think of a support for any form of hernia (natural or post-operative)—think of

M. J. BENJAMIN

Suite 214 Douglas Bldg.

Third and Spring Los Angeles

Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES

1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.

Phone Franklin 4556

HERMANN BARTH

Architect

PHELAN BUILDING

Specializing in Hospital Work

SAN FRANCISCO

Telephone Garfield 847

Through twenty-three years of fidelity to a trust

In a world of changing values, certain names have come to represent authority, a standardized reliability as continuous and lasting as the flight of time.

In professional protection The Medical Protection Company is unquestionably predominant.

Twenty-three years of experience and prestige gives us access to unlimited facilities for specialized service. Infinite and constant research, painstaking accuracy, an intimate knowledge of all phases of the duties to be performed for a client of this organization, and a cherished reputation to uphold, all converge to the expenditure of our best efforts to merit the confidence placed in us by the profession.

FOR MEDICAL PROTECTIVE SERVICE
HAVE A MEDICAL PROTECTIVE CONTRACT

The Medical Protective Co.

Fort Wayne, Indiana

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco
Phone Fillmore 4160

WANTS POSITION OR LOCATION—Experienced physician, graduate of Class A medical school, well trained in general X-ray work, wishes a position or a location. Address D. G. A., P. O. Box 1149, El Paso, Texas.

Doctor:---

The science of collecting has been our study for twelve years, and there are few who have devoted more time, money and energy to their profession.

If we can be of service to you, mail us your statements of accounts; or, better still, call on us.

"WE GET THE COIN"—"WE PAY"

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.
Citizens National Bank Building, Los Angeles
Phone 60563



KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. An adequate night nursing service maintained. Sound-proofed rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to

KENILWORTH SANITARIUM
Kenilworth Illinois



SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

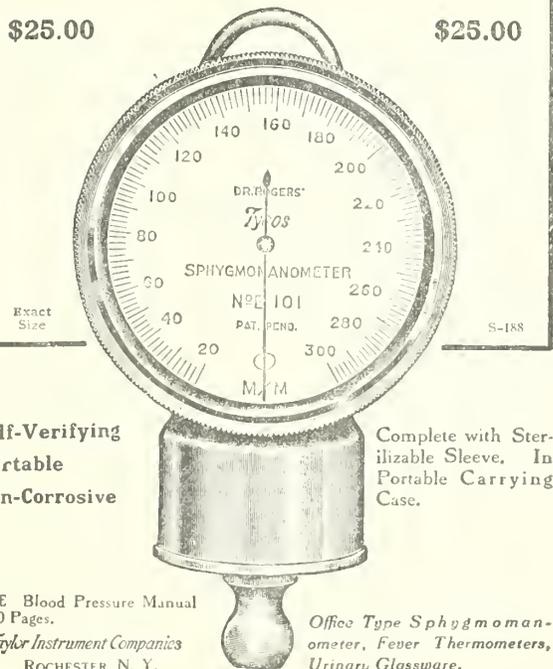
OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

Tycos Sphygmomanometer

\$25.00

\$25.00



Self-Verifying
Portable
Non-Corrosive

Complete with Sterilizable Sleeve. In Portable Carrying Case.

FREE Blood Pressure Manual—40 Pages.

Taylor Instrument Companies
ROCHESTER, N. Y.

Office Type Sphygmomanometer, Fever Thermometers, Urinary Glassware.



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

FRANKLIN W. McCORMACK**RADIOGRAPHER**

Referred Cases Only

318 HOWARD BLDG., 209 POST ST.
SAN FRANCISCO
Telephone Sutter 2540

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco

**Dickson-Bull
Artificial Limbs**

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue
Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Office Phone Douglas 567

Res. Phone West 3721

DR. ETHAN H. SMITH**Orthopaedic Surgery**

HOURS 2 to 4 P. M.

Mornings and Sundays by Appointment
Residence Office

2617½ OCTAVIA ST.

701 PHELAN BLDG.
Grant Ave. and Market

The Benzyl Antispasmodics

In the time that has lapsed since
June, 1918, when

Hynson, Westcott & Dunning
introduced

**Solution of Benzyl Benzoate
—Miscible, H. W. & D.**

many various forms of Benzyl esters and imitations of the original product have appeared. The claims for these preparations are as varied as their number and to some extent at least have served to confuse the medical profession as to the value of Benzyl therapy. For complete information as to the proper use of Benzyl preparations and a list of their indications, write

Hynson, Westcott & Dunning
BALTIMORE

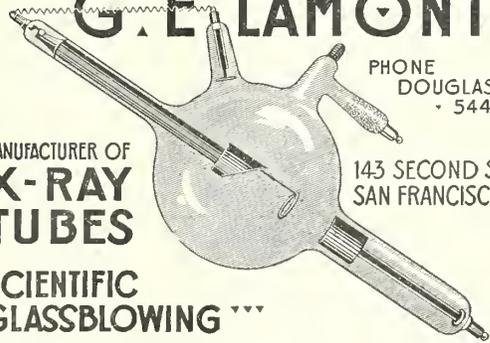
G. E. LAMONT

PHONE
DOUGLAS
5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING**

**CORONA**

The Personal Writing Machine
DOCTORS!

Save money and avoid mistakes by typing your own bills, case records, prescriptions, manuscripts and correspondence.

\$50 WITH CASE



Corona Typewriter Co., Inc.

Phone
Sutter 1538

546 MARKET ST.
San Francisco



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. CHAS. S. FREEDMAN, Medical Director

PHONE MARKET 2048
PHONE MARKET 331

Cars Nos. 6, 7, and 17

For the treatment of alcoholic and drug addictions,
mental and nervous diseases.

This sanitarium is open to all reputable physicians.
Sound-proof rooms. Hydropathic equipment.

The advice of the hospital staff is always at the
disposal of the patients' physicians.

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

HELIOS

SUN CURE
SANITARIUM
SYSTEM ROLLIER

SAN RAFAEL, Marin County, Calif.

TELEPHONE S. R. 519

HELIO THERAPY or treatment by scientific application of Sun Rays is recognized by leading surgeons as a most efficient method of treating Bone and Joint Tuberculosis, Anemia and kindred diseases. Results, even in severe Hip and Spine cases, have been most gratifying. We will gladly co-operate in cases not yielding to ordinary methods.

For rates and particulars please apply

Charles L. Freytag, M. D.,

MEDICAL DIRECTOR
Schroth Building, San Francisco, Cal.
Telephone Garfield 148

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$4.00; Canadian, \$5.00.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 50 cents.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. **Currency should
not be sent unless the letter is registered.** Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. **Manuscript should not be rolled.**

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

CONVENIENT

A Complete Food

Requires Neither Cooking
Nor the Addition of Milk

"Horlick's"

The Original Malted Milk

Obviates many of the difficulties that are
generally connected with the prescribed
feeding of infants.

Easily prepared to meet the changing
needs of the individual infant.

Very reliable—prescribed by the medical
profession for over one-third of a century.

Avoid Imitations

Samples and Printed Matter Prepaid

HORLICK'S - - Racine, Wis.

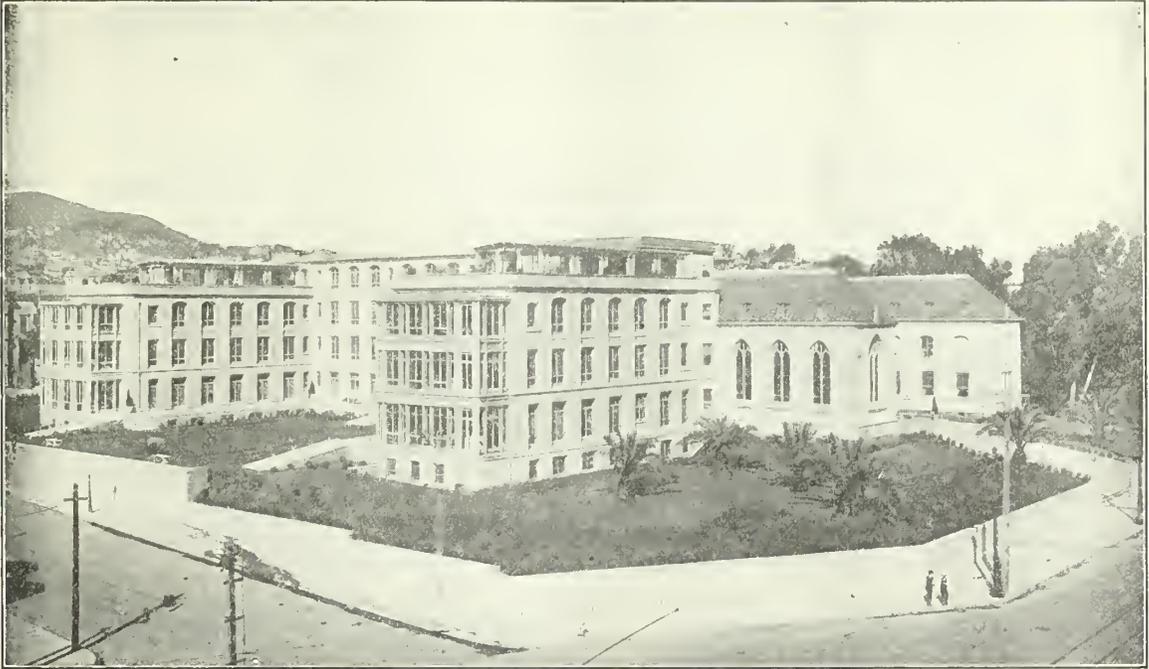
WM. H. WEEKS

Architect

75 POST
STREET

SAN
FRANCISCO

Largest Architectural Organization in
the West Specializing in Hospitals
and Public Buildings

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.**THE PUBLIC SERVICE STAFF**

General Surgery—Alanson Weeks, M. D.; A. B. Kilgore, B. S., M. D. **Orthopedic Surgery**—G. J. McChesney, A. B., M. D.; R. Patek, M. D. **Urology**—W. P. Willard, M. D.; H. Partridge, M. D. **Ophthalmology**—E. F. Glaeser, M. D.; G. S. Wrinkle, M. D. **Otorhinlaryngology**—H. A. Fletcher, B. S., M. D.; K. Pischel, M. D. **Anesthesiology**—E. A. Leavitt, M. D.; Zilda Pettis, M. D. **General Medicine**—E. S. Kilgore, B. S., M. D.; E. L. Ochsner, M. D. **Neuropsychiatry**—H. W. Wright, M. D. **Dermatology**—B. Stone, M. D. **Pediatrics**—L. J. Schermerhorn, M. I. **Obstetrics and Gynecology**—W. G. Moore, M. D.; Armstrong Taylor, M. D.; W. H. Hill, M. D. **Pathology**—E. V. Knapp, M. D.; H. E. Foster, M. D. **Roentjenology**—J. H. Rehfisch, A. B., M. D. **Radiology**—L. Taussig, A. B., M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent

VEN. J. A. EMERY, Secretary and Treasurer
W. H. HILL, M. D., Resident Physician

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

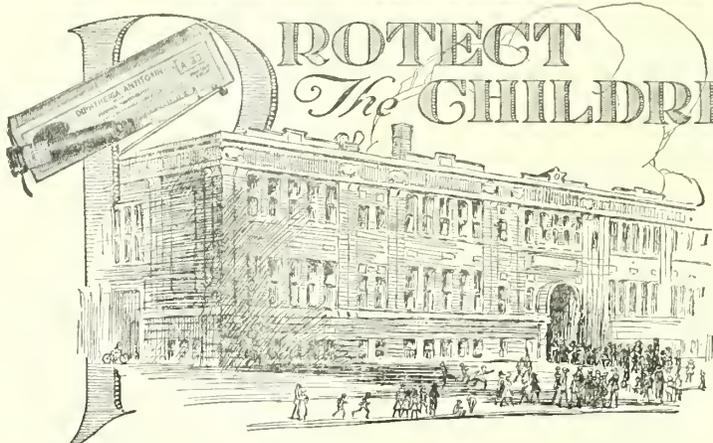
Sherman's polyvalent vaccines are dependable antigens

Local Agent:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY

LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"



PROTECT *The* CHILDREN

*School
Days are
Here*

DIPHTHERIA ANTITOXIN and SMALLPOX VACCINE are in demand. Physicians will be called upon to stem the tide of epidemics; emergencies will arise; fresh, dependable biological products will be wanted in a hurry.

Lilly's Diphtheria Antitoxin is a purified, concentrated, globulin solution. It will meet your most exacting requirements. You will find the package unusually convenient to handle. Lilly's Smallpox Vaccine can be depended upon to give the maximum "takes" in primary vaccinations if it has been properly stored.

ORDER DIPHTHERIA ANTITOXIN BY NUMBER

Package A-14, 1000 units in syringe.
 Package A-20, 3000 units in syringe.
 Package A-27, 5000 units in syringe.
 Package A-33, 10,000 units in syringe.

ORDER SMALLPOX VACCINE BY NUMBER

Package A-35, 20,000 units in syringe.
 Package A-34, 21,000 units in ampoule with apparatus for intravenous injection.

V-781-In packages of 5 capillary tubes with scarifier. V-785-Package containing 1 complete vaccination with scarifier.

Your Druggist Can Supply You

ELI LILLY & COMPANY, Indianapolis, U. S. A.



Infant Feeding *Diet Materials*

DIARRHOEAS

in
Bottle-Fed Infants

Advertising space is too limited to carry intelligent suggestions for feeding babies that have Diarrhoea

PLEASE WRITE FOR BOOKLET NO. 88 AND CARD INDEX

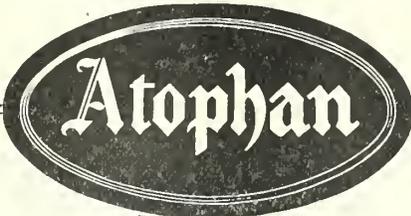
So we have prepared a booklet and a card index which give corrective diets in the various types of Diarrhoeas the physician meets with in private practice.

THE OUTFIT IS GRATIS
SENT TO PHYSICIANS ONLY

THE MEAD JOHNSON POLICY

Mead's Infant Diet Materials are advertised only to the medical profession. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own private prescription blank.

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.



Atophan

TRADE MARK

Not a "hit and miss" relief of pain and congestion at the expense of the heart, kidneys, intestines and nervous system, like the old-time coal-tar derivatives.

Information, Literature and Ample Trial Quantity from



But the promptest and most reliable analgesic and decongestive action so far known, with notable freedom from heart depressant, kidney-irritant, constipating and cumulative toxic by-effects.

SCHERING & GLATZ, INC.
150 Maiden Lane, New York

NEURALGIA - NEURITIS LUMBAGO - SCIATICA

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

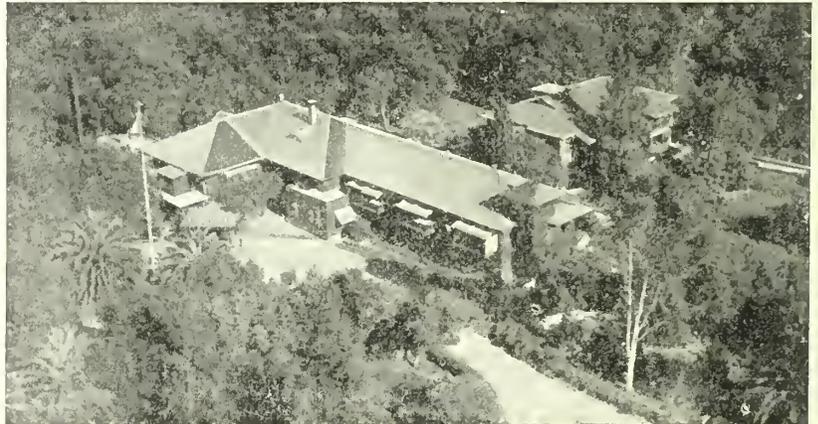
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.
Cuisine Excellent.
Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.

Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.
Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

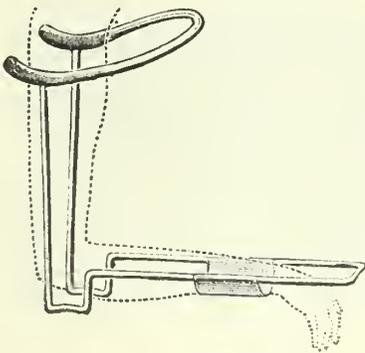
(THE BANNING SANATORIUM)

Banning (Riverside County) California

This well known institution (for the treatment of tuberculosis of the throat and chest) has recently been rebuilt and enlarged. The City of Banning (suffering from phthisiophobia) passed a "zoning" ordinance that forced abandonment of the former site of this sanatorium. A new site was purchased. An injunction was sought to prevent the use of the new site for sanatorium purposes. A temporary injunction was granted but, at the final hearing, this injunction was dissolved and the right to build and maintain the sanatorium was established. Many of the most prominent physicians in the state contributed testimony that enabled us to win the suit. During the progress of these suits the institution found it difficult to provide for patients demanding admission. Now, however, in its new quarters, it is prepared to accept all who apply. To physicians who are unfamiliar with our work we will gladly furnish references to other physicians (in almost every town in California) who have had patients or relatives in this institution. A circular describing conditions and containing rates will be mailed upon request. Address

DRS. KING and BRAMKAMP.

BANNING, CALIFORNIA.



Humerus Extension Splint

(JONES)

This splint can be applied to either right or left side. Traction to be applied at elbow.

We also make other splints as used by Col. Sir Robert Jones

C. H. HITTENBERGER CO.

1103 Market Street - - - San Francisco, Cal.

510 Thirteenth Street - - - Oakland, Cal.

MAKERS OF

ARTIFICIAL LIMBS, ORTHOPEDIC BRACES, ELASTIC STOCKINGS AND ABDOMINAL SUPPORTERS.

Lakeside 2808

P. L. ANSELL

X-RAY LABORATORY

Thomson Building

Oakland

Widemann's Evaporated Goat Milk



Baby
Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
San Francisco, Cal.

DR. ALFRED C. REED

350 POST ST. SAN FRANCISCO
Telephone Kearny 296

Practice Limited to
Internal and Tropical Medicine

Office Phone Main 2068

DR. WILLIAM H. KIGER**Diseases of Rectum and Colon**

Hours by Appointment

Suite 711-712 Pacific Mutual Bldg.
523 WEST SIXTH ST., LOS ANGELES

Office Phone
Sutter 5966

Residence Phone
Sutter 700

DR. LIONEL D. PRINCE

Practice limited to

Orthopedic Surgery

368 FLOOD BLDG., SAN FRANCISCO
Hours: 2 to 4

Residence Telephone Pacific 8336

DR. JOHN ZIEG

ROOM 867 FLOOD BUILDING

Hours: 2 to 4—Telephone Kearny 788
870 MARKET STREET, SAN FRANCISCO, CAL.

W. B. KERN, M.D.

Recent Medical Superintendent, Norwalk
(Cal.), State Hospital, and previously Medical
Superintendent Nebraska State Hospital for
the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DR. HARRY SPIRO

Practice Limited To

CARDIO-VASCULAR DISEASES

300 Coleson Building
212 Stockton Street - San Francisco
Phone Garfield 22

FRESNO BIOLOGICAL DEPOT

412 Bank of Italy Bldg.

Fresno, California

Phone 1434

Night 3083-W

San Joaquin Valley Distributors

Cutter's Biologics

Metz Products. Steripules

Travers Surgical Instruments

Office and Hospital Equipment

MICROSCOPES

Bought
Sold
Exchanged
Repaired

W. O. HAMMER
35 Montgomery St.
San Francisco,
California
Phone Kearny 708

32 years old and still perfectly soluble

In April, 1921, a physician of Lawrence, Mass., used one of our HT'S of morph. sulph. 1-8 that we had sent to him as a sample way back in 1889 and he found it just as soluble as a freshly made tablet.

It is such practical proofs that seemingly warrant our being called

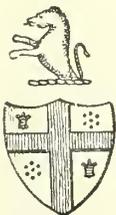
“the hypodermic tablet people”

SHARP & DOHME



WE CARRY A COMPLETE STOCK
FURNITURE - SURGICAL INSTRUMENTS
GLASSWARE - ENAMELWARE
LABORATORY SUPPLIES
MICROSCOPES - VIBRATORS
HIGH FREQUENCY OUTFITS, ETC.
DISTRIBUTORS OF
PERFECTION BRAND - SURGEONS'
GLOVES - CATGUT - THERMOMETERS
Write Us For Prices

Bischoff's Surgical House
(The House of Service)
Oakland, California



SPECIALIZING IN
OCULISTS' PRESCRIPTIONS
SINCE 1909

John J. Wooster Co
Opticians

234 Stockton St.

At Union Square

Portland Surgical Hospital



THE PORTLAND CONVALESCENT HOSPITAL, 862 Marshall St.
Miss Elta Hill, Superintendent



THE PORTLAND SURGICAL HOSPITAL, 611 Lovejoy
Mrs. Tom Richardson, Superintendent

**Hospitals operated co-ordinately for the Clinic of
Drs. Coffey, Sears, Johnston and Payne**

Downtown Offices: 11th Floor, Stevens Building
PORTLAND, OREGON



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M. D.

Medical Director

HAY FEVER MEMORANDA

Series III.

Late Summer Type. Patients whose hay fever develops in mid-August and continues until frost should be tested with the pollens of such weeds as ragweed, goldenrod and the related sunflower. Also with the pollen of the one important late flowering grass, viz., corn, if exposed to same. Together with any pollen of local importance—such as alfalfa in some sections—or cocklebur in others.

Patients whose hay fever continues beyond the pollinating seasons—even into the winter—should be tested with bacterial proteins to locate a possible secondary sensitization of this type.

For those who react to bacterial proteins, specific bacterial vaccines are indicated as supplementary treatment.

ARLCO-POLLEN EXTRACTS

For *Cutaneous Tests* and *Treatment* cover *Early* and *Late Spring* also *Summer* and *Autumn*.

LITERATURE AND LIST OF POLLEN EXTRACTS AND SPECIFIC BACTERIAL VACCINES ON REQUEST.

The Arlington Chemical Co.

Yonkers, N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been proven therapeutically practicable.

U. S. Bureau of Standards Certificate.

Our Departments of Physics and Medicine give instruction in the physics and therapeutic application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Historic Trust Bldg NEW YORK Fifth Av. 4 + 2 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.

Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

122 South Michigan Ave. CHICAGO
50 Union Square NEW YORK
LONDON
PARIS

LOCATION WANTED—Graduate University of California (two degrees) desires location doing obstetrics and infant feeding with hospital group. Thirty-one years old, married; experience unusually extensive. Address A. F. B., care California State Journal of Medicine.

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES
Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street
Between Post and Sutter Streets
SAN FRANCISCO

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. L. Hamilton, Chico..... | J. O. Chiappella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | M. L. Fernandez, Pinole..... | L. St. John Hely, Richmond..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Igliek, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | |
| Los Angeles County Medical Society..... | Walter Brem, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | J. A. Beck, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | Edward F. Donnelly, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | J. H. Lang, Fullerton..... | W. C. Mayes, Santa Ana..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. L. Curtiss, Redlands..... | E. J. Eyttinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | H. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Coltonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | J. R. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | J. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Bly, Red Bluff..... | |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lela J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

Member Federal Reserve System and Associated Savings Banks of San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

JUNE 30, 1921

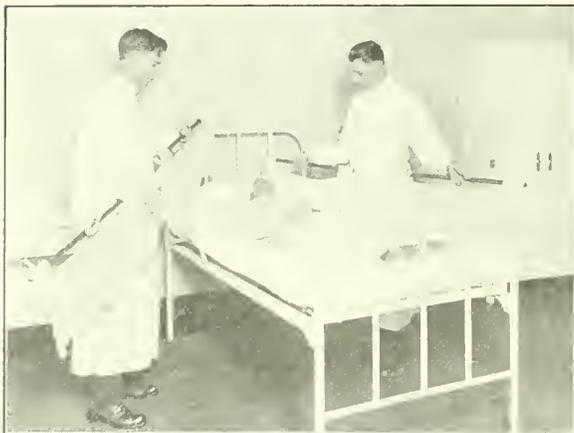
| | | | |
|----------------|------------------------------|-------------------------------|----------------|
| Assets | \$71,383,431.14 | Capital Actually Paid Up..... | \$1,000,000.00 |
| Deposits | 67,792,431.14 | Reserve and Contingent Funds | 2,591,000.00 |
| | Employees' Pension Fund..... | | \$357,157.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.



DOES NOT DISTURB THE PATIENT

Made in two parts, simply, yet strongly connected, the Gwin-Flex stretcher can be readily removed without disturbing the patient. In many post-operative conditions the use of this stretcher insures not only greater comfort for the patient, but likewise far greater safety.

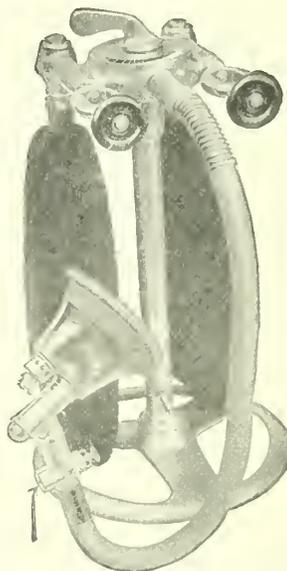
The two parts of the Gwin-Flex Stretcher are held together by a flexible steel tape which is easily removed, enabling both parts of the stretcher to be withdrawn without disturbing the patient. The stretcher is readily sterilized as the handles and tape are removable. The stretcher is extremely strong, although light in weight. Particularly convenient in turning sharp angles and passing through doorways.

May we send you full particulars, together with list of prominent hospitals now using the Gwin-Flex Stretcher?

GWIN-FLEX STRETCHER CO.

Box 954

SAN FRANCISCO, CAL.



THE BABY CLARKE is appropriately named. It is a portable gas outfit which the physician can very well take with him as part of his obstetrical equipment. There is constant and legitimate call from women patients that some of the terrors of obstetrical pain be relieved. It is the common practice now in hospitals to use gas for this purpose. THE BABY CLARKE will render the same service to the obstetrician and may be carried to the patient's home and used there or anywhere else.

The portable apparatus is automatic, and requires no attention in analgesia, also used in minor operations. Most progressive men are using Nitrous Oxid-Oxygen in their Obstetrics.

Write for Literature or Demonstration

We specialize in GAS OUTFITS, small monthly payments

DOCTORS' SUPPLY CO.

948 Market St., San Francisco
PHONE DOUGLAS 2831

Schick Test Squibb

A minute quantity of diphtheria toxin for intracutaneous injection. A reliable clinical test producing a characteristic skin reaction where the normal antitoxin of the blood is insufficient to protect.

Diphtheria Toxin-Antitoxin Mixture Squibb

Its use results in the production of an active immunity to diphtheria and according to the work of Park and his colleagues probably affords protection for three years or longer.

Diphtheria Antitoxin Squibb

A highly purified and concentrated antitoxin, high in potency, small in volume and low in total solids.

Squibb Biologicals are produced under the personal direction of Dr. John F. Anderson, formerly Director of the Hygienic Laboratory of the U. S. Public Health Service.

E. R. SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

As a physician you will appreciate the relief that a parent feels who knows diphtheria to be a preventable disease. What a satisfaction it would be if it were generally recognized that through the agency of the Schick Test and Diphtheria Toxin-Antitoxin Mixture, the dangers from that disease could be avoided.

As diphtheria antitoxin revolutionized the treatment of diphtheria so the Schick Test and Toxin-Antitoxin Mixture have made possible its practical elimination from our communities.



The Acid Tooth Paste

now a necessity

Pepsodent is mildly and properly acid. It was the first tooth paste to comply with modern requirements.

It is free from all alkalis, soap and chalk, as acid tooth pastes must be.

It increases salivary flow.

It reduces the viscosity of saliva.

It increases ptyalin—the starch digestant in saliva, to remove starchy deposits that adhere to tooth surface.

It increases alkalinity to neutralize the acids which cause dental decay.

It aids Nature in maintaining a normal, alkaline, fluid saliva to protect the teeth, while alkaline tooth pastes do precisely the opposite.

Attacks the plaque

Pepsodent also combats mucin in an efficient manner. It keeps the teeth so highly polished that plaque cannot easily adhere.

Its polishing agent is essentially tricalcium phosphate, finely powdered. No other polishing agent, for daily use, compares with it.

Today the results of Pepsodent are apparent to every dentist. Years of tests have proved it is harmless to enamel. In one test natural teeth were brushed 300,000 times.

Scientific data

— Much scientific data is available. Men qualified by training and education will gladly answer all questions. Tubes of Pepsodent are supplied for experimentation. Learn about the modern dentifrice which millions now employ.

Pepsodent PAT. OFF.
REG. U.S.

A Modern Dentifrice

An acid tooth paste which brings five effects desired by modern authorities

THE PEPSODENT COMPANY, 702
7249 Ludington Bldg., Chicago, Ill.

Please send me, free of charge, one regular 50c size tube of Pepsodent, with literature and formula.

Name.....

Address.....

Enclose card or letterhead

CALCREOSE

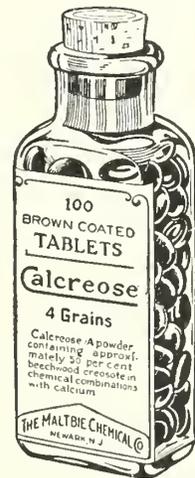
Intestinal Antisepsis

is often called for during the summer months. **CALCREOSE**, a mixture containing in loose chemical combination approximately equal weights of creosote and lime, acts as an intestinal antiseptic.

CALCREOSE does not have any untoward effect on the stomach, even when given in large doses and for a long period of time; therefore, patients do not object to its administration.

TABLETS—POWDER—SOLUTION

Write for literature and samples



The Maltbie Chemical Company, Newark, N. J.

RADIUM

The Burnett Sanitarium Company of Fresno, California, is fully equipped with a large supply of radium to take care of all kinds of cases.

Emanation tubes will be sent on request of physicians at the rate of \$1.00 per millicurie. A description of the case should accompany the application for emanation tubes.

The medical profession is cordially invited to send their patients to the Burnett, resting assured that not only will their patients receive careful attention, but the physicians themselves will be treated in an ethical manner.

D. H. TROWBRIDGE, M. D.,

General Manager



Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
 X-Ray and High Frequency Coils and Machines
 Interrupterless X-Ray Transformers (Three Sizes)
 Coolidge Tube Transformers and Controls
 Electric Bakers (Limb and Body)
 Ozone Generators—Single, Double and Quadruple
 Electric Light Bath Cabinets with Thermo-Vacuum Space
 Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for price lists and descriptive literature

HOURLY NURSING SERVICE

SAN FRANCISCO COUNTY NURSES'
CENTRAL DIRECTORY

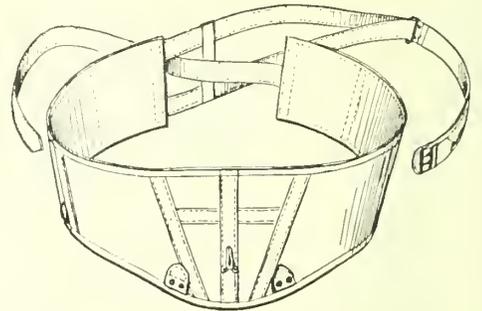
1155 Pine Street
Telephone: Prospect 66
San Francisco, California

Phone Park 8998

E. H. MARKEL Orthopedic Appliances

TRUSSES AND ELASTIC HOSIERY

1138 Mission Street Between 7th and 8th
San Francisco, California



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are especially well cared for in a unique and efficient manner. For twenty-one years we have made our business a study, and by confining ourselves to these specialties have developed methods that assure relief to the patient and satisfaction to the doctor.

Every physician should secure a copy of our catalogue, which explains our business in detail. We have the largest and best equipped plant on the Pacific Coast and are the exclusive agents for the famous Drs. Smith's "Honest John" Truss, the only practical device for holding at the internal ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
San Francisco

1522 Broadway
Oakland

FOR SALE

Large 500 P. Leucodescent Lamp.
Arc Light.
Electric Light Cabinet.
Large Sprague Baking Apparatus.
Gynecologic Treatment Table.
Scale.
A Large Galvanic and Faradic Machine.
A Portable Galvanic and Faradic Machine
(dry cells).
Victor Vibrator.

For particulars address
BUSH ELECTRIC CORPORATION
334 Sutter Street, San Francisco

POSITION WANTED—A graduate nurse,
Canada, with clinical laboratory experi-
ence, desires position with private physi-
cian, or group of physicians, as laboratory
technician. Apply B. E. B., 435 West
42nd Street, Los Angeles, Cal.

DR. RALPH B. SCHEIER

FLOOD BLDG. SAN FRANCISCO

Phone Douglas 4486

DISEASES OF THE LUNGS

Hours by appointment

Residence Phone, Fillmore 5537

FOR SALE

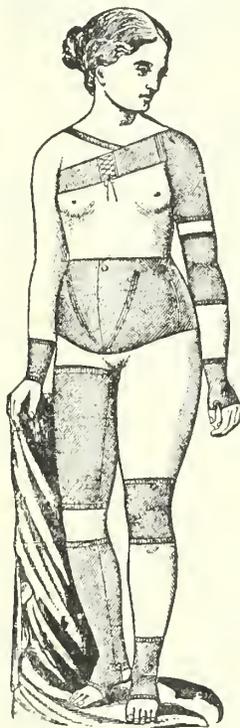
Microscope, Sphygmotometer, Hema-
tocyto-meter, Laryngoscopic Set and
Other Miscellaneous Instruments
In Good Condition

Address

U. S. N., 930 BUTLER BLDG.
San Francisco, Calif.

ELASTIC STOCKINGS

FOR
**VARICOSE
VEINS**



We specialize in the making
and fitting of Elastic Ho-
siery, Abdominal Belts and
Trusses. We are the oldest
truss and elastic house in
the West. Over 40 years'
successful business experi-
ence.

TRUSSES, \$3.00 up
ELASTIC HOSE, \$2.50 up
Lady Attendant

**Hatteroth's Truss
and Elastic House**

232 POWELL ST.
Bet. Geary and O'Farrell
Second Floor

**HOSPITAL-BEDS
MATTRESSES AND
BED-APPLIANCES
AT FACTORY PRICES**

We also do mattress renovating

Ewd. L. McRoskey TELEPHONE
PARK 4533
THE RETAIL MATTRESS FACTORY

1506 MARKET ST., at VAN NESS AVE.

DR. LIONEL A. B. STREET

(Late of Shanghai, China)

ANNOUNCES THE OPENING
OF HIS CONSULTING ROOMS

SUITE 1023 PACIFIC MUTUAL BLDG.
523 WEST SIXTH ST., LOS ANGELES
CALIFORNIA

HOURS TWO TO FOUR P. M.

Residence 621 South Virgil Avenue
Telephone Wilshire 6109

August first 1921
Office Phone 15626

FOR SALE

SANITARIUM SITE Alameda County

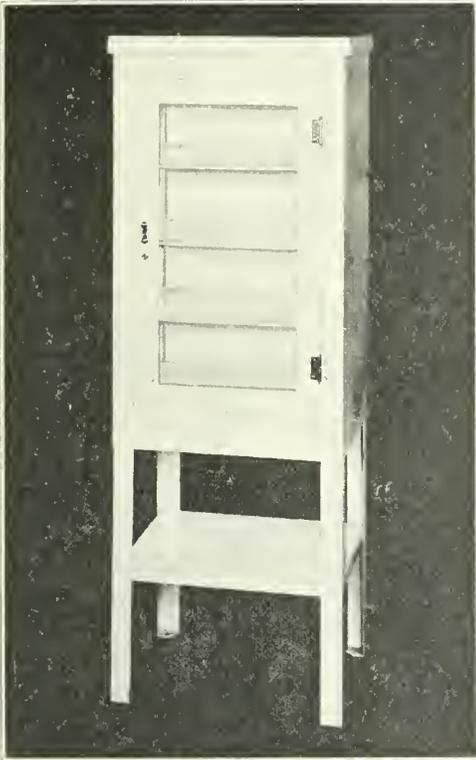
13 acres near Hayward; 10 large rooms, 3 baths, 3 sleeping porches, hardwood floors; abundant water with electric pump; fruit trees and garages. On slight elevation near East 14th Street. Sanitation approved by county authorities.

H. C. CLINTON, 1529 BROADWAY, OAKLAND, CAL.

Phone Oakland 1609

*Patronize the Advertisers Who Support
The California State Journal of Medicine*





OFFICE EQUIPMENT of distinction

At Prices Far Below Normal

Every piece of furniture reflects an attractive new low price-marking. The values will bear critical comparison.

An Instrument Cabinet

of pressed steel, electrically welded, with double strength crystal glass doors; vitriolite adjustable shelves finished in snow-white enamel. Dimensions: 16 $\frac{1}{4}$ " x 27 $\frac{1}{2}$ " x 15"; clear height, 56". Was \$90 Now \$60

Other articles at correspondingly low reductions
(Forwarding charges prepaid)

We will be glad to have the privilege of communicating with you on your office equipment requirements, whether a modest outlay or large expenditure is planned.

PERCY J. MEYER & CO.

379 GEARY STREET SAN FRANCISCO

Dedicated to the Service of the Doctor

Walters Surgical Company

"Service and Dependability"

441 SUTTER STREET

Between Powell and Stockton Streets

Phone: Douglas 4 0 1 7

**HIGH GRADE
SURGICAL INSTRUMENTS
and
HOSPITAL SUPPLIES**

TRUSSES

ABDOMINAL SUPPORTERS

ELASTIC HOSIERY

ORTHOPEDIC APPLIANCES

LABORATORY APPARATUS, STAINS

ELECTRO-THERAPEUTIC and X-RAY

APPARATUS

Our Illustrated Surgical Instrument Catalogue

Free Upon Request

STERIPULES

(The Perfect Ampule)

For intravenous, intramuscular and
subcutaneous use

"STERIPULES"

are prepared in modern laboratories under ideal conditions. Double distilled water; chemicals of highest purity and alkali-free glass ampules only are used.

Literature gladly furnished

Stocked complete by

Pacific Surgical Mfg. Co.

320 WEST SIXTH STREET, LOS ANGELES

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

Pacific Wassermann Laboratories



Prompt • Accurate • Dependable

OUR prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over ten years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy.

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhoea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diabetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

OCTOBER, 1921

OCTOBER CONTENTS

Editorials:

- The 1922 Meeting of the State Society 387
- Stock Selling Hospitals 388
- The Cancer Situation 388
- Fixing the Surgeon's Fee..... 388

Original Articles:

- Acute Mechanical Obstruction of the Small Intestine. By Samuel Robinson, M. D. 389
- Uncomplicated Fractures of the Pelvic Ring. By Drs. Harold Brunn and L. D. Prince..... 392
- Incidence and Clinical Significance of Flagellate in Certain Chronic Diseases. By John V. Barrow, M. D. 395
- The Etiology of Parenchymatous Nephritis. By G. E. Ebright, M. D. (Concluded from September, 1921) 400
- California's Cancer Problem. By A. R. Kilgore, M. D. 403
- Chronic Lesions of the Lower Lip. By Edwin I. Bartlett, M. D..... 404
- The Motais Operation for Pto'sis, Report of Six Operations. By Roderic O'Connor, M. D..... 407
- Notes on Pre-Natal Care. By G. C. H. McPheeters, M. D..... 411

- The Great Second Type of Chronic Arthritis—Further Studies. By L. W. Ely, M. D..... 415
- Sleep Requirements of Children..... 418
- Modern Method of Feeding Infants.. 418
- Things Every Physician Should Read 418
- Section Officers for the 1922 Meeting of the Medical Society—General Session 419
- Qualifications for Membership..... 419
- County Societies:
 - Fresno 420
 - San Diego 420
 - Santa Clara 420
 - Sonoma 420
- News Item 420
- St. Francis Hospital and Clinical Society 420
- Merced Hospital Association..... 420
- Weimar Sanitarium 421
- California Sanitarium 421
- Technical Specialty Organizations..... 421
- Pacific Association of Railway Surgeons 421
- Book Reviews 421
- Books Received 422
- Board of Medical Examiners 422
- New Members 422
- Deaths 422

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President H. G. BRAINERD, Los Angeles, President Elect
 ALFRED C. REED, San Francisco, First Vice-Pres. JOSEPH CATTON, San Francisco, Second Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Editor and Secretary
 CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

- FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties.
 PAUL M. CARRINGTON, San Diego (Term expires 1924)
- SECOND DISTRICT—Los Angeles, Santa Barbara, Ventura and Kern Counties.
 WM. H. KIGER, Los Angeles (Term expires 1922)
- THIRD DISTRICT — San Luis Obispo and Monterey Counties.
 T. C. EDWARDS, Salinas (Term expires 1924)
- FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.
 DWIGHT H. TROWBRIDGE, Fresno (Term expires 1924)
- FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties.
 FRANK H. PATERSON, San Jose (Term expires 1923)
- SIXTH DISTRICT—San Francisco County.
 C. G. KENYON, San Francisco, Chairman. (Term expires 1922)
- SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties.
 EDW. N. EWER, Oakland (Term expires 1923)
- EIGHTH DISTRICT—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.
 JAMES H. PARKINSON, Sacramento (Term expires 1922)
- NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.
 JAMES H. McLEOD, Santa Rosa (Term expires 1923)

COUNCILORS AT LARGE:

- O. D. Hamlin, Oakland (term expires 1922); Réne Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); Saxton T. Pope, San Francisco (term expires 1924); C. Van Zwalenburg, Riverside (term expires 1923).

BOSTON MEDICAL LIBRARY
 MAR 24 1924

REC'D OCT 19 1921
 MELLIN'S INDEX
 GRAVES

REID BROS., Inc.

MANUFACTURERS
IMPORTERS
EXPORTERS

Hospital and Surgical
Supplies
of every description

Large Stocks and Complete
Manufacturing Facilities

91 to 99 DRUMM ST. SAN FRANCISCO

BRANCHES

Seattle, Washington

Vancouver, Canada

Tokyo, Japan

EDWARD I. SUGARMAN

MARION H. LIPPMAN

LIPPMAN & SUGARMAN LABORATORY

ESTABLISHED 1914

WASSERMANN (AND NOGUCHI CONTROL) TESTS DAILY

REPORTS ISSUED TO PHYSICIANS ONLY

ROOM 911 BUTLER BUILDING
135 STOCKTON STREET
SAN FRANCISCO

TELEPHONES: GARFIELD 541
SUTTER 4553
(EMERGENCY) WEST 1400

C. H. HITTENBERGER CO.

Manufacturers and fitters of

**Surgical and Orthopedic
Appliances**

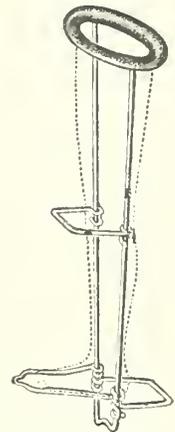
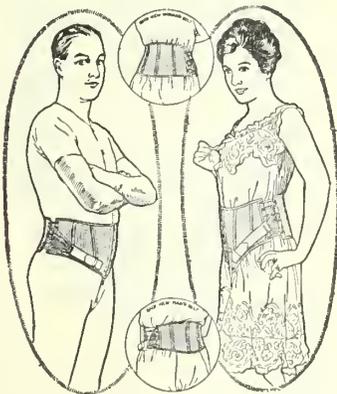
Artificial Limbs

Surgical Corsets

Trusses, Etc.

Post-Operative Abdominal Binders and
Supports a Specialty

Lady Attendants



Fitting Rooms
1103 MARKET STREET

Factory
12 SEVENTH STREET

Phone Market 4244

San Francisco

HAY-FEVER

Curative Treatment

When used for the treatment
of actual attacks of Hay-Fever

Pollen Antigen—*Lederle*

shortens the attack and renders
the symptoms more mild. As a
rule, the Hay-Fever symptoms
begin to be less distressing after
3 or 4 doses of Pollen Antigen
have been given and entirely dis-
appear, on the average, after 8
doses. Some cases require a
greater number of doses before
complete relief is obtained.

LEDERLE ANTITOXIN LABORATORIES

511 FIFTH AVENUE
CORNER OF FORTY-THIRD STREET
NEW YORK CITY

PACIFIC COAST BRANCH
163 JESSIE STREET
SAN FRANCISCO, CALIFORNIA
TELEPHONE KY. 4598

Announcing the Opening of

St. Gothard Convalescent Home

St. Helena, Napa County, California

Selected Nervous Cases Accepted
No Acoholic, nor Drug Addicts
Attending Physician, Myron M. Booth

*For particulars address C. & L. Broniscoe, 925 Grove St., San Francisco
Phone Park 5193*



HOSPITAL FOR CHILDREN AND TRAINING SCHOOL FOR NURSES

A general hospital of 275 beds for women and children.
Thirty beds for maternity patients in a separate building, newly
equipped.

Complete services of all kinds for women and children.
Infant feeding a specialty.

House staff consists of three resident physicians and eight internes.

Accredited by the Council on Medical Education and Hospitals
of the American Medical Association.

Institutional member of League for the Conservation of Public
Health.

The oldest school of nursing in the West.

Director of Hospital
Dr. Wm. E. Musgrave
Medical Superintendent
Dr. Edna L. Barney
Assistant Superintendent
Mrs. Huida N. Fleming
Superintendent of Nurses
Miss Ada Boye, R.N.
3700 California Street
San Francisco



MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH—That vaccination against all three infections does definitely protect against all three.
- FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley California

Producers of Vaccines true to labeled content and count
Write for Therapeutic Index Price List

"SPRING ACRES"

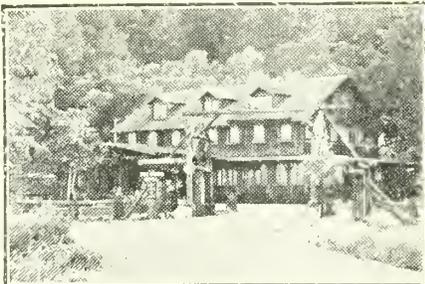
2747 Fruitvale Avenue
Oakland . . . California

EXCLUSIVELY FOR THE CARE
OF TUBERCULAR PATIENTS

Privacy, individual service, homelike comforts
and amusements are featured for all patients.
Patients select their own physicians

Rates \$25.00 per week and up

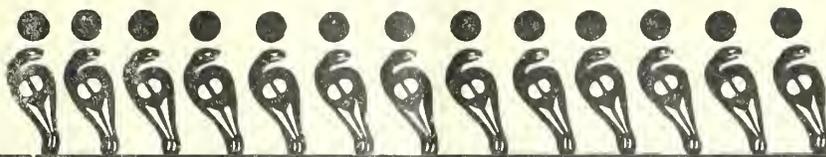
Mrs. L. E. Everson :: :: :: :: :: Fruitvale 42



For Sale—Convalescent Sanitarium and Health Resort

The most ideal property and location in the State. Located on Napa County concrete highway, between St. Helena and Calistoga, no grades, 3 hours from San Francisco.

Consists of 25 acres heavily timbered, wonderful mineral springs, improvements worth \$50,000, large hotel, six cottages furnished complete, electric lights, large automobile shed, concrete swimming pool, improvements 3 years old. \$15,000 cash will handle it. For full particulars address J. H. Westcott, owner, Calistoga, Napa County.



INSOMNIA

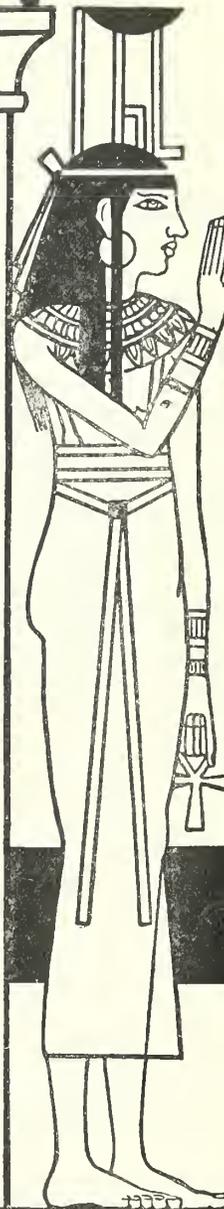
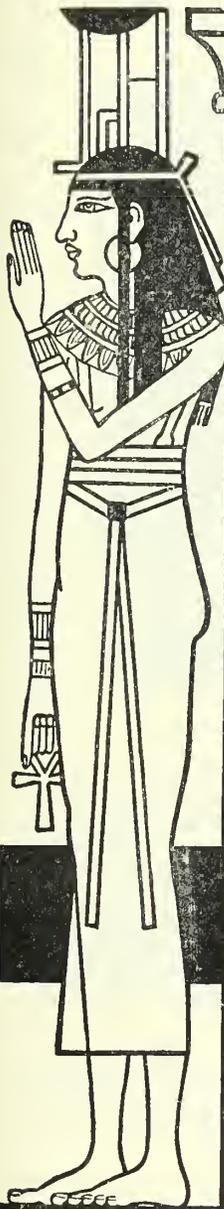
A cup of "Ovaltine" at bedtime has been widely used by physicians as a means of overcoming insomnia and so inducing calm, refreshing sleep. Thus the use of hypnotic drugs is avoided.

The peculiar value of "Ovaltine" for this purpose lies in the fact that it can be given with minimum disturbance where there is impaired digestive function, a condition often met ineffectively by allowing the patient to go hungry.

"Ovaltine" excites little digestive activity, creates neither distress nor discomfort and promotes the digestion of other forms of nourishment taken in conjunction with it. In this way nervous irritability is allayed and the patient passes into a natural and healthful sleep.

Invalids, convalescents, dyspeptics, old people and others to whom insomnia is an ever present dread may find in a cup of "Ovaltine" beverage taken just before retiring an effective means for their relief.

Samples and Literature mailed upon signed request.



M 17

OVALTINE

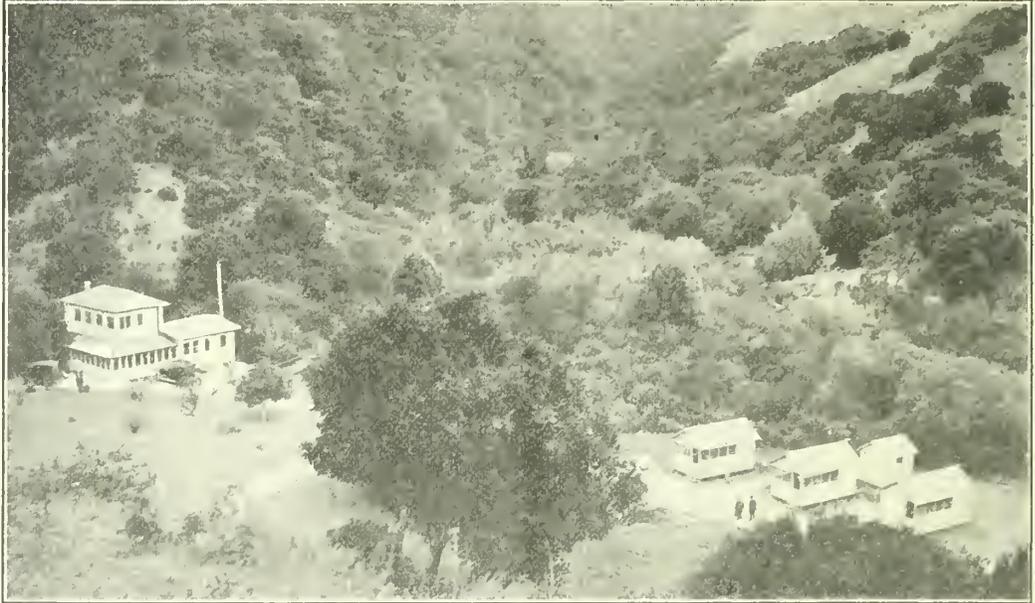
THE WANDER COMPANY, 37 S. Wabash Ave., Chicago

Works: Villa Park, Ill.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*
□



SOME OF THE COTTAGES

□
*Rates
Reasonable*
□
Climate Ideal
□

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

ROBERT M. JONES, M. D.

Announces his removal to
ROOM 814, FLOOD BLDG., SAN FRANCISCO

Phone Sutter 342

Hours: 10 to 12 and 2 to 5

Practice limited to
EYE, EAR, NOSE AND THROAT
and Refraction

NOTICE

The JOURNAL office will very much appreciate the return of any copies of the September (1921) issue. Members having no further use for their copy will return it to

930 Butler Building
SAN FRANCISCO

**AMERICAN
AMBULANCE**

AND NURSES' BUREAU

PHONE MARKET 21

Military Blue Ambulances

City and Country Trips on Application

Rates Reasonable

146 CENTRAL AVE., SAN FRANCISCO



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM

HYDROPATHIC
DEPARTMENT

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.

Victor Announcement of Interest to X-Ray Users on the Pacific Coast

THIS is to announce that direct Victor representation and direct personalized Victor Service are now established on the Pacific Coast.

A direct Victor Branch Office has been established in San Francisco, with Service Stations in the principal cities along the coast, so that every Victor equipment is under immediate observation of trained men. A complete stock of Victor Apparatus and Supplies will be maintained, thus facilitating selection of equipment and deliveries.

The advantages and benefits to Victor users in dealing direct with the manufacturer's organization are obvious. The personnel is of our own selection, specially trained by ourselves to the degree of efficiency and expertness that is required in carrying out the broad policy of Victor Service, the object of which is to aid every user that he may realize the maximum in results with his equipment.

Mr. L. B. Miller, General Manager of Sales, has spent some time past in perfecting the Pacific Coast Organization and will remain in charge there for several months, directing the work with the view to bringing these facilities up to the high standard established for Victor Service.

Under this new and extensive plan we believe that the mutual interests of the user and ourselves will be served in an appreciable manner.

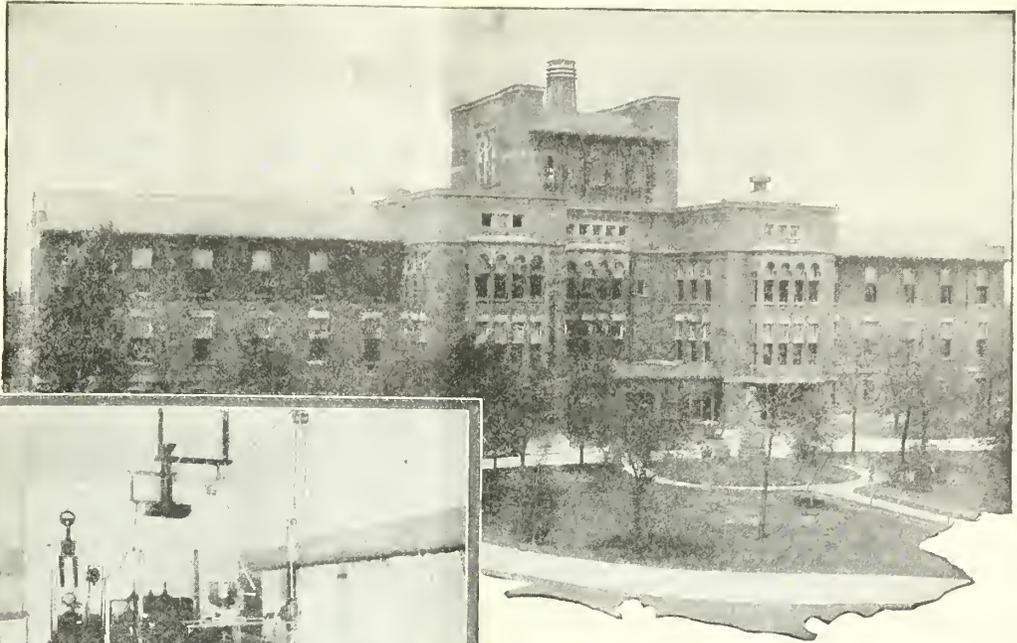
VICTOR X-RAY CORPORATION
Jackson Boulevard at Robey Street, Chicago

Pacific Coast Branch:

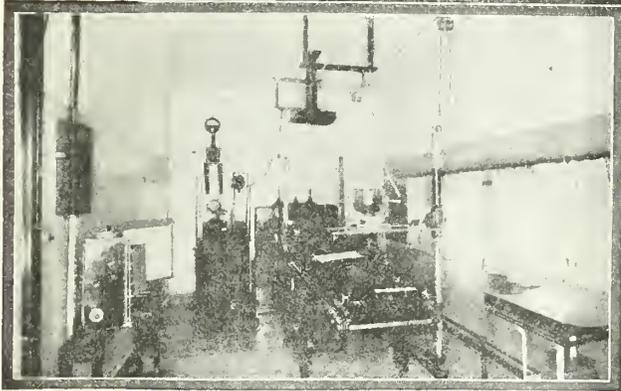
254 Sutter Street

San Francisco





St. Anne's Hospital, Chicago, Ill.



X-Ray Room, St. Anne's Hospital, Victor Equipped

Because Life Is At Stake

THE physician is a trustee of health, of life itself. As a student at school and in the clinic he is therefore taught a code of honor hardly to be matched in any other profession.

Reckless experimenting is forbidden by that code. A human life may be at stake. What physician would dream of using a drug of unknown formula, of unknown properties, of unknown origin?

So, with instruments and apparatus. Like drugs they must be made by reputable manufacturers—by men who realize what the ideals of medicine and surgery are.

The Victor X-Ray Corporation is as old as the X-Ray. A code of honor has been strictly observed from the beginning in the making of Victor X-Ray apparatus—the same code that animates every conscientious practitioner. The apparatus must work in the way that the *physician* wants it to work—and in no other way. It must be trustworthy.

Every piece of Victor apparatus is made, therefore, not simply according to an honest business man's code of honor, but according to the higher code that physicians obey. However new in design, it is a scientifically tested piece of apparatus—as much so as any new serum or antitoxin.

The Victor X-Ray Corporation is so far concerned with observing the physician's code that its interest does not end with the installation of an X-ray equipment. It maintains Service Stations in the principal cities to keep its equipment in perfect condition. These stations give engineering advice and aid the physician in every legitimate way.

As part of this Service policy, the Victor X-Ray Corporation publishes a periodical called "Service Suggestions" in which X-ray progress is recorded primarily for the benefit of Victor clients. Others may find "Service Suggestions" of value. It will be sent to them on request.

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago

Territorial Sales Distributors:

SAN FRANCISCO: VICTOR X-RAY CORPORATION, 254 SUTTER ST.
LOS ANGELES: VICTOR ELECTRIC LOS ANGELES, 930 HILL ST.

PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY PRIVATE CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of *Hydrotherapy*,—coupled where indicated with *Nauheim*,—*Radio Active Clay*,—*Calcic Carbonate*,—*Magnesia Carbonate* and *Sulphate Baths*,—*Radium Emanatorium*. Modern modifications of *Zauder Apparatus*, *Massage* and *Manipulations*. *Electro-Therapy*, *Thermo-Penetration*, *Actino-Therapy*, *Proctoclysis*, *Corrective Gymnastics* and the application of tabulated *Physical Efficiency Tests*

We are well equipped with modern mechanical devices of scientifically proven efficiency for the *Relief of Suffering*. We maintain a most comprehensive *Service Organization* of *Trained Attendants* rendering *Personalized Attention* to every patient.

Our Institute is specially equipped for the relief of persons suffering from *Chronic Disorders*. We are prepared to take care of *Post-Operative Convalescents* in need of *Reconstruction* and "*Conditioning*" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

Doctor:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern *Physio-Therapy*. Our twenty-three years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

N. A. Karpaty, B. Sc.,
Technical Superintendent.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

G. H. Richardson, M. D.,
Medical Director.

Nathalie Selling, M. D.,
Staff Associate.

Care—Courtesy—Privacy—Comfort. Best references. Inspection invited.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

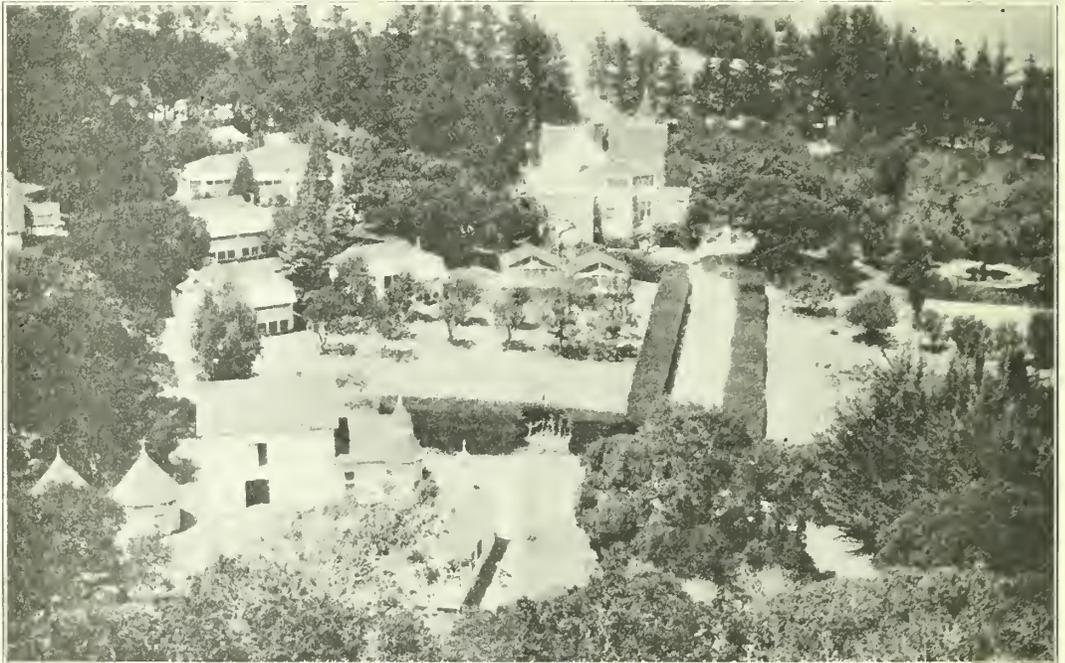
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD,
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

Research work and clinical observation have led to a remarkable growth in the employment of animal derivatives in medicine. It is obvious that at present we are only beginning to realize the possibilities of this line of therapy and that in the near future its development will be very rapid. We decided, therefore, to enlarge our stock of glandular products from reliable laboratories, such as the following:

HYNSON, WESTCOTT & DUNNING
ARMOUR & COMPANY
THE WILSON LABORATORIES
BURROUGHS, WELLCOME & CO.
PARK, DAVIS & CO.
CHOAY LABORATORIES, FRANCE

KECK'S
PRESCRIPTION PHARMACIES
 135 STOCKTON ST. 209 POST ST.
 PHONE PHONE
 SUTTER 5426 GARFIELD 1380
 (UP-STAIRS)
 SAN FRANCISCO.

Phone or send us your prescriptions. We are prepared to give you or your patients immediate service whether it may be for ampoules, capsules, tablets or powders.

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
 PRACTITIONERS LABORATORIES
 133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

The Management of an Infant's Diet

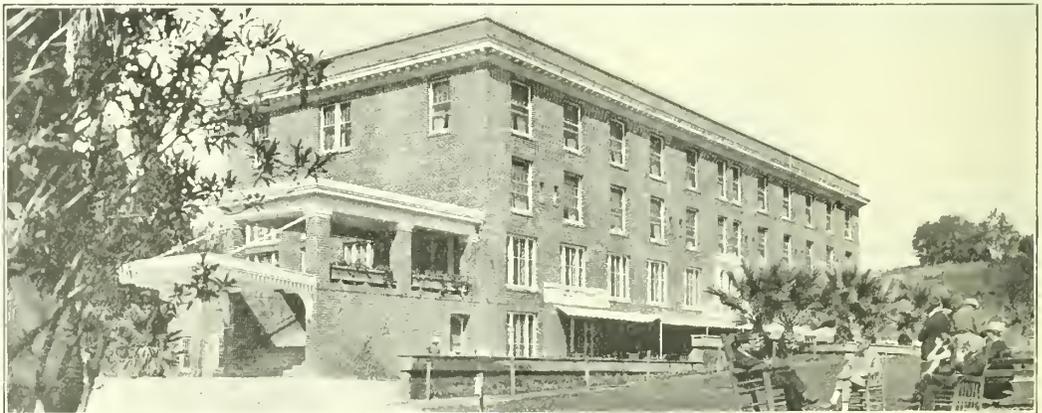
Malnutrition, Marasmus or Atrophy

| | | | | |
|----------------------------------|---|-----------|-------------------------|--------|
| Mellin's Food | } | Analysis: | Fat | .49 |
| 4 level tablespoonfuls | | | Protein | 2.28 |
| Skimmed Milk | | | Carbohydrates | 6.59 |
| 8 fluidounces | | | Salts | .58 |
| Water | | | Water | 90.06 |
| 8 fluidounces | | | | 100.00 |

The principal carbohydrate in Mellin's Food is maltose, which seems to be particularly well adapted in the feeding of poorly nourished infants. Marked benefit may be expected by beginning with the above formula and gradually increasing the Mellin's Food until a gain in weight is observed. Relatively large amounts of Mellin's Food may be given, as maltose is immediately available nutrition. The limit of assimilation for maltose is much higher than other sugars, and the reason for increasing this energy-giving carbohydrate is the minimum amount of fat in the diet made necessary from the well-known inability of marasmic infants to digest enough fat to satisfy their nutritive needs.

Mellin's Food Company, Boston, Mass.

BYRON HOT SPRINGS CALIFORNIA



"THE HOME OF HEALTH"

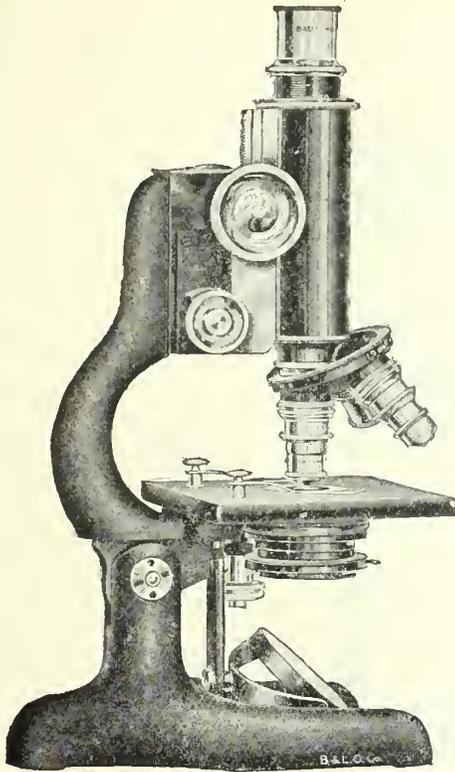
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto from San Francisco

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

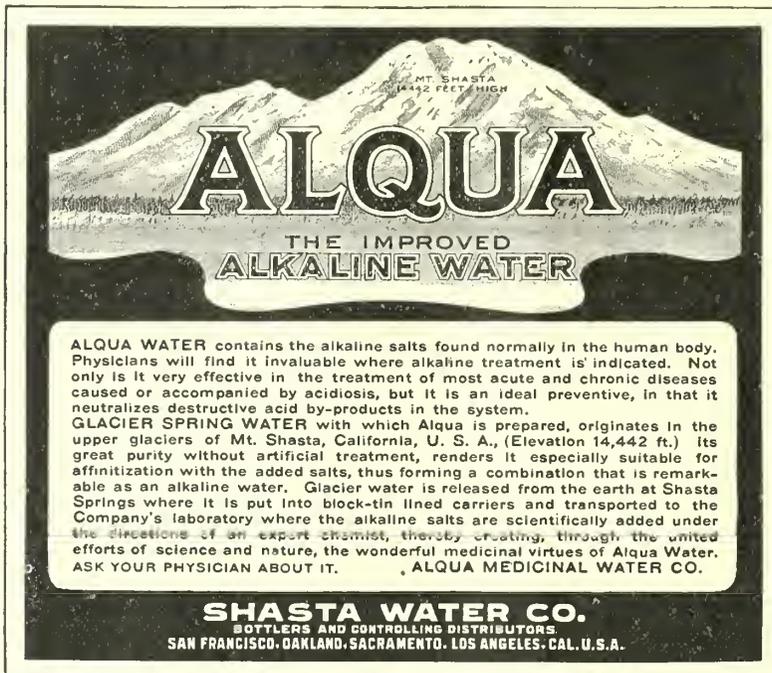
DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



MT. SHASTA
14,442 FEET HIGH

ALQUA

THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLEERS AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U.S.A.

At All Druggists

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

Grageroff & Papazoni

Laboratory of Clinical Pathology

Referred Work Only

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.

Phone Pico 3778

Silver-Salvarsan

(SILVER-ARSPHENAMINE-METZ)

The sodium salt of silver-diamino-dihydroxy-arsenobenzene

RELATIVE infrequency of reaction, rapid disappearance of contagious lesions, and general therapeutic effectiveness seem to indicate that Silver-Salvarsan is a drug of real value in the treatment of syphilis.

Silver-Salvarsan requires no alkalization and its ease of administration commends it to many practitioners.

More than two million injections of Silver-Salvarsan have been given in the United States and abroad.

H. METZ LABORATORIES, Inc
One-Twenty-Two Hudson Street, New York

What the Label Means

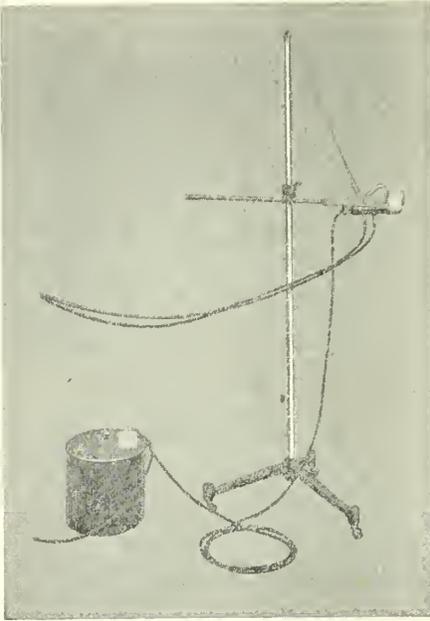
THE Diphtheria Antitoxin that bears the Parke, Davis & Company label is a highly concentrated product that contains a minimum of total solids.

It is given a three-year dating, and to make unsparing compensation for a possible shrinkage of antitoxic power we add a 40% excess to the number of units indicated by the label. Thus a package represented as one of 10,000 units actually contains 14,000 units at the time of marketing.

When you inject our Diphtheria Antitoxin you may do so with the assurance that you are employing a product which is unsurpassed in refinement, potency, concentration, absorbability and purity.

Parke, Davis & Company





THE KROMAYER LAMP

Consider—

that the Kromayer lamp enjoys the distinction for highest intensity of Ultra-Violet radiation and the most practical means for administering treatment of many conditions.

The effective results obtained with its use over a period of ten years has been the stimulant for our scientific research work that has resulted in bringing the lamp to its present high state of efficiency.

It is chosen as the most desirable method of applying actinic rays to Lupus, Naevus, Acne, Psoriasis, Eczema, Ulcers and Wounds; to specific or non-specific orificial inflammatory conditions such as Tubercular Laryngitis, Rectal Fistulae, Otitis Media, Frontal Sinus Infections, Ozena and a number of gynecological conditions.

Write for interesting illustrative booklet

Hanovia Chemical & Mfg. Co.

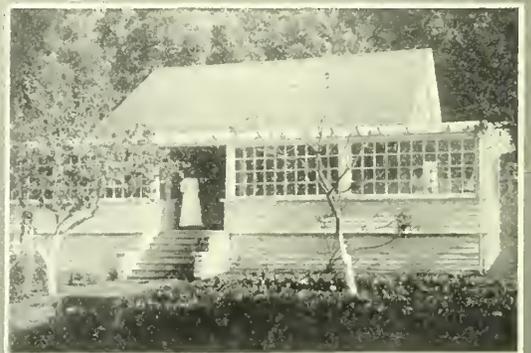
San Francisco, Cal.

Executive Offices: - - - Newark, N. J.

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

PAUL C. ALEXANDER, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

A BANKING SERVICE FOR THE MEDICAL PROFESSION

An Investment Department that can help you solve problems in buying and selling securities.

A Savings Department for your savings and surplus funds.

A Commercial Department for your checking account.

A Trust Department,—the largest in the West,—that can act as executor, trustee or custodian of your properties.

Safe Deposit Vaults for the safekeeping of your valuables.

THIS IS THE COMPLETE BANKING SERVICE THAT WE OFFER YOU.

UNION TRUST COMPANY

COMMERCIAL SAVINGS OF SAN FRANCISCO SAFE DEPOSIT TRUST
MARKET ST. AND GRANT AVE.

Pacific Surgical Gown Co.

Manufacturers of



Operating Gown

Dental Gowns
Operating Gowns
Instrument Rolls
Leg Holders
Cushions for all
Operating Tables

1626 EDDY STREET
San Francisco California
West 2715

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
 Rooms large and sunny—Rates reasonable—Fine cuisine
 Unsurpassed Operating, X-Ray and
 Maternity Departments*

Training School for Nurses

For further information
 Address, FRANKLIN HOSPITAL
 San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

DIFFERENT AND BETTER
OBSTETRICAL SUTURES

made from

Catgut Impregnated With Silver

Boilable.

Absorbed in 12 to 14 days.

Exceptional tensile strength.

Threaded on full curve No. 6 needle.

In resisting absorption "Silvergut" is superior to Chromic Tanned or other prepared Catgut.

Supplied in packages containing two tubes
 Prepared from Abattoir to finished Package by

"This mark

THE WILSON LABORATORIES

your guarantee"

4213 South Western Boulevard, Chicago, Ill.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments

Southern California

DR. I. B. LINEBARGER
 1000 Lyon St., Los Angeles

Phones: Main 5790-Auto 10155

Northern California

D. BLAINE MORGAN
 84 Second St., San Francisco

Phone: Kearny 1416

Stock carried in both cities

May we place you on our mailing list for "The Autocoid and Suture," our house journal devoted to Glandular Therapy?

Write for Catalog

The VERY BEST MEDICINES

When You Need Them Most

There's always a hurry-up need for medicines. "Doctor," when your call is made, the benefit of your service really begins when the prescriptions are completed and the patient takes the first dose. For the finest in drugs and drug care all prescriptions should come to us. The best quality the world produces is supplied—the greatest care and the best knowledge put into the compounding. Rapidity is indulged in, but never to the sacrifice of value. All the time necessary to put up prescriptions right and to guarantee them right when they are put up. Send your prescriptions to us—telephone us and we'll send them, or tell your patients to telephone and we'll send to their residence for them.

DELIVERY A SPECIALTY—REMEMBER IT

BUTLER BROTHERS' PHARMACY

PROFESSIONAL PHARMACISTS

Suite 807-9-11 Flood Bldg. Opposite Elevator
 Powell and Market Streets, San Francisco, Cal.

Phone: Douglas 163

Private Exchange

TRAINER-PARSONS OPTICAL CO.

Dispensing Opticians

186 GEARY STREET - - - SAN FRANCISCO

Near Stockton. Opp. City of Paris

Telephone Kearny 2767

Colfax School for the Tuberculous

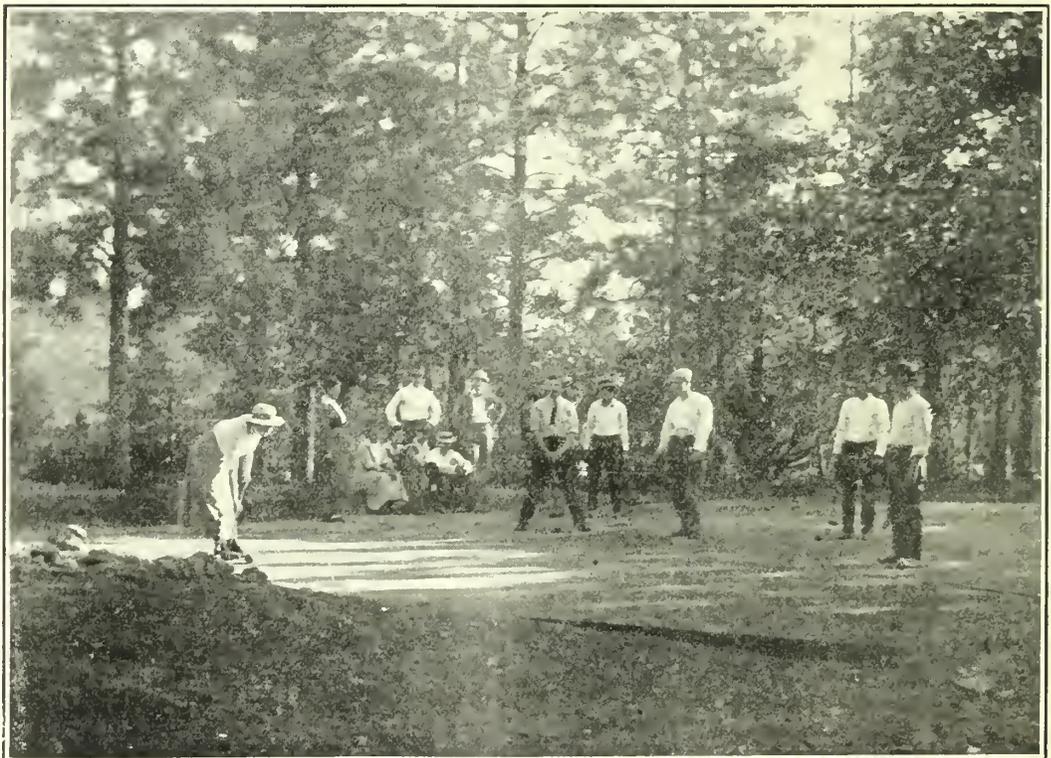
Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

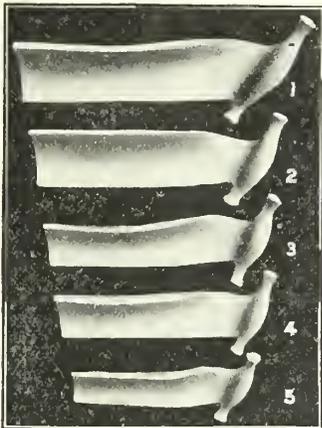
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





**Walker's Colles
Fracture Splints
NOW IN STOCK**

**TRAVERS
Surgical Co.**

SAN FRANCISCO, CAL.

Phone Sutter 4 6 5 1

3 7 2 Sutter Street

**SURGICAL INSTRUMENTS AND
HOSPITAL SUPPLIES**

**Our Stock is
Complete**

CYSTOSCOPES AND ACCESSORIES
MICROSCOPES AND SUPPLIES
SPLINTS OF ALL KINDS
LUER SYRINGES AND NEEDLES
PHYSICIAN'S OFFICE FURNITURE
ELECTRIC DIAGNOSTIC INSTRUMENTS

If It Is Surgical

We Have It

Strength and Pliability are Found in

Armour's Iodized Sheep Gut Ligatures

which are made from lamb's gut selected in our abattoirs especially for surgical purposes.

The Armour Iodized Ligatures possess full tensile strength and their pliability prevents breakage at the knot. They are iodized to the core and are absolutely sterile. Regular lengths, sizes 00 to number 4 at \$2.50 per dozen.

We also offer Plain and Chromic Ligatures, sizes 000 to number 4 regular lengths \$2.50 per dozen, emergency lengths, \$1.50 per dozen (nothing but the smooth side of the intestine is used in the manufacture of the Armour ligatures).



Suprarenalin Solution, 1:1000 is stable, uniform and free from preservatives.

Pituitary Liquid is physiologically standardized and is ready for hypodermatic use— $\frac{1}{2}$ c. c. ampoules for obstetrical and 1 c. c. ampoules for surgical use.

Literature upon the ARMOUR LABORATORY PRODUCTS for the medical profession only.

ARMOUR AND COMPANY

CHICAGO

Headquarters for the endocrines and other organotherapeutic products.

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid-backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

WANTED—Young physician, graduate of Class A school, three and one-half years' internship, ex-service, well qualified in surgery, urology and laboratory work, desires to become associated with busy surgeon or urologist in San Francisco, Los Angeles or San Diego. Some investment if necessary. None but ethical, scientific physicians reply. Credentials, personal and professional, gladly exchanged. Address Dr. W. R. M., care of California State Journal of Medicine, 930 Butler Bldg., San Francisco.

ALTA SANATORIUM

For the treatment of Pulmonary Tuberculosis

ALTA (PLACER CO.) CALIFORNIA

Invigorating climate. Beautiful scenery
Strict medical attention. Moderate terms

Apply for Particulars

Phone 667-72
If no answer, call
607-89 or Main 7675

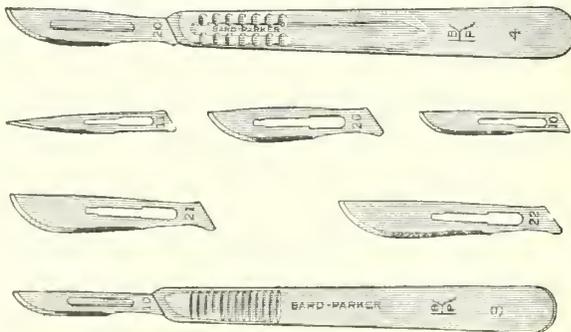
Appointment
Only

Dr. Don P. Flagg

MEDICAL PSYCHOLOGIST

Neurology and Psychiatry, Nervous Children
406 AUDITORIUM BLDG., LOS ANGELES, CAL.
5th and Olive Sts.

Wishes to announce the opening of a laboratory
for vocational guidance, fitness for occupation
determined by psychological, nervous and mental
tests.



MAIL ORDERS FILLED PROMPTLY

Bard Parker

OPERATING KNIVES

Blades \$1.50 the dozen

Handles \$1.00 each

Keniston & Root

PHYSICIANS' SUPPLIES

418 W. 6th St. } & { 1010 10th St.
Los Angeles } & { Sacramento

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

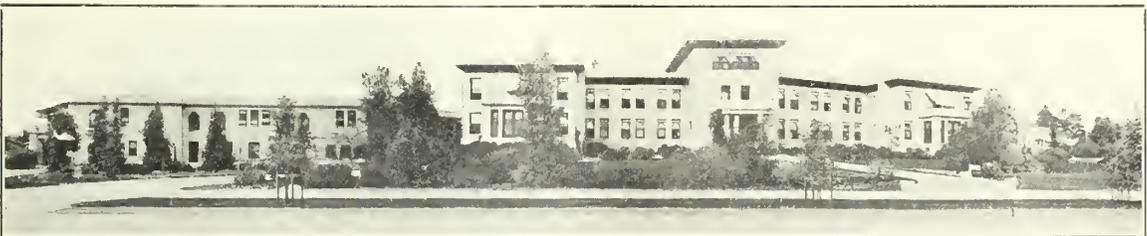
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California



SANTA BARBARA COTTAGE HOSPITAL and TRAINING SCHOOL FOR NURSES

LOCATION, climatic conditions and equipment make this institution of special interest to the public as a place for the care of general Medical and Surgical patients. Its attending staff is thoroughly competent.

METABOLIC DEPT. In a separate wing. A department for the scientific study and treatment of diabetes and other metabolic diseases. Under the direction of Dr. W. D. Sansum. Graduate dietitians and school of dietetics.

ROENTGEN AND RADIUM DEPT. Under the direction of Dr. H. J. Ullmann.

LABORATORIES. In charge of pathologist and five assistants.

RESEARCH DEPT. Cost of research work carried on here last year, \$17,000.

SCHOOL OF NURSING. Offers an excellent training for young women wishing to take up the nursing profession.

F. R. NUZUM, M. D., Medical Director. MISS F. C. JOHNSON, Superintendent.

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco



Diagram for Measuring



D. HIRSCH H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of

Crutches Sold or Rented
Arch-Support Fitting a Specialty

ARTIFICIAL LIMBS and ORTHOPEDIC APPLIANCES

Bonded Manufacturers for U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

FRANK S. SEXTON

Representing

American Institute of Medicine

400 Journals Abstracted Monthly

Telephone Park 7840

59 WOODLAND AVENUE

San Francisco

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco
Phones: Sutter 936-937

MANUFACTURERS

Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enameled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400

SAN FRANCISCO

In Case of Hernia

Prescribe the
Benjamin Natural Support

Each support is made complete for each individual case; the rule being to make pads soft and covering a large enough surface that opening is kept closed. Face of pad made to contour of body.

Non-elastic webbing about hips; pressure applied by flat spring over pad. Hernia is thereby retained without impairing circulation. No need for tight belt or hip-spring.

Comfortable as Well as Secure!

When you think of a support for any form of hernia—think of

M. J. BENJAMIN

Suite 214 Douglas Bldg.

Third and Spring

Los Angeles

Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES

1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.

Phone Franklin 4556

HERMANN BARTH **Architect**

PHELAN BUILDING

Specializing in Hospital Work

SAN FRANCISCO

Telephone Garfield 847

Running True to Form

The Medical Protective Co.,
Fort Wayne, Indiana.

Gentlemen:

In the trial lasting nearly TWO WEEKS, we succeeded in having the Judge order a directed verdict. This case was fought very bitterly and the plaintiff was represented by two very able and well known attorneys.

I wish to express to you my appreciation of your services. You have furnished everything asked for in each of the trials.

I express also my admiration of the preparation for the trial and the trial itself. The legal talent opposing you was of a high order and the entire case was fought from every angle.

That in the end we should receive a directed verdict is not only a vindication of my treatment but a tribute to your management of the case.

Again thanking you, I am

Yours very truly,

For Medical Protective Service
Have a Medical Protective Contract

*Sample contract and
rates on request*

The Medical Protective Co.

of

Fort Wayne, Indiana

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco
Phone Fillmore 4160

PHONE DOUGLAS 6291

Spencer Rejuveno Corsets

Surgical, Dress, Maternity, Sacro-Iliac
Abdominal Belts

305-306

212 Stockton Street
San Francisco

Doctor:---

The science of collecting has been our study for twelve years, and there are few who have devoted more time, money and energy to their profession.



If we can be of service to you, mail us your statements of accounts; or, better still, call on us.

"WE GET THE COIN"—"WE PAY"

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.
Citizens National Bank Building, Los Angeles
Phone 60563

KENILWORTH SANITARIUM

KENILWORTH, ILL.
Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. An adequate night nursing service maintained. Sound-proofed rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

Resident Medical Staff
Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff
Consultation by appointment

All correspondence should be addressed to
KENILWORTH SANITARIUM
Kenilworth - - - Illinois



SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed

SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

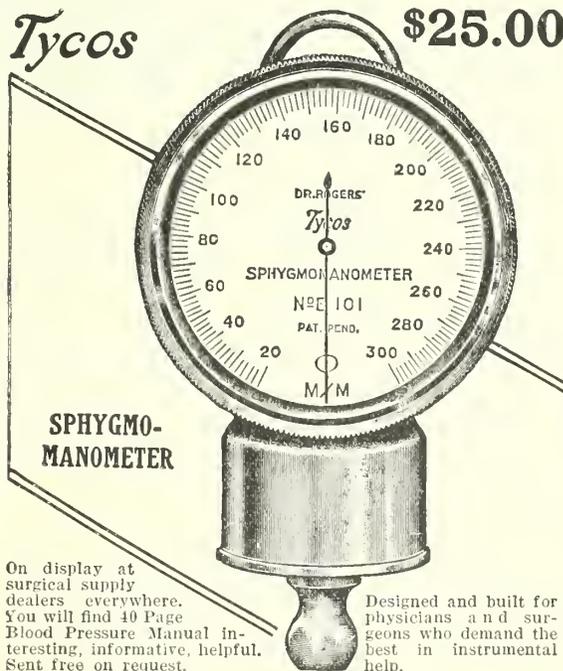
SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

Tycos

\$25.00



SPHYGMO-
MANOMETER

On display at
surgical supply
dealers everywhere.
You will find 40 Page
Blood Pressure Manual in-
teresting, informative, helpful.
Sent free on request.

Designed and built for
physicians and sur-
geons who demand the
best in instrumental
help.

Taylor Instrument Companies

ROCHESTER, N. Y.

Fever Thermometers, Urinary Glassware, Office Type
Sphygmomanometers



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

Phone Sutter 2540

FRANKLIN W. McCORMACK
RADIOGRAPHER

Referred Cases Only

318 HOWARD BLDG. 209 POST STREET
San Francisco

Member California Association of Radiographers

Dr. Louis Clive Jacobs

Practice Limited to

UROLOGY

456-462 Flood Building
San Francisco



Dickson-Bull Artificial Limbs

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue
Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



Office Phone Douglas 567 Res. Phone West 3721

DR. ETHAN H. SMITH
ORTHOPAEDIC SURGERY

Hours: 2 to 4 p. m.

Mornings and Sundays by appointment

Residence

Office

2617½ OCTAVIA ST.

701 PHELAN BLDG.
Grant Ave. and Market

THE TRIAD VIRTUES OF

Mercurochrome—220 Soluble

Which Promote Its Efficiency

Potency in Germicidal Activity

Laboratory tests have proved its high rank in bacteria killing power in various media.

Non-Irritability to Sensitive Surfaces

Solutions of sufficient strength to be potent can be used on the most sensitive mucosa with little or no irritation.

Penetrability and Fastness

Its penetrating qualities increase the field of its activity. The stain fixes the germicide in this field until bactericidal action can take place.

Recommended not as a panacea, but for the intelligent use of the medical profession.

"H.W.&D."—SPECIFY—"H.W.&D."

Hynson, Westcott & Dunning
BALTIMORE

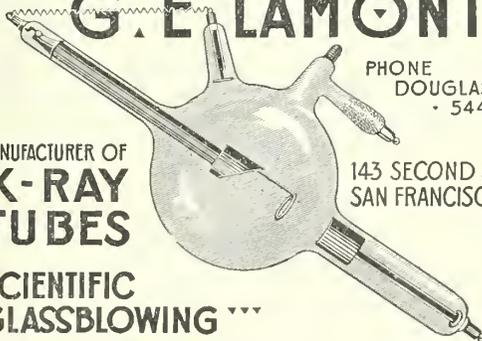
G. E. LAMONT

PHONE
DOUGLAS
- 5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING *****

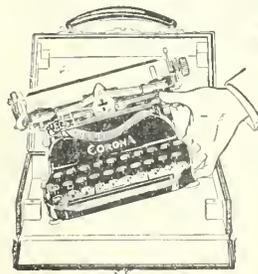


CORONA

The Personal Writing Machine
DOCTORS!

Save money and avoid mistakes by typing your own bills, case records, prescriptions, manuscripts and correspondence.

\$50 WITH CASE



Corona Typewriter Co., Inc.

Phone
Sutter 1538

546 MARKET ST.
San Francisco

Alcoholic and Drug Addictions



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. CHAS. S. FREEDMAN, Medical Director

PHONE MARKET 8048
PHONE MARKET 331

Cars Nos. 6, 7, and 17

This institution is now under the immediate supervision and control of Chas. S. Freedman, M. D. Every effort will be made to conduct same along strictly ethical lines.

Physicians are assured of the hearty co-operation of the staff in the management of their cases.

Alcoholic and Drug Addictions — Mental and Nervous Disorders

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

HELIOS

SUN CURE
SANITARIUM
SYSTEM ROLLIER

SAN RAFAEL, Marin County, Calif.

TELEPHONE S. R. 519

HELIO THERAPY or treatment by scientific application of Sun Rays is recognized by leading surgeons as a most efficient method of treating Bone and Joint Tuberculosis, Anemia and kindred diseases. Results, even in severe Hip and Spine cases, have been most gratifying. We will gladly co-operate in cases not yielding to ordinary methods.

For rates and particulars please apply

Charles L. Freytag, M. D.,

MEDICAL DIRECTOR
Schroth Building, San Francisco, Cal.
Telephone Garfield 148

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco, California
 Phone Douglas 62

Subscription prices, including postage, per annum in advance: Domestic, \$4.00; Canadian, \$5.00.

Domestic rates include United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, Canal Zone and Philippine Islands.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

SINGLE COPIES of this calendar year, 50 cents.

REMITTANCES should be made by check, draft, registered letter, money or express order. Currency should not be sent unless the letter is registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "Medical Society, State of California."

VOLUMES begin with the first of January. Subscriptions may commence at any time.

CHANGE OF ADDRESS notice should give both the old and the new address, and state whether the change is permanent or temporary. The change notice must reach us ten days in advance of the date of the issue which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he presents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must have their contributions typewritten—double-spaced and with ample margins—before submitting them. The expense is small to the author—the satisfaction is great to the editor and printer. We cannot promise to return unused manuscript, but try to do so in every instance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if necessary to elucidate the text, will be furnished by The Journal when satisfactory photographs or drawings are supplied by the author. Each illustration, table, etc., should bear the author's name on the back. Photographs should be clear and distinct; drawings should be made in black ink on white paper. While we cannot guarantee to return used photographs and drawings, we use our best endeavors to do so after the article is published, if the word "return" is written on the back of each.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

Prescribe

"Horlick's"

the Original and Genuine

Endorsed by the medical profession, who for over a third of a century have proven its reliability in the feeding of infants, nursing mothers, convalescents, and the aged.

Samples prepaid upon request

Horlick's Malted Milk Co.

Racine, Wisconsin

WM. H. WEEKS

Architect

75 POST STREET

SAN FRANCISCO

Largest Architectural Organization in the West Specializing in Hospitals and Public Buildings

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.**THE PUBLIC SERVICE STAFF**

General Surgery—Alanson Weeks, M. D.; A. R. Kilgore, B. S., M. D. **Orthopedic Surgery**—G. J. McChesney, A. B., M. D. **Urology**—W. P. Willard, M. D.; H. Partridge, M. D.; **Ophthalmology**—E. F. Glaser, M. D.; G. S. Wrinkle, M. D. **Otorhinolaryngology**—H. A. Fletcher, B. S., M. D.; K. Pischel, M. D. **Anesthesiology**—E. A. Leavitt, M. D.; Zilda Pettis, M. D. **General Medicine**—E. S. Kilgore, B. S., M. D.; **Neuropsychiatry**—H. W. Wright, M. D. **Dermatology**—B. Stone, M. D. **Pediatrics**—L. J. Schermerhorn, M. D. **Obstetrics and Gynecology**—W. G. Moore, M. D.; Armstrong Taylor, M. D.; W. H. Hill, M. D. **Pathology**—E. V. Knapp, M. D.; H. E. Foster, M. D. **Roentgenology**—J. H. Rehfish, A. B., M. D. **Radiology**—L. Taussig, A. B., M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent

VEN. J. A. EMERY, Secretary and Treasurer
W. H. HILL, M. D., Resident Physician

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

Sherman's polyvalent vaccines are dependable antigens

Local Agent:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY

LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"

WHY GAMBLE WITH AN ANTITOXIN SYRINGE ?

All that can be done to make the Lilly Antitoxin Syringe ready for immediate use has been done. No single feature determines its superiority. There are as many factors of excellence as there are component parts. You will find the Lilly Antitoxin Syringe Package simple in construction and dependable in action, combining convenience and utility to a high degree. With it you can meet emergencies with confidence and assurance.

A trial of the Lilly Antitoxin Syringe Package is a most convincing argument in its behalf.

WRITE FOR LITERATURE

Supplied Through The Drug Trade

ELI LILLY & COMPANY

INDIANAPOLIS, U. S. A.



Infant Feeding
Diet Materials

Observe and Reflect So as to Know the Truth

Most physicians know that their individual formulas of MEAD'S DEXTRI-MALTOSE, Cow's Milk and Water, give gratifying results in most cases of infant feeding.

There are occasions when the doctor wishes to prescribe Barley Water as a temporary diet, or perhaps he wishes to prescribe Barley Jelly as one of the first foods given after the weaning period. Above all, the doctor wishes the mother to carry out his instructions. That is why MEAD'S INFANT DIET MATERIALS do not carry directions on the packages. Here are two Diet Materials that you can always rely on:

MEAD'S DEXTRI-MALTOSE
(Dextrins and Maltose)

MEAD'S STERILIZED BARLEY FLOUR

Please write for Booklet No. 90, which gives full description of Mead's Barley Flour.

THE MEAD JOHNSON POLICY

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own private prescription blank.

CANADIAN BRANCH, 109 DUKE STREET, TORONTO, ONTARIO, CANADA

MEAD JOHNSON & COMPANY
EVANSVILLE
INDIANA, U.S.A.



Atophan
TRADE MARK

Has decidedly more prompt pain, inflammation and congestion relieving properties than the Salicylates, simple or complex.

Information, Literature and Ample Trial Quantity from

Besides showing a remarkable degree of freedom from heart-depressant, kidney irritant, constipating and cumulative by-effects.

Schering & Glatz, Inc.,
150 Maiden Lane, New York.



RHEUMATISM

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M.D., Manager.

LAS ENCINAS

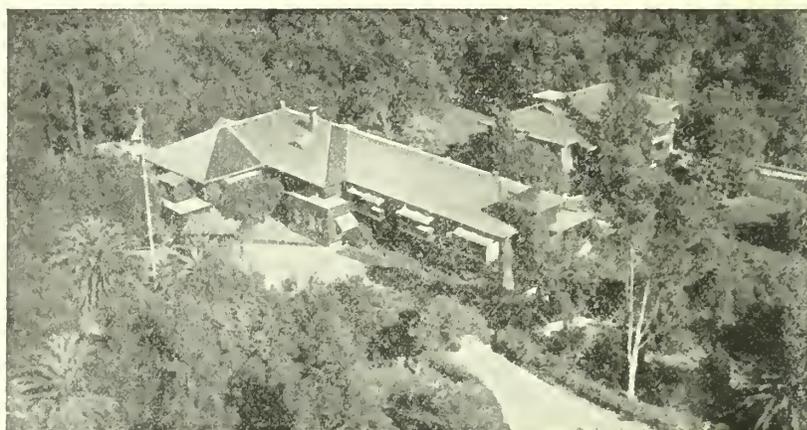
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.
Cuisine Excellent.
Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.

Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.
Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.
CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

(THE BANNING SANATORIUM)

Banning (Riverside County) California

This well known institution (for the treatment of tuberculosis of the throat and chest) has recently been rebuilt and enlarged. The City of Banning (suffering from phthisiophobia) passed a "zoning" ordinance that forced abandonment of the former site of this sanatorium. A new site was purchased. An injunction was sought to prevent the use of the new site for sanatorium purposes. A temporary injunction was granted but, at the final hearing, this injunction was dissolved and the right to build and maintain the sanatorium was established. Many of the most prominent physicians in the state contributed testimony that enabled us to win the suit. During the progress of these suits the institution found it difficult to provide for patients demanding admission. Now, however, in its new quarters, it is prepared to accept all who apply. To physicians who are unfamiliar with our work we will gladly furnish references to other physicians (in almost every town in California) who have had patients or relatives in this institution. A circular describing conditions and containing rates will be mailed upon request. Address

DRS. KING and BRAMKAMP.

BANNING, CALIFORNIA.

The Laboratories of
REED & CARNRICK
Are Devoted to Making

Organic Physiological Products

Full particulars concerning these and answers to all queries will be gladly given. Please remember that in writing to **REED & CARNRICK** you will be answered by medical men thoroughly trained in hospital work and practice and not by theoretic laboratory workers.

REED & CARNRICK
42-44-46 Germania Avenue
Jersey City, N. J.

Lakeside 2808

P. L. ANSELL X-RAY LABORATORY

Referred Work Only
Thomson Building

Oakland

Member California Association of Radiographers

Widemann's Evaporated Goat Milk



Baby
Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
San Francisco, Cal.

Phone Kearny 296

DR. ALFRED C. REED

Practice Limited to

INTERNAL AND TROPICAL MEDICINE
350 POST STREET SAN FRANCISCO

Office Phone Main 2068

DR. WILLIAM H. KIGER

DISEASES OF RECTUM AND COLON

Hours by appointment

Suite 711-712 Pacific Mutual Bldg.
523 WEST SIXTH ST. LOS ANGELES

Office Phone
Sutter 5966

Residence Phone
Sutter 700

DR. LIONEL D. PRINCE

Practice limited to

ORTHOPEDIC SURGERY
368 FLOOD BUILDING SAN FRANCISCO
Hours: 2 to 4

Residence Telephone Bayview 962

DR. JOHN ZIEG

ROOM 867 FLOOD BUILDING

Hours: 2 to 4

Telephone Kearny 788
870 MARKET STREET, SAN FRANCISCO, CAL.

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.), State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska.

Practice limited to Nervous and Mental Diseases

Sanitarium Accommodations

Offices:

620 Brockman Bldg., Los Angeles, Cal.

DR. HARRY SPIRO

Practice Limited to

CARDIO-VASCULAR DISEASES

300 COLESON BLDG. 212 STOCKTON ST.

San Francisco

Phone Garfield 22

FRESNO BIOLOGICAL DEPOT

412 Bank of Italy Bldg.

Fresno, California

Phone 1434

Night 3083-W

San Joaquin Valley Distributors

Cutter's Biologics

Metz Products. Steripules

Travers Surgical Instruments

Office and Hospital Equipment

MICROSCOPES

Bought
Sold
Exchanged
Repaired

W. O. HAMMER
35 Montgomery St.
San Francisco,
California
Phone Kearny 708

32 years old and still perfectly soluble

In April, 1921, a physician of Lawrence, Mass., used one of our HT'S of morph. sulph. 1-8 that we had sent to him as a sample way back in 1889 and he found it just as soluble as a freshly made tablet.

It is such practical proofs that seemingly warrant our being called

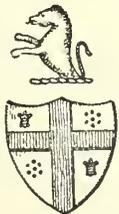
“the hypodermic tablet people”

SHARP & DOHME



WE CARRY A COMPLETE STOCK
FURNITURE - SURGICAL INSTRUMENTS
GLASSWARE - ENAMELWARE
LABORATORY SUPPLIES
MICROSCOPES - VIBRATORS
HIGH FREQUENCY OUTFITS, ETC.
DISTRIBUTORS OF
PERFECTION BRAND - SURGEONS'
GLOVES - CATGUT - THERMOMETERS
Write Us For Prices

Bischoff's Surgical House
(The House of Service)
Oakland, California



SPECIALIZING IN
OCULISTS' PRESCRIPTIONS
SINCE 1909

John J. Wooster Co
Opticians

234 Stockton St.

At Union Square

Portland Surgical Hospital

The Portland Convalescent Hospital, 862 Marshall St.



Miss Elva Hill, Superintendent

The Portland Surgical Hospital, 611 Lovejoy

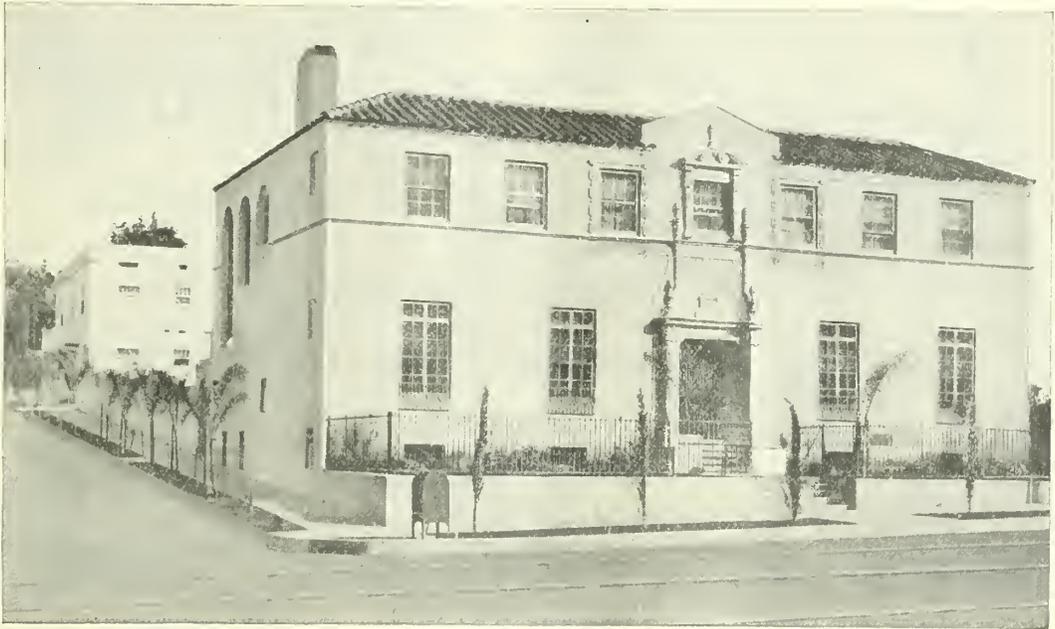


Mrs. Tom Richardson, Superintendent

Hospitals operated co-ordinately for the Clinic of

Drs. Coffey, Sears, Johnston and Payne

Downtown Offices: 11th Floor, Stevens Building
PORTLAND, OREGON



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Diene emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M. D.
Medical Director

DIRECTLY and INDIRECTLY

Liquid Peptonoids

IS AN IMPORTANT NUTRITIONAL AID IN THE SICK ROOM

DIRECTLY

BECAUSE it is acceptable when all other food is rejected *and* offers immediately available nitrogen *and* calories—in sufficient amounts to be *of* real importance in emergency feeding—THEREBY saving tissue waste *and* preventing collapse.

INDIRECTLY

BECAUSE it sets the digestive pendulum in motion, kindles the appetite *and* creates food tolerance—THUS speeding the moment when more substantial nourishment may be added to the dietary.

Also DRY PEPTONIDS (Soluble). 40% Protein—51.5% Carbohydrate.

THE ARLINGTON CHEMICAL COMPANY
YONKERS, N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Marshall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg NEW YORK Fifth Av. & 42 St.



RADIUM

TUBULAR APPLICATORS
NEEDLE APPLICATORS - FLAT APPLICATORS
and
APPLICATORS of SPECIAL DESIGN
Complete Installations of Emanation Apparatus

SOLD ON BASIS of U. S. BUREAU
of STANDARDS CERTIFICATE

Correspondence Invited By Our
PHYSICAL, CHEMICAL & MEDICAL DEPARTMENTS

THE RADIUM COMPANY
OF COLORADO, Inc.
Main Office and Reduction Works
DENVER, COLO., U. S. A.

Branch Offices

| | | |
|------------------------------------|-----------------------------|-----------------|
| 122 South Michigan Ave. CHICAGO | 50 Union Square NEW YORK | LONDON PARIS |
|------------------------------------|-----------------------------|-----------------|

WE STRIVE TO PLEASE BOTH
PHYSICIAN AND PATIENT

BEST DRUGS

SHUMATE'S PHARMACIES

SPECIALTY PRESCRIPTIONS

14 DEPENDABLE STORES **14**
SAN FRANCISCO

A. BERBERT & BRO.
Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES
Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street
Between Post and Sutter Streets
SAN FRANCISCO

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. F. Bullington..... | J. O. Chiapella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | M. L. Fernandez, Pinole..... | L. St. John Hely, Richmond..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Igllick, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | |
| Los Angeles County Medical Society..... | Walter Brém, Los Angeles..... | Harlan Shoemaker Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Prett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | J. A. Beck, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | Edward F. Donnelly, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | J. H. Lang, Fullerton..... | W. C. Mayes, Santa Ana..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | C. L. Curtiss, Redlands..... | E. J. Eyttinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | H. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | J. E. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | J. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Bly, Red Bluff..... | 1st Tuesday. |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lela J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 686.

Member Federal Reserve System and Associated Savings Banks of San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

JUNE 30, 1921

| | | | |
|----------------|-------------------------------|-------------------------------|----------------|
| Assets | \$71,383,431.14 | Capital Actually Paid Up..... | \$1,000,000.00 |
| Deposits | 67,792,431.14 | Reserve and Contingent Funds | 2,591,000.00 |
| | Employees' Pension Fund | | \$357,157.85 |

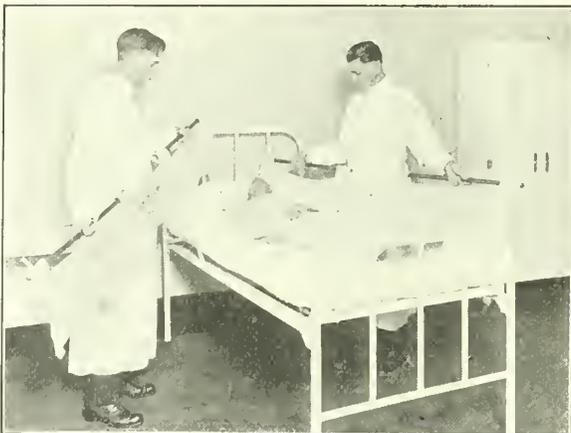
OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, Asst. Cashiers; C. W. HEYER, Manager Mission Branch; W. C. HEYER, Manager Park-Presidio District Branch; O. F. PAULSEN, Manager Haight Street Branch

GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys

BOARD OF DIRECTORS

John, A. Buck, Geo. Tourny, E. T. Kruse, A. H. Schmidt, I. N. Walter, Hugh Goodfellow, A. Haas, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson.



DOES NOT DISTURB THE PATIENT

Made in two parts, simply, yet strongly connected, the Gwin-Flex stretcher can be readily removed without disturbing the patient. In many post-operative conditions the use of this stretcher insures not only greater comfort for the patient, but likewise far greater safety.

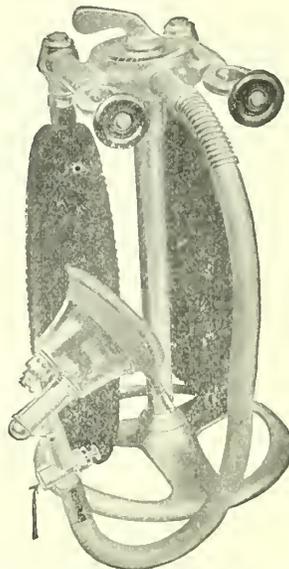
The two parts of the Gwin-Flex Stretcher are held together by a flexible steel tape which is easily removed, enabling both parts of the stretcher to be withdrawn without disturbing the patient. The stretcher is readily sterilized as the handles and tape are removable. The stretcher is extremely strong, although light in weight. Particularly convenient in turning sharp angles and passing through doorways.

May we send you full particulars, together with list of prominent hospitals now using the Gwin-Flex Stretcher?

GWIN-FLEX STRETCHER CO.

Box 954

SAN FRANCISCO, CAL.



THE BABY CLARKE is appropriately named. It is a portable gas outfit which the physician can very well take with him as part of his obstetrical equipment. There is constant and legitimate call from women patients that some of the terrors of obstetrical pain be relieved. It is the common practice now in hospitals to use gas for this purpose. THE BABY CLARKE will render the same service to the obstetrician and may be carried to the patient's home and used there or anywhere else.

The portable apparatus is automatic, and requires no attention in analgesia, also used in minor operations. Most progressive men are using Nitrous Oxid-Oxygen in their Obstetrics.

Write for Literature or Demonstration

We specialize in GAS OUTFITS, small monthly payments

DOCTORS' SUPPLY CO.

948 Market St., San Francisco
PHONE DOUGLAS 2831

Schick Test Squibb

A minute quantity of diphtheria toxin for intracutaneous injection. A reliable clinical test producing a characteristic skin reaction where the normal antitoxin of the blood is insufficient to protect.

Diphtheria Toxin-Antitoxin Mixture Squibb

Its use results in the production of an active immunity to diphtheria and according to the work of Park and his colleagues probably affords protection for three years or longer.

Diphtheria Antitoxin Squibb

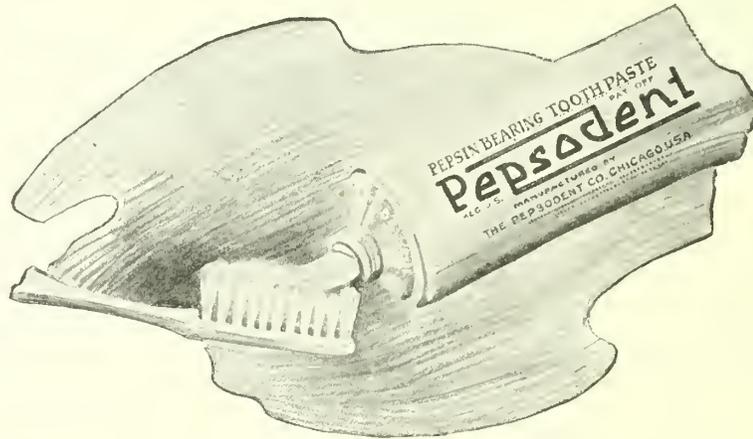
A highly purified and concentrated antitoxin, high in potency, small in volume and low in total solids.

Squibb Biologicals are produced under the personal direction of Dr. John F. Anderson, formerly Director of the Hygienic Laboratory of the U. S. Public Health Service.

E. R. SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

As a physician you will appreciate the relief that a parent feels who knows diphtheria to be a preventable disease. What a satisfaction it would be if it were generally recognized that through the agency of the Schick Test and Diphtheria Toxin-Antitoxin Mixture, the dangers from that disease could be avoided.

As diphtheria antitoxin revolutionized the treatment of diphtheria so the Schick Test and Toxin-Antitoxin Mixture have made possible its practical elimination from our communities.



No Soap—No Chalk

Pepsodent is mildly and properly acid

The use of alkalis in the mouth is known to be incorrect. Only alkaline tooth pastes contain soap and chalk. They depress the flow of saliva. They interfere with Nature's method of protecting the teeth.

Pepsodent is a salivary stimulant, as demanded by dentists.

It increases salivary flow and reduces viscosity.

It increases ptyalin—the starch digestant in saliva, to remove starchy deposits that adhere to enamel.

It increases the alkalinity—aiding Nature to cope with acids which destroy enamel.

These are the effects—the aids to Nature—which dentists now demand.

Other ingredients

The polishing agent—essentially tricalcium phosphate—keeps the teeth so highly polished that plaque cannot easily adhere.

The results of the use of Pepsodent are apparent everywhere. Its use is without risk or injury. Its polishing agent does not scratch enamel. Natural teeth brushed 300,000 times with Pepsodent show no scratches even under a microscope.

Answering questions

Men qualified by education in the Dental Department will answer all questions. Scientific bulletins on topics of specific interest and a full-sized tube of Pepsodent will be sent on request.

Pepsodent PAT. OFF.
REG. U.S.

A Modern Dentifrice

An acid tooth paste which brings five effects desired by modern authorities

THE PEPSODENT COMPANY, 703
7349 Ludington Bldg., Chicago, Ill.

Please send me, free of charge, one regular 50c size tube of Pepsodent, with literature and formula.

Name

Address

Enclose card or letterhead

WALTER V. BREM, M. D.

A. H. ZEILER, M. D.

ROY W. HAMMACK, M. D.

CLINICAL LABORATORY

of

Drs. Brem, Zeiler and Hammack**FEE SCHEDULE****BLOOD—**

| | | | | |
|--|--------|-------|---------|---------|
| Leucocyte counts | \$2.00 | } \$3 | } | \$ 5.00 |
| Differential leucocyte counts | 2.00 | | | |
| Red blood counts | 2.00 | | | |
| Hemoglobin determinations | 2.00 | | | |
| Blood cultures | | | | 10.00 |
| Blood smears for blood parasites, as malarial plasmodia | | | | 2.00 |
| Blood group tests | | | | 2.00 |
| Blood Chemistry (sugar, urea nitrogen, non-protein nitrogen, creatinin, uric acid, CO ₂ combining power), single item | | | | 5.00 |
| Each additional item | | | | 2.00 |
| Wassermann test | | | | 5.00 |
| Widal (agglutination) test | | | | 2.00 |
| Coagulation and bleeding times | | | | 5.00 |

URINE—

| | |
|--|------|
| Urinalysis, routine | 2.00 |
| Phenolsulphonephthalein excretion in specimens delivered to laboratory | 3.00 |
| Microscopic examination for tubercle bacilli | 2.00 |
| Bacteriologic examination | 5.00 |

STOOLS—

| | |
|---|-------|
| Microscopic examination of stools | 5.00 |
| Examination of stools for invisible blood | 2.00 |
| Bacteriologic examination for typhoid and dysentery group | 10.00 |

STOMACH CONTENTS—

| | |
|---|------|
| Chemic and microscopic examination of stomach contents sent to the laboratory | 5.00 |
| Test meal and obtaining contents for examination | 5.00 |

SPUTUM—

| | |
|---|-------|
| Microscopic examinations for tubercle bacilli | 2.00 |
| Pneumococcus typing with mouse method | 10.00 |

EXUDATES—

| | |
|---|-------|
| Bacteriologic and microscopic examination of exudates | 5.00 |
| Diphtheria cultures | 2.00 |
| Microscopic examination of smears, as for gonococci | 2.00 |
| Cerebro-spinal fluid examinations for syphilis (Wassermann test, cell count, globulin test) | 5.00 |
| Colloidal Gold test | 5.00 |
| Lumbar punctures | 10.00 |

DARK FIELD EXAMINATION for spirochaetes

5.00

TISSUES—

| | |
|------------------------------------|-------|
| Tissue examination | 10.00 |
| Frozen sections at operation | 15.00 |

VACCINES—BACTERIAL

5.00 to 15.00

WATER—

| | |
|---------------------------------|-------|
| Bacteriologic examination | 10.00 |
|---------------------------------|-------|

MILK—

| | |
|--------------------------|------|
| Chemic examination | 5.00 |
| Bacterial count | 5.00 |

ANIMAL INOCULATION for tubercle bacilli

10.00

BASAL METABOLISM DETERMINATION

15.00

BLOOD TRANSFUSION (not including cost of donors)

50.00 to 100.00

EXAMINATION OF ANIMAL BRAINS FOR RABIES

10.00

ANTI-RABIC TREATMENT, including vacche material

100.00

OTHER LABORATORY EXAMINATIONS—Fees on request.

INTRAVENOUS and intraspinal therapy (intravenous serum, glucose, salt solution and intraspinal serum)—Fees on request.

CONTAINERS FOR SPECIMENS SUPPLIED ON REQUEST.

MESSENGER SERVICE. Reports telegraphed or telephoned on request.

1003 Pacific Mutual Bldg., Los Angeles, Calif.

TELEPHONE 14235

PICO 3596

FOR SALE—One Victor X-Ray Machine and Equipment Complete, Medical Library, Surgical Instruments, 2 Operating Tables, etc. For particulars write Silas W. Mack, Administrator of the estate of William A. Lillie, deceased, Monterey, California.

Phone 587-J

DR. FRANCIS B. SHELDON
DIAGNOSTIC AND THERAPEUTIC
X-RAY

Hours: 9 to 12 and 2 to 5

Sunday by appointment only

1014-16 MATTEI BLDG.

FRESNO, CAL.

POSITION WANTED — Laboratory technician, U. of C. graduate, with four years' experience in clinical and research laboratory work, specializing on chemistry, serology and tissue sectioning. Have had experience with the Jones & Benedict metabolism apparatus. Salary \$175, or \$125 with board and room. Address Miss C., care of California State Journal of Medicine, 930 Butler Building, San Francisco.

FOR SALE—Drug store and practice, an excellent location for a male physician in the center of a rich farming district with a large irrigation plant employing many men near by. No drug store or physician nearer than Chico, 12 miles away. Will sell cheap. Address Dr. M. P., care of California State Journal of Medicine.

WANTED—Position as hospital superintendent. Thoroughly versed in administrative work, property and supplies. Thirty years' experience. Jefferson Medical College 1882. (M. D.) Address Dr. W. N. P., care of California State Journal of Medicine, 930 Butler Building, San Francisco.

FOR SALE—Physician's office equipment in OAKLAND consisting of steel enamel operating table, instrument cabinets, sterilizer, chairs, tables, desk, reception room furniture and rugs. Address "Medico," care State Journal of Medicine, Butler Building, San Francisco.

SPLEEN EXTRACT

(Archibald)

A highly potent physiological adjuvant utilizing the known properties of the Spleen for exalting the body defenses; increasing the number of red cells and all types of leucocytes. Particularly useful in chronic infection, Anemias, Malaria, Tuberculosis.

In 2 c.c. Ampules, physiologically standardized

THE VITALAIT LABORATORY

of California

FLOOD BLDG., SAN FRANCISCO

320 W. COLORADO ST., PASADENA

CALCREOSE

In Bronchitis and Tuberculosis

CALCREOSE (Calcium Creosotate) has proven itself to be a valuable remedial agent, especially when it is desired to continue the administration of a creosote product for a long period of time.

CALCREOSE has the pharmacologic activity of creosote without its disagreeable by-effects on the stomach and intestinal tract. Patients do not object to its use because it does not nauseate or cause any gastric discomfort or distress. Therefore, it can be administered in comparatively large doses for long periods of time.

CALCREOSE also acts like a tonic in that it stimulates the appetite, improves digestion; thus increasing weight and resistance.

Write for samples and literature

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

Diagnosis

X-Ray

Radium

Laboratory

Therapy

Burnett Sanitarium

Fresno, California

For those patients demanding the use of Radium and X-Ray we are in a position to offer to the medical profession the full and unqualified services of our laboratory. This laboratory is equipped with both Radium element and a complete Emanation plant which enables us to construct any application we may desire to fit the given case. To those physicians wishing to make their own application we are prepared to serve with Radium emanation as they may direct.

Address Dr. D. H. Trowbridge,

Secretary Burnett Sanitarium Co.

Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
 X-Ray and High Frequency Coils and Machines
 Interrupterless X-Ray Transformers (Three Sizes)
 Coolidge Tube Transformers and Controls
 Electric Bakers (Limb and Body)
 Ozone Generators—Single, Double and Quadruple
 Electric Light Bath Cabinets with Thermo-Vacuum Space
 Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and
 Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for
 price lists and descriptive literature

HOURLY NURSING SERVICE

SAN FRANCISCO COUNTY NURSES'
 CENTRAL DIRECTORY

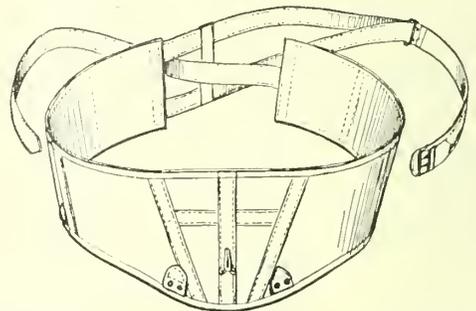
1155 Pine Street
 Telephone: Prospect 66
 San Francisco, California

Phone Park 8998

E. H. MARKEL Orthopedic Appliances

TRUSSES AND ELASTIC HOSIERY

1138 Mission Street Between 7th and 8th
 San Francisco, California



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are especially well cared for in a unique and efficient manner. For twenty-one years we have made our business a study, and by confining ourselves to these specialties have developed methods that assure relief to the patient and satisfaction to the doctor.

Every physician should secure a copy of our catalogue, which explains our business in detail. We have the largest and best equipped plant on the Pacific Coast and are the exclusive agents for the famous Drs. Smith's "Honest John" Truss, the only practical device for holding at the internal ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
 San Francisco

1522 Broadway
 Oakland

Telephones—Office, Kearny 2345
 Emergency, West 1400
 Hours: 2:30 to 4:30 and by appointment

DR. ARTHUR COLLIS GIBSON

Practice Limited to Diseases of the
 EAR, NOSE AND THROAT
 Equipped for Oesophagascopy and Bronchoscopy
 OFFICE, 516 SUTTER ST., SAN FRANCISCO

DR. LIONEL A. B. STREET
 (Late of Shanghai, China)

Announces the opening of his
 Consulting Rooms
 Suite 1023 Pacific Mutual Bldg.
 523 W. SIXTH ST. LOS ANGELES, CAL.
 Hours: 2 to 4 P. M.
 Residence 621 South Virgil Avenue
 Telephone Wilshire 6109
 August first 1921
 Office Phone 15626

Office Phone Residence Phone
 Doug. 4186 Fillmore 5537

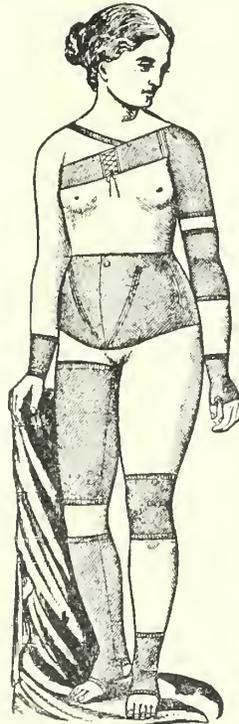
DR. RALPH B. SCHEIER
 DISEASES OF THE LUNGS
 Hours by Appointment
 FLOOD BUILDING SAN FRANCISCO

Phone Oakland 5809

DR. N. AUSTIN CARY
 Practice Limited to
 ORTHOPEDIC SURGERY
 304 Federal Realty Bldg. OAKLAND, CAL.

ELASTIC STOCKINGS

FOR
**VARICOSE
 VEINS**



We specialize in the making and fitting of Elastic Hosiery, Abdominal Belts and Trusses. We are the oldest truss and elastic house in the West. Over 40 years' successful business experience.

TRUSSES, \$3.00 up
ELASTIC HOSE, \$2.50 up
 Lady Attendant

**Hatteroth's Truss
 and Elastic House**

232 POWELL ST.
 Bet. Geary and O'Farrell
 Second Floor

HOSPITAL-BEDS MATTRESSES AND BED-APPLIANCES AT FACTORY PRICES

We also do mattress renovating

Ewd. L. McRoskey TELEPHONE
 PARK 4533
THE RETAIL MATTRESS FACTORY

1506 MARKET ST., at VAN NESS AVE.

POSITION WANTED—A graduate nurse, Canada, with clinical laboratory experience, desires position with private physician, or group of physicians, as laboratory technician. Apply B. E. B., 435 West 42nd Street, Los Angeles, Cal.

FOR INQUIRIES ON

Poison Oak Extract "Broemmel"

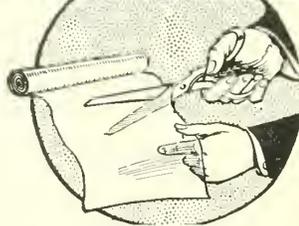
See Journal California Medical Journal, Vol. XIX, No. 5,
Pages 188, 189, 190, 191, 192, 193, and The Journal
American Medical Association, Vol. 17, No. 12, Pages

Address

2501 California Street

San Francisco, Cal.

WHAT CELLOSILK DOES



The improved Cellosilk is a

Non-Adherent, Transparent, Occlusive, Sterilizable, Water Proof, Surgical Dressing

Satisfactorily meeting the professional requirements for a dressing of this kind that will not deteriorate with age or on account of atmospheric conditions.

Prepared in PERFORATED and IMPERVIOUS Forms

Besides being more serviceable, efficient and economical than oiled silk, gutta percha, rubber tissue, etc., it is successfully used for many ways where all other materials have proven inadequate.

Price List

- Perforated Form—For wounds requiring air and drainage:
 "Standard Perforate" Roll 9 in. x 12 ft.\$2.00
 Impervious Form—For impervious coverings, drain tubes, etc.:
 "Standard Heavy" Roll 9 in. x 12 ft. 1.75
 "Standard" (single weight) 9 in. x 12 ft. ... 1.25
 (Special sizes and prices for Hospitals)

Sold by all Physicians, Surgeons and Hospital Supply Houses

Literature and Samples sent on request

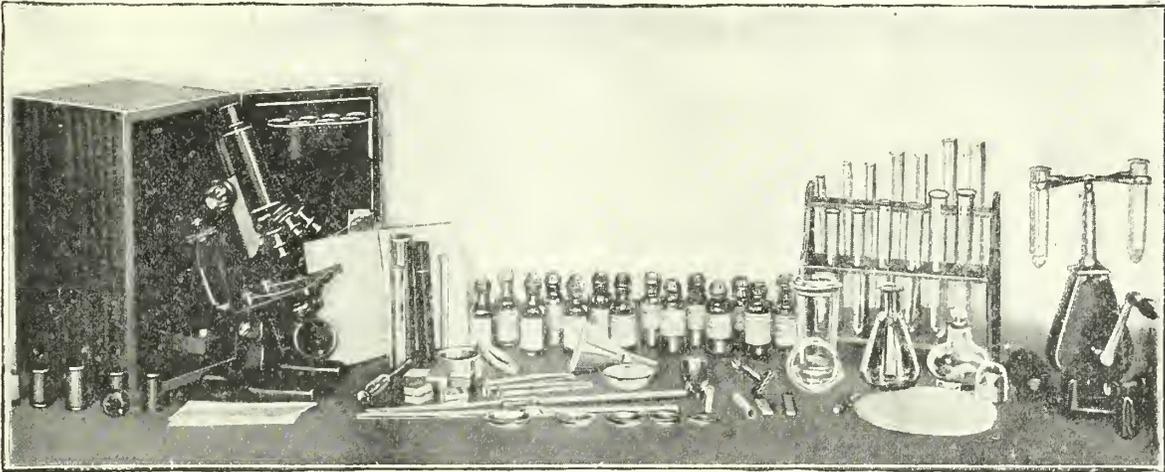
MARSHALLTOWN LABORATORIES
MARSHALLTOWN, IOWA

We Better Serve As We Progress

Modern Laboratory Equipment for the Progressive Physician

THE VALUE OF THE OFFICE LABORATORY

A SIMPLE and practical office laboratory in which the physician is able to do the simpler laboratory tests including urinalysis, blood counts, and microscopic examination of specimens is immeasurably valuable. The great value of such an outfit lies not only in the advantage of the physician himself observing reactions, bacterial growths, etc., and interpreting them, but also in the saving of time and outside laboratory expense, the great additional service rendered to patients as well as the important psychological effect which modern scientific apparatus has upon the layman.



THIS COMPLETE OUTFIT ON VERY EASY TERMS

OUR complete Office Laboratory Outfit together with the text books is sufficiently comprehensive to enable the physician to do most of the simpler laboratory tests including urinalysis, differential blood counts and microscopic examination of specimens. By adding a haemacytometer, the outfit will be complete for blood counting.

This outfit is sold on **Exceptionally Easy Terms**—so easy, in fact, that the physician can easily pay for it on the monthly payment plan without feeling it. This outfit is without question the best value for the money we have ever offered. The entire outfit is given away free, the price of the microscope only being charged. Complete outfit consists of the following:

1 36H Spencer Microscope
1 Microscope Carrying Case
1 6x (1 3-5 inch) Eye Piece
1 10x (1 inch) Eye Piece
1 Dust Proof Triple Nose-Piece
1 Objective, 16mm
1 Objective, 4mm
1 Objective, 1 8mm, Oil Immersion
1 Substage Condenser
1 Set Stage Clips
1 Concave Mirror
1 Blue Glass Disc
1 Frosted Glass Disc
1 Metal Disc
1 Hand Power High Speed Centrifuge, complete with tubes and shields
1 Large Test Tube Rack
12 Assorted Test Tubes
1 Test Tube Brush
12 Micro Glass Slides
50 Micro Cover Glasses
5 Assorted Watch Glasses
1 Pr. Slide Holding Forceps
1 Coplin Staining Jar
1 Alcohol Lamp
1 Pipette, 1cc (mill)

1 Pipette, 10cc
1 Wire Loop, for smears
1 Package of Lens Paper
1 Package Filter Paper
1 Erlenmeyer Flask, 4 oz.
1 Urinometer and Jar
1 Glass Funnel
1 Evaporating Dish
1 Glass Graduate
1 Blood Lancet
1 Book red Litmus Paper
1 Book blue Litmus Paper
1 Package Slide Labels
1 Text Book, use and care of microscope
1 Text Book, laboratory notes covering urinalysis, hematology, examination of stomach contents and applied bacteriology
1 Bottle of Cedar Oil Immersion

STAINS AND REAGENTS GRAM'S STAIN

1 Bottle Carbol Gentian Violet
1 Bottle Gram's Iodine
1 Bottle Dilute Carbol Fuchsin

NEISSER'S DIPHTHERIA STAIN

1 Bottle Solution No. 1, Methylene Blue
1 Bottle Solution No. 2, Bismarck Brown

ACID-FAST BACILLI STAIN

1 Bottle Carbol Fuchsin
1 Bottle Acid Alcohol
1 Bottle Loeffler's Alkaline Methylene Blue

STOCK STAINS

1 Bottle Methylene Blue
1 Bottle Eosin
1 Bottle Wright's Blood Stain
1 Bottle Haematoxylin

REAGENTS

1 Bottle each, Fehling's Solutions

FOR MOUNTING

1 Bottle Canada Balsam

2AM25 — Complete Outfit, Including Spencer Handle Arm Microscope \$145.00

FRANK S. BETZ COMPANY

Wholesale and Mail Order Departments
HAMMOND, INDIANA

Write for descriptive booklet

Retail Dept.
NEW YORK
6-8 W. 48th St.

Retail Dept.
CHICAGO
30 E. Randolph St.

Troy Laundry Machinery Company, Ltd.

MANUFACTURERS OF COMPLETE LINE OF

Laundry and Sterilizing Machinery

FOR

Hospitals, Sanitariums and Public Institutions

SALES OFFICES

Los Angeles

San Francisco

Seattle

450 E. Third Street

954-956 Mission Street

107 Jackson Street

Factory 23rd and La Salle St.

Chicago, Illinois

SANITARIUM FOR SALE

BUILT FOR A MODERN MATERNITY HOSPITAL

Fine location in San Diego, $1\frac{3}{4}$ miles from business center. Beautiful Marine and Mountain view. All sunny rooms. Steam heating system. Operating room. Call bell system. Soundproof walls. Double Garage with sleeping rooms above. Tennis court. Lot 100x140, south front.

Price \$14,000, Unfurnished, \$4500 Cash, Balance Terms

W. H. Nichols, 724 E Street, San Diego

One of the Oldest Surgical Supply Houses in San Francisco

Constantly alert to the needs of doctors and hospitals, it is our vigorous aim immediately to stock the newest and most modern surgical instruments, office equipment and hospital supplies.

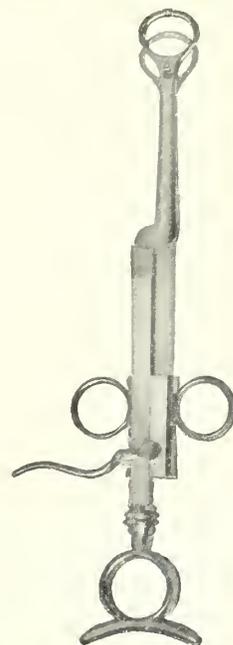
*Write us for information
on these or other items*

**SURGICAL INSTRUMENTS
STEEL ASEPTIC FURNITURE
SICK ROOM COMFORTS**

**OFFICE SUPPLIES
HOSPITAL EQUIPMENT
POST OPERATIVE BELTS**

HEALTH APPLIANCES OF EVERY CHARACTER

CHURCHMAN'S TONSILECTOME—For the quick, safe and sure removal of tonsils by use of a strong, blunt blade instrument.. Is always ready for use.



PERCY J. MEYER & CO.

379 Geary Street, San Francisco *Devoted to the Service of the Doctor*

Walters Surgical Company

"Service and Dependability"

441 SUTTER STREET

Between Powell and Stockton Streets

Phone: Douglas 4 0 1 7

**HIGH GRADE
SURGICAL INSTRUMENTS
and
HOSPITAL SUPPLIES**

TRUSSES
ABDOMINAL SUPPORTERS
ELASTIC HOSIERY
ORTHOPEDIC APPLIANCES
LABORATORY APPARATUS, STAINS
ELECTRO-THERAPEUTIC and X-RAY
APPARATUS

Our Illustrated Surgical Instrument Catalogue
Free Upon Request

STERIPULES

(The Perfect Ampule)

For intravenous, intramuscular and
subcutaneous use

"STERIPULES"

are prepared in modern laboratories under
ideal conditions. Double distilled water;
chemicals of highest purity and alkali-free
glass ampules only are used.

Literature gladly furnished

Stocked complete by

Pacific Surgical Mfg. Co.
320 WEST SIXTH STREET, LOS ANGELES

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

Pacific Wassermann Laboratories



Prompt • Accurate • Dependable

OUR prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over ten years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy.

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each . . . | \$1.00 |
| Urine, Acetone or Diabetic Acid, each . . | 1.00 |
| Sputum Examination for T. B., etc. . . . | 1.00 |
| Smear Exam. for Gonococcus, etc. . . . | 1.00 |
| Stool Examination for Parasites, etc. . . | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. . | 5.00 |

Complete Fee List sent on request

*Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established.
Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.*

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California

CATTON MEDICAL SOCIETY
MAY 4 1920

State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

NOVEMBER, 1921

NOVEMBER CONTENTS

Editorials:

- More About the Yosemite Meeting. 423-446
- About "Fee Splitting" 423
- Evangelists 424
- Original Articles:**
- An Anatomical Study of Eight Cases of Degeneration of the Cornea. By Charles Maghy, M. D. 424
- Public Health and Medical Welfare. By Philip K. Brown, M. D. 425
- Neurological Findings in One Thousand Group Study Cases. By Thos. G. Inman, M. D. 428
- Metabolism Studies in Pulmonary Tuberculosis. By R. A. Kocher, M. D. 430
- The Differentiation of Early Meningitis and Mastoiditis. By Wm. J. Mellinger, M. D. 433
- The Rationale of Radiation in the Female Pelvis. By Albert Soiland, M. D. 434
- Infantile Atrophy. By Joseph Robinson, M. D. 436
- Treatment of Syphilis With Silver-Salvarsan. By Drs. Vecki and Ottinger 437
- The Early Diagnosis and the Treatment of Cancer of the Cervix, By Roland E. Skeel, M. D. 438
- Notice—Industrial Medicine Symposium in the December Journal.... 441

- The Value of Blood Studies. By W. P. Lucas, M. D. 441
- The Yosemite Meeting..... 446
- General Session and Section Officers for the 1922 Meeting of the State Society 447
- Second Semi-Annual Meeting of the Council of the State Society and the Officers of Constituent Societies 448
- Council of the State Society (Abstract of the Minutes of the 127th and 128th Meetings)..... 449
- Extension Work 450
- Book Reviews 452
- County Societies**
- Alameda 453
- Imperial 453
- Merced 453
- Placer 453
- San Bernardino 454
- San Diego 454
- San Francisco 454
- San Joaquin 454
- Santa Barbara 455
- Santa Clara 455
- Sonoma 455
- Tulare 456
- Things Every Physician Should Read
- Openings in U. S. Public Health Service 456
- California Association of Physiotherapists 456
- New Members 456
- Deaths 456

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President H. G. BRAINERD, Los Angeles, President-Elect
 ALFRED C. REED, San Francisco, First Vice-Pres. JOSEPH CATTON, San Francisco, Second Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Editor and Secretary
 CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

- FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties.
PAUL M. CARRINGTON, San Diego (Term expires 1924)
- SECOND DISTRICT—Los Angeles, Santa Barbara, Ventura and Kern Counties.
WM. H. KIGER, Los Angeles (Term expires 1922)
- THIRD DISTRICT — San Luis Obispo and Monterey Counties.
T. C. EDWARDS, Salinas (Term expires 1924)
- FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties.
FRED R. DE LAPPE, Modesto (Term expires 1924)
- FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties.
FRANK H. PATERSON, San Jose (Term expires 1923)
- SIXTH DISTRICT—San Francisco County.
C. G. KENYON, San Francisco, Chairman. (Term expires 1922)
- SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties.
EDW. N. EWER, Oakland (Term expires 1923)
- EIGHTH DISTRICT—Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties.
JAMES H. PARKINSON, Sacramento (Term expires 1922)
- NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties.
JAMES H. MCLEOD, Santa Rosa (Term expires 1923)

COUNCILORS AT LARGE:

O. D. Hamlin, Oakland (term expires 1922); René Bine, San Francisco (term expires 1923); Geo. H. Kress, Los Angeles (term expires 1923); Wm. T. McArthur, Los Angeles (term expires 1923); Saxton T. Pope, San Francisco (term expires 1924); C. Van Swalenburg, Riverside (term expires 1923).

REID BROS.



Impermephane
TRADE MARK REG. U. S. PAT. OFFICE
IM-PER-ME-PHANE

—back again

A TRANSPARENT SURGICAL DRESSING PROTECTIVE, SUPERIOR TO OILED SILK OR MUSLIN, GUTTA-PERCHA OR ANY OTHER MATERIAL

IMPERMEPHANE may be boiled or sterilized in any solution without injury—is strong, flexible and transparent. It does not deteriorate with age—keeps in any climate and will not crack or stick to dressings.

IMPERMEPHANE is invaluable in treating burns and skin infections where it is inadvisable to remove the dressings daily to observe healing progress.

Medications such as salves, carbolic or picric acid, ether, mustard and hot applications, are retained in position and their effectiveness assured when *Impermephane* is used as a covering.

Genuine *Impermephane* was not obtainable during the war, but we can now supply it as follows:

Box containing 10 sq. yds. \$4.50 each
Box containing 5 sq. yds. 2.50 each
Box containing 1 sq. yd. .05 each

Call, or order by mail, and get the genuine *Impermephane*—there is no substitute and it can be obtained from no other source.

REID BROS., Inc.

91 to 99 Drumm Street, San Francisco, Cal.

Now building a new factory, the largest and finest of its kind in the West,
at Irvington, Alameda County, California

EDWARD I. SUGARMAN

MARION H. LIPPMAN

LIPPMAN & SUGARMAN LABORATORY

ESTABLISHED 1914

WASSERMANN (AND NOGUCHI CONTROL) TESTS DAILY

REPORTS ISSUED TO PHYSICIANS ONLY

ROOM 911 BUTLER BUILDING
135 STOCKTON STREET
SAN FRANCISCO

TELEPHONES: GARFIELD 541
SUTTER 4553
(EMERGENCY) WEST 1400

C. H. HITTENBERGER CO.

Manufacturers and fitters of

**Surgical and Orthopedic
Appliances**

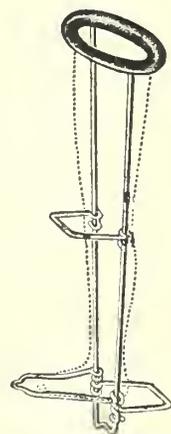
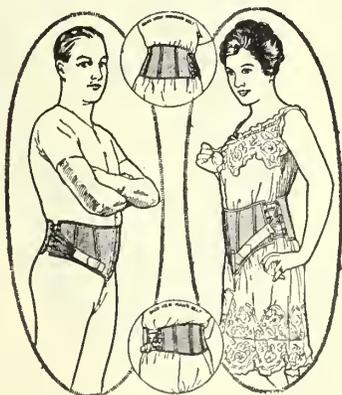
Artificial Limbs

Surgical Corsets

Trusses, Etc.

Post-Operative Abdominal Binders and
Supports a Specialty

Lady Attendants



Fitting Rooms
1103 MARKET STREET

Factory
12 SEVENTH STREET

Phone Market 4244

San Francisco

TOXIN-ANTITOXIN

Lederle

CONFERS

PROLONGED IMMUNITY

AGAINST

DIPHTHERIA

ALL SUSCEPTIBLE CHILDREN FROM SIX MONTHS TO SIX YEARS SHOULD BE IMMUNIZED.

SUSCEPTIBILITY CAN READILY BE DETERMINED BY THE SCHICK TEST.

Full particulars upon request

LEDERLE ANTITOXIN LABORATORIES

511 FIFTH AVENUE
CORNER OF FORTY-THIRD STREET
NEW YORK CITY

PACIFIC COAST BRANCH
163 JESSIE STREET
SAN FRANCISCO, CALIFORNIA
TELEPHONE KY. 4598

St. Gothard Convalescent Home



St. Helena, Napa County, California Telephone St. Helena 1

For particulars address C. & L. Broniscoe, 925 Grove St., San Francisco

Phone Park 5193



HOSPITAL FOR CHILDREN AND TRAINING SCHOOL FOR NURSES

A general hospital of 275 beds for women and children. Thirty beds for maternity patients in a separate building, newly equipped.

Complete services of all kinds for women and children. Infant feeding a specialty.

House staff consists of three resident physicians and eight internes.

Accredited by the Council on Medical Education and Hospitals of the American Medical Association.

Institutional member of League for the Conservation of Public Health.

The oldest school of nursing in the West.

Director of Hospital
Dr. Wm. E. Musgrave
Medical Superintendent
Dr. Edna L. Barney
Assistant Superintendent
Mrs. Hulda N. Fleming
Superintendent of Nurses
Miss Ada Boye, R.N.
3700 California Street
San Francisco



MIXED VACCINES

The Vital Statistics of the Army, as well as agglutinin and bactericidal experiments, have established:

- FIRST—That vaccination against Typhoid only does not protect against Paratyphoid "A" or "B," but that it does protect against Typhoid.
- SECOND—That vaccination against Paratyphoid "A" protects against that infection but does not protect against Typhoid or Paratyphoid "B."
- THIRD—That vaccination against Paratyphoid "B" likewise protects against that infection only.
- FOURTH—That vaccination against all three infections does definitely protect against all three.
- FIFTH—That the protection conferred and the results of agglutination tests, are identically the same whether the individual is immunized against each organism separately or whether the vaccines are given in combination.
- SIXTH—That the "Non-Specific-Reaction" of Typhoid vaccination is of no avail as a protection against the closely allied Paratyphoid infections.

Of course it is not always safe to reason from analogy. On the other hand is it not well to preserve the open mind and consider if there may not be merit in combinations of vaccines other than Typhoid-Paratyphoid, even though the immunizing response is less distinct and of shorter duration.

THE CUTTER LABORATORY

(Operating under U. S. License)

Berkeley

California

Producers of Vaccines true to labeled content and count
Write for Therapeutic Index Price List

"SPRING ACRES"

2747 Fruitvale Avenue
Oakland . . . California

EXCLUSIVELY FOR THE CARE
OF TUBERCULAR PATIENTS

Privacy, individual service, homelike comforts
and amusements are featured for all patients.
Patients select their own physicians

Rates \$25.00 per week and up

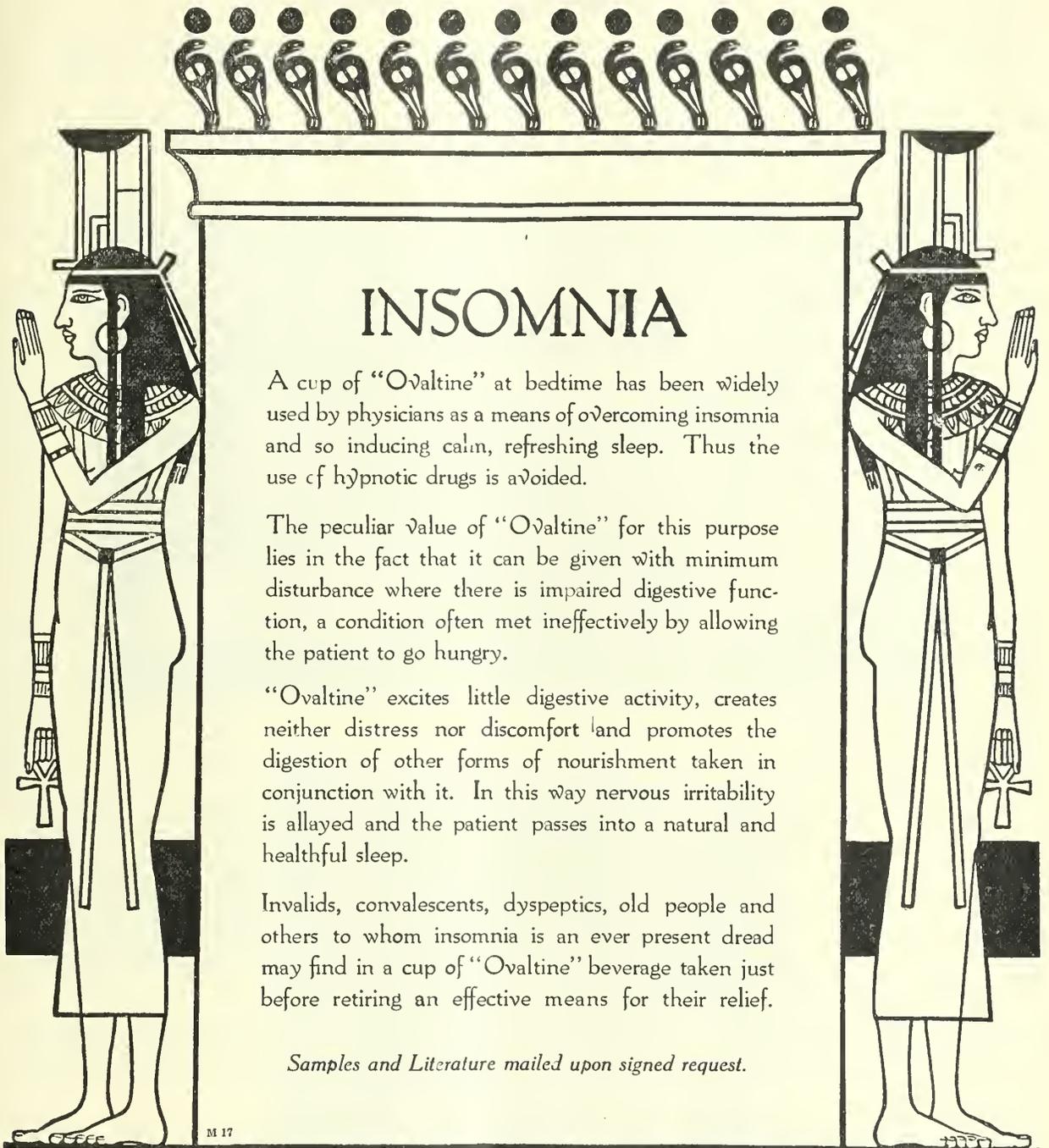
Mrs. L. E. Everson :: :: :: :: :: Fruitvale 42



For Sale—Convalescent Sanitarium and Health Resort

The most ideal property and location in the State. Located on Napa County concrete highway, between St. Helena and Calistoga, no grades, 3 hours from San Francisco.

Consists of 25 acres heavily timbered, wonderful mineral springs, improvements worth \$50,000, large hotel, six cottages furnished complete, electric lights, large automobile shed, concrete swimming pool, improvements 3 years old. \$15,000 cash will handle it. For full particulars address J. H. Westcott, owner, Calistoga, Napa County.



INSOMNIA

A cup of "Ovaltine" at bedtime has been widely used by physicians as a means of overcoming insomnia and so inducing calm, refreshing sleep. Thus the use of hypnotic drugs is avoided.

The peculiar value of "Ovaltine" for this purpose lies in the fact that it can be given with minimum disturbance where there is impaired digestive function, a condition often met ineffectively by allowing the patient to go hungry.

"Ovaltine" excites little digestive activity, creates neither distress nor discomfort and promotes the digestion of other forms of nourishment taken in conjunction with it. In this way nervous irritability is allayed and the patient passes into a natural and healthful sleep.

Invalids, convalescents, dyspeptics, old people and others to whom insomnia is an ever present dread may find in a cup of "Ovaltine" beverage taken just before retiring an effective means for their relief.

Samples and Literature mailed upon signed request.

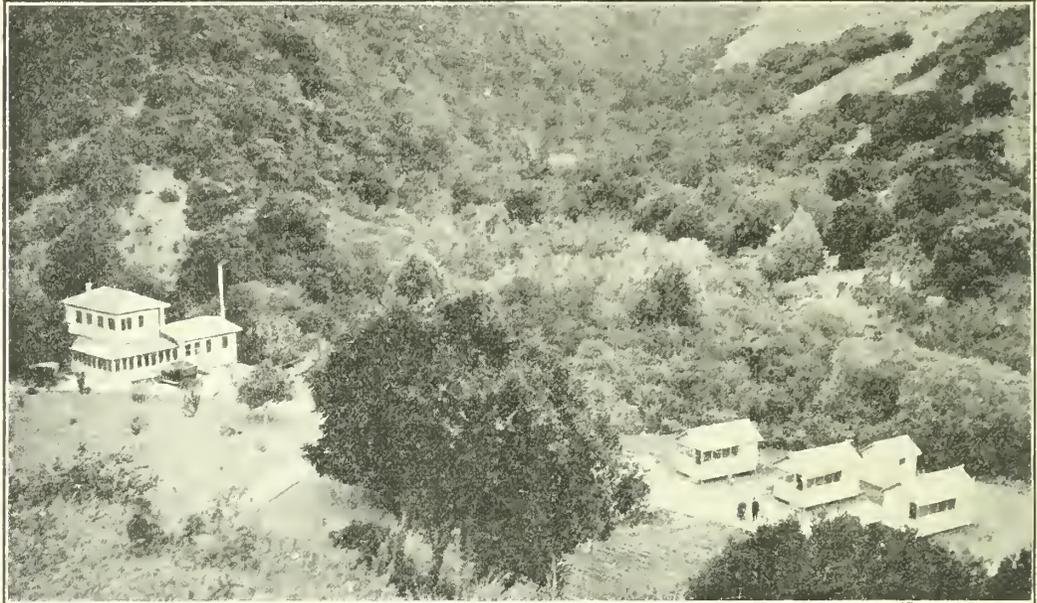
OVALTINE

THE WANDER COMPANY, 37 S. Wabash Ave., Chicago
Works: Villa Park, Ill.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS

□
*Entire Lack
of Hospital
Atmosphere*



□
*Rates
Reasonable*
□
Climate Ideal

SOME OF THE COTTAGES

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS

DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
FLOOD BUILDING - - - SAN FRANCISCO

Telephone Douglas 4486

BROEMMEL



QUALITY

The Most Ethical
Prescription Pharmacy
in
San Francisco

Accuracy, Purity, Quality
and Immediate Service

Broemmel's Prescription Pharmacy

California and Steiner Sts. West 558-559
and Manufacturing Chemists
San Francisco, California

AMERICAN AMBULANCE

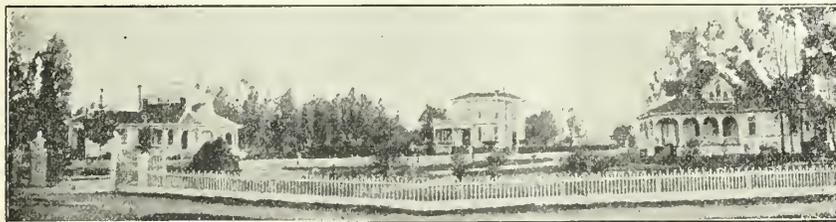
AND NURSES' BUREAU

PHONE MARKET 21

Military Blue Ambulances

City and Country Trips on Application
Rates Reasonable

146 CENTRAL AVE., SAN FRANCISCO



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM



HYDROPATHIC
DEPARTMENT

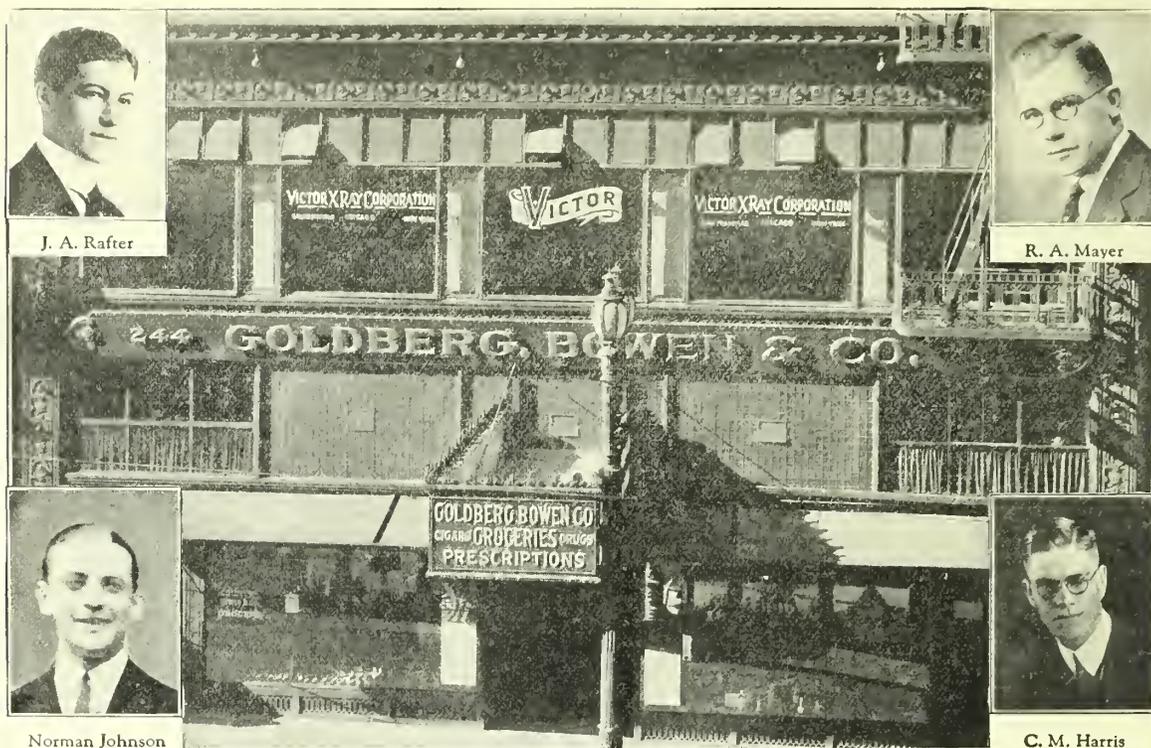
THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
Livermore, Calif.



Direct Factory Branch for Pacific Coast Opened in San Francisco

Victor Service Facilities in Northern California:

San Francisco:

Mr. R. A. Mayer, who has been associated with the Victor organization for the past five years.

San Joaquin Valley District:

Mr. Norman Johnson, with headquarters in Fresno. For seven years at the Victor plant in Chicago.

Sacramento Valley District:

Mr. C. M. Harris, who was for several years in X-Ray Laboratory of Mare Island Navy Yard; also in X-Ray Department in the Service and since leaving the Service in charge of the X-Ray Department of one of the largest photo supply houses on the Pacific Coast.

Bay District:

Mr. J. A. Rafter, with headquarters in San Francisco. Mr. Rafter was for several years connected with our Kansas City organization, and later in charge of the X-Ray Department of one of the largest surgical houses in the West.

San Francisco office personnel: T. Byrne, Mgr., M. M. Wilson and L. W. Norell, in charge of Service Department

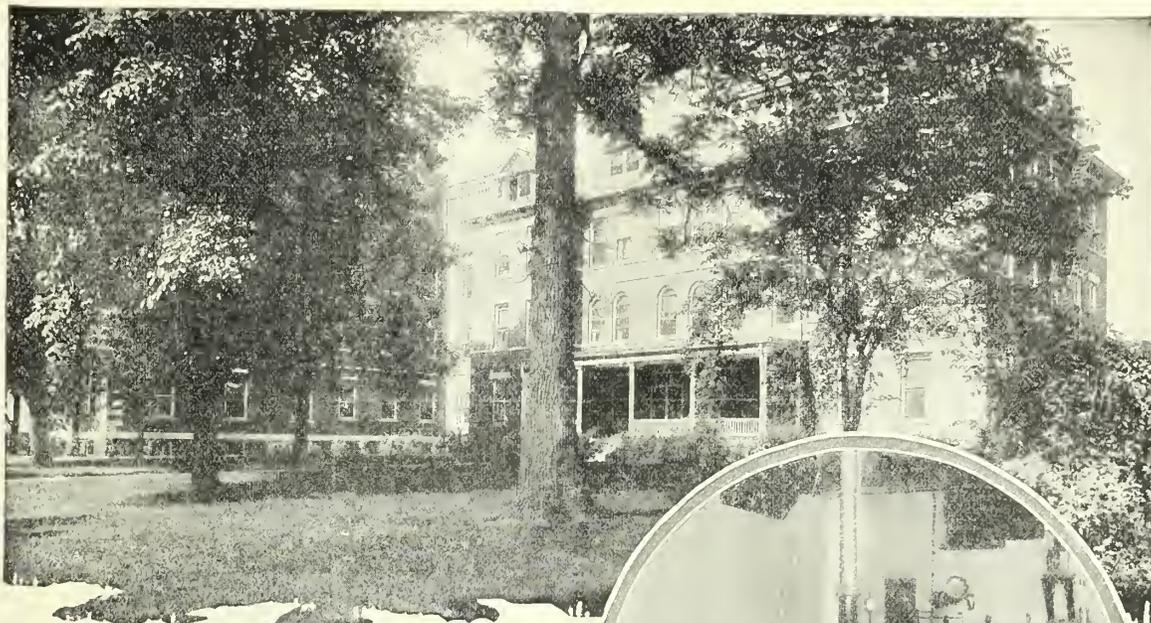
With the above sales and service facilities for Northern California and with the Los Angeles organization taking care of the southern part of state, Victor users and prospective users are assured of Victor Service, promptly and intelligently rendered.

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago

SAN FRANCISCO, 254 Sutter St.
Phone Douglass 6982

LOS ANGELES, 930 Hill St.
Phone 64119





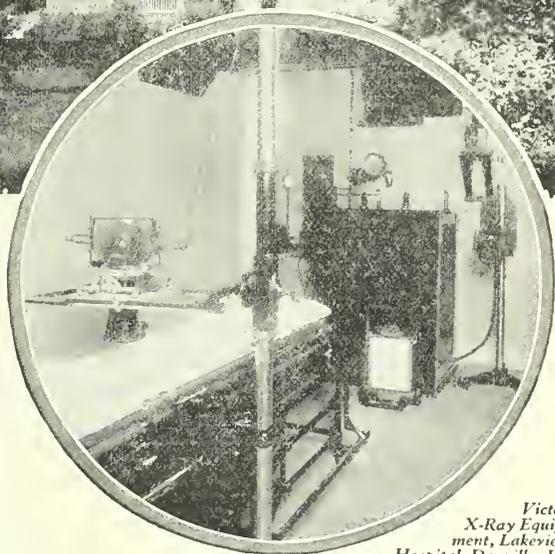
The X-Ray Machine Must Always Be In Order

DRUGS and serums are made under scientifically controlled conditions so that the physician can rely upon them. The responsibility of the manufacturer to the medical profession ends after he has taken every technical precaution to insure the maintenance of certain standards of purity.

Far greater is the responsibility that the Victor X-Ray Corporation assumes. Every piece of Victor apparatus is rigorously tested from time to time in the course of manufacture—tested as carefully as any serum or antitoxin.

But the Victor X-Ray Corporation assumes a further responsibility. Through its Service Stations in the principal cities it engages itself, when called upon, to maintain its apparatus in perfect condition.

Furthermore, the Victor X-Ray Corporation places



*Victor
X-Ray Equip-
ment, Lakeview
Hospital, Danville, Ill.*

its facilities, its accumulated electrical and physical knowledge, its wide experience in manufacturing and installing X-Ray apparatus at the disposal of physicians and surgeons. Through its Service Stations it gives the practitioner all the technical guidance that can be legitimately extended.

Victor Service also includes the publication of a periodical called "Service Suggestions" in which X-Ray progress is recorded. Although published primarily for the benefit of Victor clients, it will be sent to physicians who wish to learn of the advances that are made from time to time in radiography. There is no charge for "Service Suggestions."

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago

Territorial Sales and Service Stations:

SAN FRANCISCO—VICTOR X-RAY CORPORATION, 254 SUTTER ST.
LOS ANGELES—VICTOR ELECTRIC LOS ANGELES, 930 HILL ST.



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY PRIVATE CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of *Hydrotherapy*,—coupled where indicated with *Nauheim*,—*Radio Active Clay*,—*Calcic Carbonate*,—*Magnesia Carbonate* and *Sulphate Baths*,—*Radium Emanatorium*. Modern modifications of *Zander Apparatus*, *Massage* and *Manipulations*. *Electro-Therapy*, *Thermo-Penetration*, *Actino-Therapy*, *Proctoclysis*, *Corrective Gymnastics* and the application of tabulated *Physical Efficiency Tests*

We are well equipped with modern mechanical devices of scientifically proven efficiency for the *Relief of Suffering*. We maintain a most comprehensive *Service Organization* of *Trained Attendants* rendering *Personalized Attention* to every patient.

Our Institute is specially equipped for the relief of persons suffering from *Chronic Disorders*. We are prepared to take care of *Post-Operative Convalescents* in need of *Reconstruction* and "*Conditioning*" in general, before resuming their commercial, professional or social duties.

**SERVICE RENDERED ONLY TO PATIENTS REFERRED TO US
BY THE MEDICAL PROFESSION. NO OTHER CASES ACCEPTED**

Doctor:—You may have among your patients today, one or several stubborn cases who have resisted the treatment that you have thus far employed. Quite a number of other medical men of reputation have brought similar conditions to a successful conclusion with modern *Physio-Therapy*. Our twenty-three years of experience in this work is positive assurance to you of the highest grade of service procurable. Your inquiry for specific information will be appreciated.

Why not investigate thoroughly about us today?

N. A. Karpaty, B. Sc.,
Technical Superintendent.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

G. H. Richardson, M. D.,
Medical Director.

Nathalie Selling, M. D.,
Staff Associate.

Care—Courtesy—Privacy—Comfort. Best references. Inspection invited.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

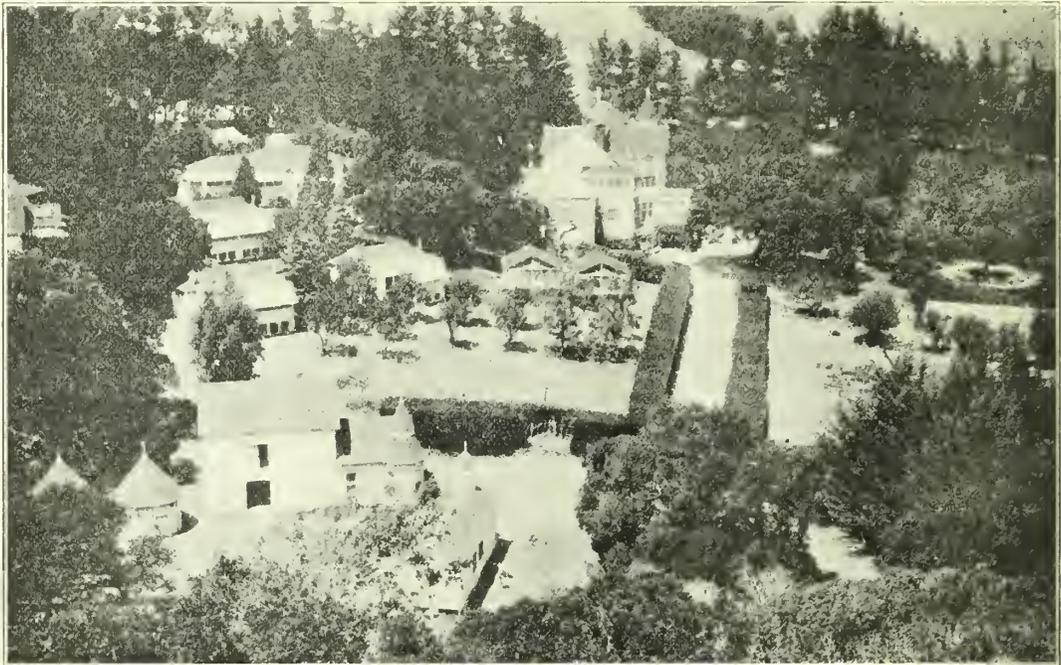
ROBERT A. PEERS, Medical Director

Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —
SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD
 Medical Director
 350 Post St., San Francisco

DR. HARRY WARREN,
 Assistant Medical Director
 Belmont

Research work and clinical observation have led to a remarkable growth in the employment of animal derivatives in medicine. It is obvious that at present we are only beginning to realize the possibilities of this line of therapy and that in the near future its development will be very rapid. We decided, therefore, to enlarge our stock of glandular products from reliable laboratories, such as the following:

HYNSON, WESTCOTT & DUNNING
ARMOUR & COMPANY
THE WILSON LABORATORIES
BURROUGHS, WELLCOME & CO.
PARK, DAVIS & CO.
CHOAY LABORATORIES, FRANCE



135 STOCKTON ST. 209 POST ST.
 PHONE PHONE
 SUTTER 5426 GARFIELD 1380
 (UP-STAIRS)
 SAN FRANCISCO.

Phone or send us your prescriptions. We are prepared to give you or your patients immediate service whether it may be for ampoules, capsules, tablets or powders.

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
 PRACTITIONERS LABORATORIES

133 GEARY STREET, SAN FRANCISCO

Telephone SUTTER 1015

The Management of an Infant's Diet

In extreme emaciation, which is a characteristic symptom of conditions commonly known as

Malnutrition, Marasmus or Atrophy

it is difficult to give fat in sufficient amounts to satisfy the nutritive needs; therefore, it is necessary to meet this emergency by substituting some other energy-giving food element. Carbohydrates in the form of maltose and dex- trins in the proportion that is found in

Mellin's Food

are especially adapted to the requirements, for such carbohydrates are readily assimilated and at once furnish heat and energy so greatly needed by these poorly nourished infants.

The method of preparing the diet and suggestions for meeting individ- ual conditions sent to physicians upon request.

Mellin's Food Company,

Boston, Mass.

Byron Hot Springs

The Home of Health
California

Announce

Reduced Fall and Winter Rates

Cottage Room with Board :: \$4.00 a Day

Hotel Room with Board :: \$5.00 a Day

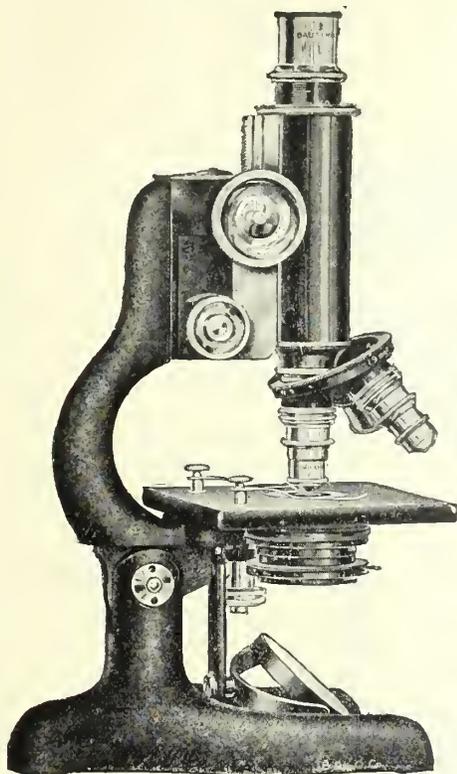
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto from San Francisco

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.

Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.

Abbe condenser in quick-screw sub-stage.

Circular dust-proof nosepiece.

Side fine adjustment—lever type, ceases to act when objective touches the slide.

Large stage is completely covered with rubber—top, bottom and edges.

Complete in polished hardwood carrying case,

\$132.00

BAUSCH & LOMB OPTICAL CO.

OF CALIFORNIA

154 SUTTER STREET

SAN FRANCISCO

CALIFORNIA



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



ALQUA
THE IMPROVED
ALKALINE WATER

ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER, with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLED AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO. OAKLAND. SACRAMENTO. LOS ANGELES. CAL. U. S. A.

At All Druggists

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

Grageroff & Papazoni

Laboratory of Clinical Pathology

Referred Work Only

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.

Phone Pico 3778

Silver-Salvarsan

(SILVER-ARSPHENAMINE-METZ)

The sodium salt of silver-diamino-dihydroxy-arsenobenzene

RELATIVE infrequency of reaction, rapid disappearance of contagious lesions, and general therapeutic effectiveness seem to indicate that Silver-Salvarsan is a drug of real value in the treatment of syphilis.

Silver-Salvarsan requires no alkalization and its ease of administration commends it to many practitioners.

More than two million injections of Silver-Salvarsan have been given in the United States and abroad.

H. AMETZ LABORATORIES, Inc
One-Twenty-Two Hudson Street, New York.

What the Label Means

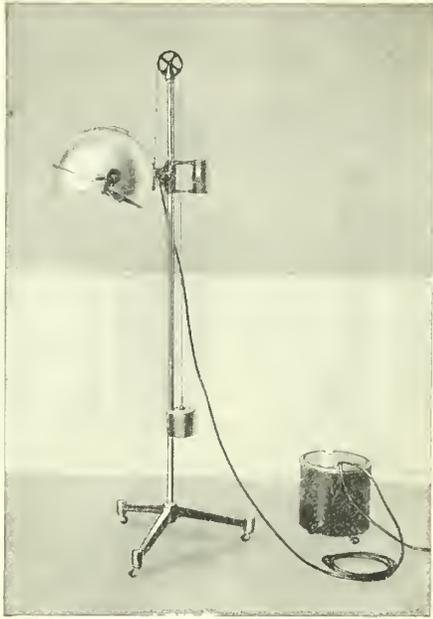
THE Diphtheria Antitoxin that bears the Parke, Davis & Company label is a highly concentrated product that contains a minimum of total solids.

It is given a three-year dating, and to make unsparing compensation for a possible shrinkage of antitoxic power we add a 40% excess to the number of units indicated by the label. Thus a package represented as one of 10,000 units actually contains 14,000 units at the time of marketing.

When you inject our Diphtheria Antitoxin you may do so with the assurance that you are employing a product which is unsurpassed in refinement, potency, concentration, absorbability and purity.

Parke, Davis & Company





THE ALPINE SUN LAMP
THE Alpine Sun Lamp illustrated above presents the most convenient source of intense Ultra-Violet Light known at the present time. Its field of indications covers Tuberculosis in most of its manifestations, superficial skin lesions, nervous diseases, post-operative infections, osteomyelitis, sluggish ulcers, and conditions resulting from faulty metabolism.

Standard



SINCE the advent of the Alpine Sun Lamp over a decade ago the high standard set for it has always been upheld.

Long researches by us and clinical tests made by users, have made this lamp an instrument of physical and mechanical precision, particularly typified by the model shown in the accompanying illustration.

And the consistent good work continues!

Send for Literature

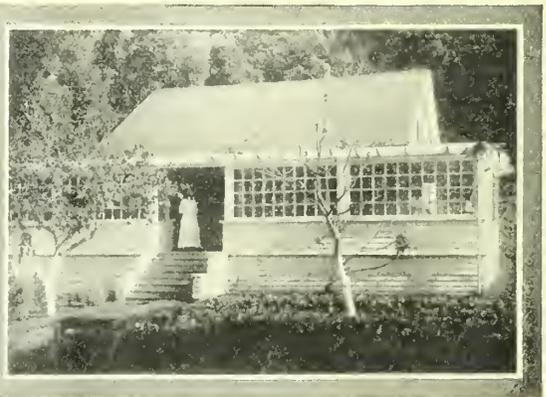
Hanovia Chemical & Mfg. Co.
San Francisco, Cal.

EXECUTIVE OFFICES
 NEWARK, N. J.

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery. Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

PAUL C. ALEXANDER, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

A BANKING SERVICE

FOR THE

MEDICAL PROFESSION

An Investment Department that can help you solve problems in buying and selling securities.

A Savings Department for your savings and surplus funds.

A Commercial Department for your checking account.

A Trust Department,—the largest in the West,—that can act as executor, trustee or custodian of your properties.

Safe Deposit Vaults for the safekeeping of your valuables.

THIS IS THE COMPLETE BANKING SERVICE THAT WE OFFER YOU.

UNION TRUST COMPANY

COMMERCIAL SAVINGS OF SAN FRANCISCO SAFE DEPOSIT TRUST
MARKET ST. AND GRANT AVE.

ASSISTANTSHIP WANTED

Recent graduate from Class "A" College, B. S., M. D. degrees, 18 months' internship, who has excellent San Francisco practice, wishes opportunity to assist surgeon, without recompense. Phone Douglas 2534.

Pacific Surgical Gown Co.

Manufacturers of



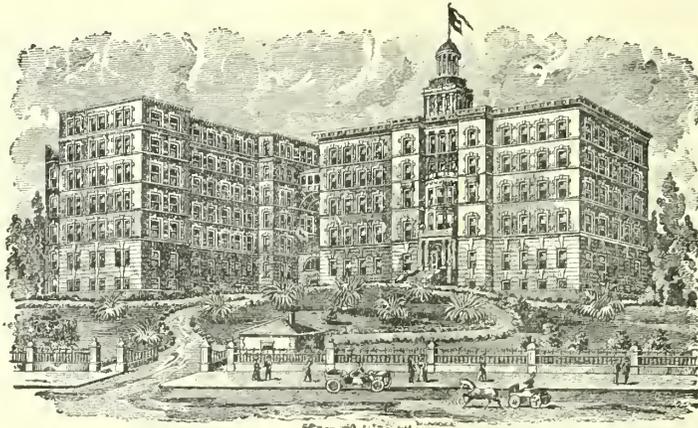
Operating Gown

Dental Gowns
Operating Gowns
Instrument Rolls
Leg Holders
Cushions for all
Operating Tables

1626 EDDY STREET
San Francisco California
West 2715

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information

Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California

Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

PORTLAND CONVALESCENT HOSPITAL
862 Marshall St.



Miss Elva Hill, Superintendent

PORTLAND SURGICAL HOSPITAL
611 Lovejoy St.



Mrs. Tom Richardson, Superintendent

Hospitals operated co-ordinately for the Clinic of
Drs. Coffey, Sears, Johnston and Payne

Downtown Offices: 11th Floor, Stevens Building
PORTLAND, OREGON



Introducing
VITA RICE MILK
To the Medical Profession

*Write for
 particulars*

The study of rice culture, and patient experiments by dairy and food experts, have revealed this truth:

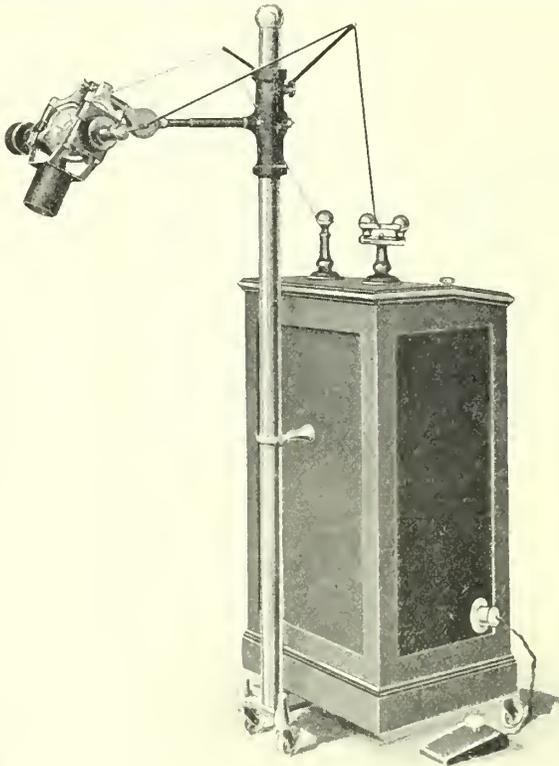
**THE RICE KERNEL ENTIRE CONTAINS THE
 PERFECT FLUID FOOD
 FOR THE MOST DELICATE DIGESTIONS**

Cream, with no refuse matter, extracted from the elements by the water roots or milk veins of the Rice plant.
 Liquified and sterilized by the newly discovered natural process, and delivered in all its first purity, is VITA RICE MILK.

VITA RICE PRODUCTS CO.

407 FLATIRON BLDG.

SAN FRANCISCO



VULCAN

AUTO X-RAY UNIT

The Ideal X-Ray Apparatus for the Physician, Hospital or Dentist, the dominant features of which are Simplicity of Operation, Standardization of results, Economy of space, Reliability and Durability.

No moving parts to wear out or get out of adjustment.

Ample power and speed for any purpose in Radiography or Fluoroscopy. Fixed control or variable potential and milliamperage, as desired.

All the quality and refinement of detail for which Vulcan products are noted.

GUARANTEED FIVE YEARS

Literature upon request

**VULCAN ELECTRIC
 COMPANY**

LOS ANGELES, CAL.

"SERVICE" IS OUR MIDDLE NAME



PHYSICIANS DIRECTORY



ROBERT M. JONES, M. D.

Announces his removal to
ROOM 814, FLOOD BLDG., SAN FRANCISCO
Phone Sutter 342
Hours: 10 to 12 and 2 to 5
Practice limited to
EYE, EAR, NOSE AND THROAT
and Refraction

Office Phone Douglas 567 Res. Phone West 3721

DR. ETHAN H. SMITH
ORTHOPAEDIC SURGERY
Hours: 2 to 4 p. m.

Mornings and Sundays by appointment
Residence Office
2617 1/2 OCTAVIA ST. 701 PHELAN BLDG.
San Francisco Grant Ave. and Market

Phone Kearny 296

DR. ALFRED C. REED
Practice Limited to

INTERNAL AND TROPICAL MEDICINE
350 POST STREET SAN FRANCISCO

Office Phone Residence Phone
Sutter 5966 Sutter 700

DR. LIONEL D. PRINCE
Practice limited to
ORTHOPEDIC SURGERY

368 FLOOD BUILDING SAN FRANCISCO
Hours: 2 to 4

Office Phone Main 2068

DR. WILLIAM H. KIGER
DISEASES OF RECTUM AND COLON
Hours by appointment

Suite 711-712 Pacific Mutual Bldg.
523 WEST SIXTH ST. LOS ANGELES

Residence Telephone Bayview 962

DR. JOHN ZIEG
ROOM 867 FLOOD BUILDING
Hours: 2 to 4

Telephone Kearny 788
870 MARKET STREET, SAN FRANCISCO, CAL.

Telephones—Office, Kearny 2345
Emergency, West 1400
Hours: 2:30 to 4:30 and by appointment

DR. ARTHUR COLLIS GIBSON
Practice Limited to Diseases of the
EAR, NOSE AND THROAT

Equipped for Oesophagascopy and Bronchoscopy
OFFICE, 516 SUTTER ST., SAN FRANCISCO

DR. LIONEL A. B. STREET
(Late of Shanghai, China)
Announces the opening of his
Consulting Rooms

Suite 1023 Pacific Mutual Bldg.
523 W. SIXTH ST. LOS ANGELES, CAL.
Hours: 2 to 4 P. M.
Residence 621 South Virgil Avenue
Telephone Wllshire 6109
Office Phone 15626

August first 1921

Phone Oakland 5809

DR. N. AUSTIN CARY

Practice Limited to
ORTHOPEDIC SURGERY
304 Federal Realty Bldg. OAKLAND, CAL.

Office Phone
Doug. 4486

Residence Phone
Fillmore 5537

DR. RALPH B. SCHEIER
DISEASES OF THE LUNGS
Hours by Appointment

FLOOD BUILDING SAN FRANCISCO

WALTER SCOTT FRANKLIN, M. D.

FREDERICK C. CORDES, M. D.

WARREN D. HORNER, M. D.

OPHTHALMOLOGISTS

824 BUTLER BLDG., SAN FRANCISCO

J. H. McKELLAR, M. D.

H. L. THOMPSON, M. D.

Ophthalmology, including Refraction
618 Title Insurance Bldg., Los Angeles

503 Long Beach Bank Bldg., Long Beach

Phone 667-72
If no answer, call
607-89 or Main 7675

Appointment
Only

DR. DON P. FLAGG

MEDICAL PSYCHOLOGIST

Neurology and Psychiatry, Nervous Children
406 AUDITORIUM BLDG., LOS ANGELES, CAL.
5th and Olive Sts.

Wishes to announce the opening of a laboratory
for vocational guidance, fitness for occupation
determined by psychological, nervous and mental
tests.

DR. LOUIS CLIVE JACOBS

Practice Limited to

UROLOGY

456-462 Flood Building

San Francisco



PHYSICIANS DIRECTORY



DR. HARRY SPIRO

Practice Limited to

CARDIO-VASCULAR DISEASES

300 COLESON BLDG. 212 STOCKTON ST.
San Francisco

Phone Garfield 22

Phone 587-J

DR. FRANCIS B. SHELDON

DIAGNOSTIC AND THERAPEUTIC
X-RAY

Hours: 9 to 12 and 2 to 5

Sunday by appointment only

1014-16 MATTEI BLDG. FRESNO, CAL.

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.) State Hospital, and previously Medical Superintendent Nebraska State Hospital for the Insane, Ingleside, Hastings, Nebraska. Practice limited to

NERVOUS AND MENTAL DISEASES

Sanitarium Accommodations

Offices, 620 Brockman Bldg., Los Angeles, Cal.

DR. C. RENZ

Announces that he will resume his practice on

October 1, 1921, at

1059 Flood Bldg., San Francisco

Practice limited to psychiatry and the treatment of psychoneuroses. Hours by appointment.

Phone Sutter 186

For placement of cards of members in these columns
phone Douglas 62 or address Editor of the Journal

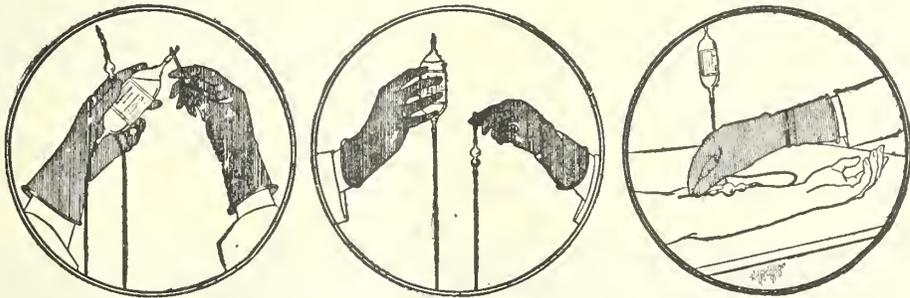
Don't forget the State Meeting
in Yosemite, May 15-18, 1922

Program closes January 27. If interested write to
SECRETARY OF APPROPRIATE SECTION

THE complicated technic incident to the preparation of solutions of Arsphenamine with the attendant danger of improper alkalization as well as the rapidity with which the Arsphenamine oxidizes and forms toxic compounds during the preparation of the solution, make it apparent that the widespread use of this product is dependent upon the development of a safe and ready-to-use solution. The Squibb Laboratories therefore take pleasure in announcing that they have ready for distribution

Solution Arsphenamine Squibb

Prepared according to the process devised by Dr. Otto Lowy; licensed by the U. S. Public Health Service and approved by the Council on Pharmacy and Chemistry of the American Medical Association.



READY FOR IMMEDIATE USE.

Solution Arsphenamine Squibb offers the advantages of accuracy in preparation, perfect alkalization, and safety in use.

It avoids the danger of oxidation with the consequent formation of toxic oxidation products, and it eliminates the necessity for costly apparatus and the loss of time spent in preparing solutions.

Solution Arsphenamine Squibb is a scientifically prepared solution of Arsphenamine. It is in no sense a substitute for Arsphenamine.

Solution Arsphenamine Squibb is marketed in 80 Cc. and 120 Cc. ampuls with all necessary attachments, ready for administration.

E. R. SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

Colfax School for the Tuberculous

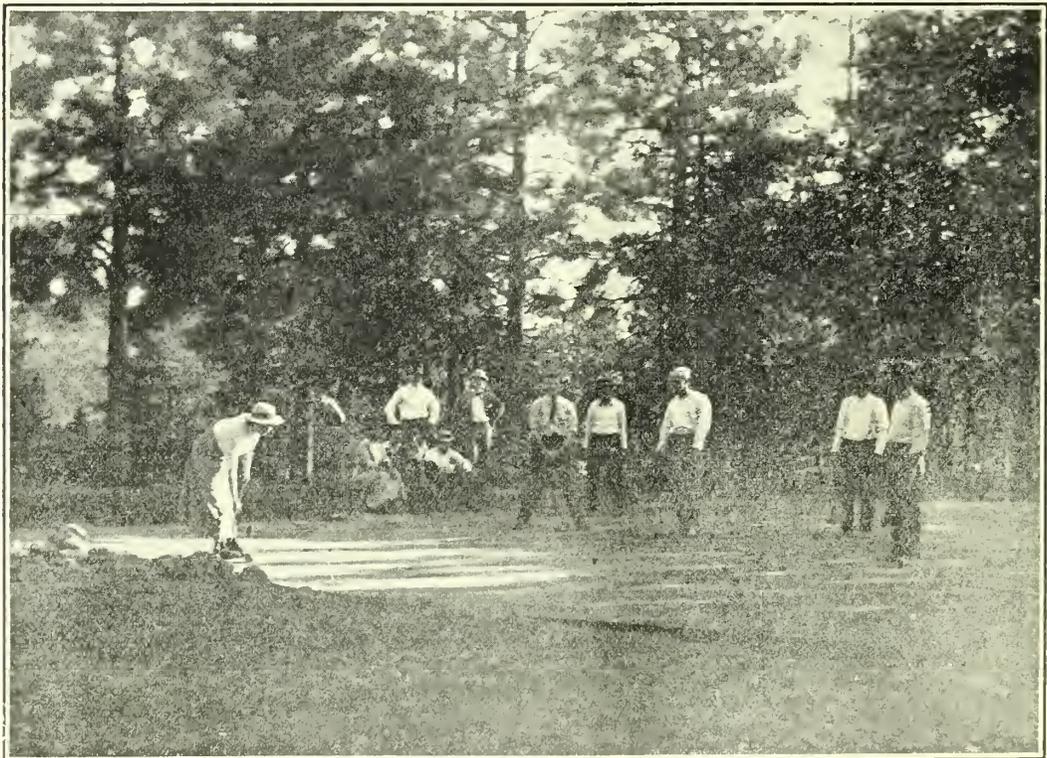
Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

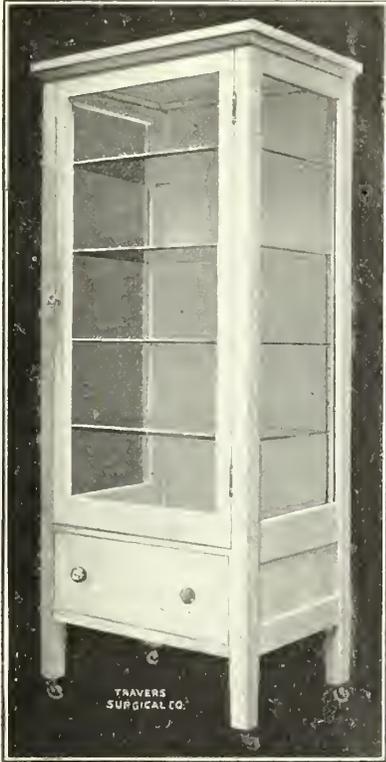
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director
Colfax, California





Size—60 in. high, 25 in. wide, 18 in. deep

Attention

This Beautiful Instrument Cabinet, finished in White Enamel, has four Polished Plate Glass Shelves and large drawer at bottom for dressings and supplies. Cabinet has glass door and sides.

Price \$55.00

Travers Surgical Co.

Physician and Hospital Supplies

Everything Surgical

Phone Sutter 4651

372 SUTTER ST.

SAN FRANCISCO

Strength and Pliability are Found in

Armour's Iodized Sheep Gut Ligatures

which are made from lamb's gut selected in our abattoirs especially for surgical purposes.

The **Armour Iodized Ligatures** possess full tensile strength and their pliability prevents breakage at the knot. They are iodized to the core and are absolutely sterile. Regular lengths, sizes 00 to number 4 at \$2.50 per dozen.

We also offer **Plain and Chromic Ligatures**, sizes 000 to number 4 regular lengths \$2.50 per dozen, emergency lengths, \$1.50 per dozen (nothing but the smooth side of the intestine is used in the manufacture of the Armour ligatures).



Suprarenalin Solution, 1:1000 is stable, uniform and free from preservatives.

Pituitary Liquid is physiologically standardized and is ready for hypodermatic use— $\frac{1}{2}$ c. c. ampoules for obstetrical and 1 c. c. ampoules for surgical use.

Literature upon the **ARMOUR LABORATORY PRODUCTS** for the medical profession only.

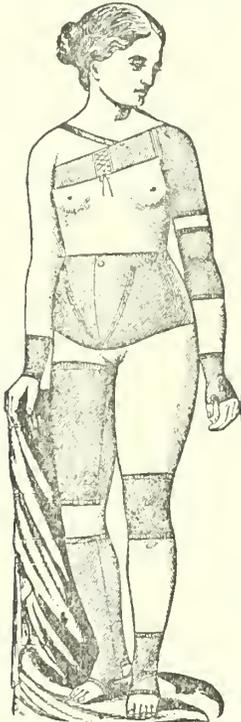
ARMOUR AND COMPANY

CHICAGO

Headquarters for the endocrines and other organotherapeutic products.

ELASTIC STOCKINGS

FOR VARICOSE VEINS



We specialize in the making and fitting of Elastic Hosiery, Abdominal Belts and Trusses. We are the oldest truss and elastic house in the West. Over 40 years' successful business experience.

TRUSSES, \$3.00 up
ELASTIC HOSE, \$2.50 up
Lady Attendant

**Hatteroth's Truss
and Elastic House**

232 POWELL ST.
Bet. Geary and O'Farrell
Second Floor

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 millamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

ALTA SANATORIUM

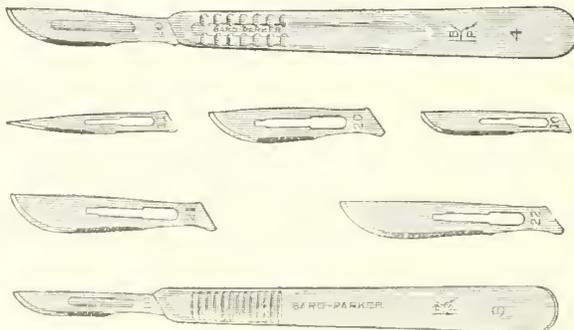
For the treatment of Pulmonary Tuberculosis

ALTA (PLACER CO.) CALIFORNIA

Invigorating climate. Beautiful scenery
Strict medical attention. Moderate terms

Apply for Particulars

WANTED—Young physician, graduate of Class A school, three and one-half years' internship, ex-service, well qualified in surgery, urology and laboratory work, desires to become associated with busy surgeon or urologist in San Francisco, Los Angeles or San Diego. Some investment if necessary. None but ethical, scientific physicians reply. Credentials, personal and professional, gladly exchanged. Address Dr. W. R. M., care of California State Journal of Medicine, 930 Butler Bldg., San Francisco.



MAIL ORDERS FILLED PROMPTLY

Bard Parker

OPERATING KNIVES
Blades \$1.50 the dozen
Handles \$1.00 each

Keniston & Root

PHYSICIANS' SUPPLIES

418 W. 6th St. } & { 1010 10th St.
Los Angeles } & { Sacramento

POTTENGER SANATORIUM

For Diseases of the Lungs and Throat

MONROVIA,
CALIFORNIA



A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

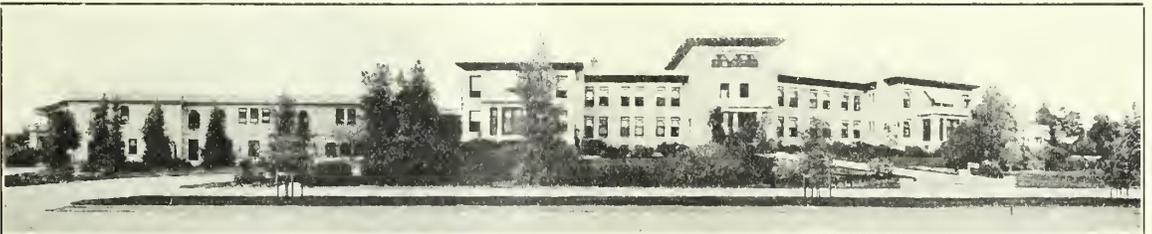
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California



SANTA BARBARA COTTAGE HOSPITAL

and

TRAINING SCHOOL FOR NURSES

LOCATION, climatic conditions and equipment make this institution of special interest to the public as a place for the care of general Medical and Surgical patients. Its attending staff is thoroughly competent.

METABOLIC DEPT. In a separate wing. A department for the scientific study and treatment of diabetes and other metabolic diseases. Under the direction of Dr. W. D. Sansum. Graduate dietitians and school of dietetics.

ROENTGEN AND RADIUM DEPT. Under the direction of Dr. H. J. Ullmann.

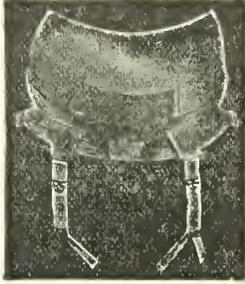
LABORATORIES. In charge of pathologist and five assistants.

RESEARCH DEPT. Cost of research work carried on here last year, \$17,000.

SCHOOL OF NURSING. Offers an excellent training for young women wishing to take up the nursing profession.

F. R. NUZUM, M. D., Medical Director. MISS F. C. JOHNSON, Superintendent.

The Storm Binder and Abdominal Supporter



ORTHOPEDIC APPLIANCES

FRANK F. WEDEKIND
2004-06 Sutter Street
San Francisco

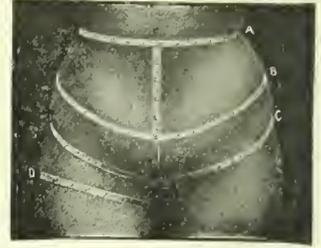


Diagram for Measuring



D. HIRSCH

H. G. ANDERTON

AUNGER ARTIFICIAL LIMB CO.

Manufacturers and Expert Fitters of

Crutches Sold or Rented
Arch-Support Fitting a Specialty

ARTIFICIAL LIMBS and ORTHOPEDIC APPLIANCES

Bonded Manufacturers for U. S. Government

Telephone Market 6055

Send for Catalogue

Dept. E, 84 Seventh St., San Francisco, Cal.

HIGH CLASS
MADE-TO-MEASURE

FOOTWEAR

Men's and Women's
In All Styles

Winkle Boot & Shoe CO.

534 GEARY STREET
SAN FRANCISCO
Telephone Franklin 3334

JOHN G. ILS & CO.

839-841 Mission Street, San Francisco
Phones: Sutter 936-937

MANUFACTURERS

Kitchen Supplies

Ranges—Gas, Oil, or Coal—Steam Tables
White Enameled Ware



THE FLORENCE N. WARD SANATORIUM

1195 BUSH ST., SAN FRANCISCO
Tel. Franklin 456
SAN FRANCISCO.

Every effort will be made to maintain the same high standard of excellence throughout the Sanatorium, particularly in the operating room service and in the obstetrical department, which is equipped for all the latest forms of anaesthesia. The Sanatorium is open to all physicians.

KING AMBULANCE

PHONE
WEST 1400
SAN FRANCISCO

In Case of Hernia

Prescribe the
Benjamin Natural Support

Each support is made complete for each individual case; the rule being to make pads soft and covering a large enough surface that opening is kept closed. Face of pad made to contour of body.

Non-elastic webbing about hips; pressure applied by flat spring over pad. Hernia is thereby retained without impairing circulation. No need for tight belt or hip-spring.

Comfortable as Well as Secure!

When you think of a support for any form of hernia—think of

M. J. BENJAMIN

Suite 214 Douglas Bldg.

Third and Spring **Los Angeles**
Telephone Main 7848

MOLONY HOSPITAL

LIMITED TO UROLOGICAL AND RECTAL CASES
1054 Sutter Street, San Francisco

The equipment of this small hospital is specially designed for the surgical and medical treatment of Kidney, Bladder and Rectal Diseases.

A special department is provided for X-Ray diagnosis, and the hospital maintains a supply of radium.

MARTIN MOLONY, M. D., F. A. C. S.
Phone Franklin 4556

HERMANN BARTH **Architect**

PHELAN BUILDING
Specializing in Hospital Work
SAN FRANCISCO
Telephone Garfield 847

Leadership is not a reward— but a job.

In every branch of business endeavor some one organization inexorably rises to leadership because its clients have confidence in its judgment and faith in its integrity.

Such leadership is not a reward but a job—a command from those it serves to make private interest do duty for all—to lead the way for all to benefit.

The greatness of an organization is measured by the number of people who believe in it.

To build a power of this kind the leader must first win the loyalty of those it serves by being loyal to them.

A business must ever push forward toward the solution of many problems. Men abide by it in the acceptance of fundamental truths and the observance of changed standards. The leader in an industry must assume responsibilities greater than the followers are asked to shoulder—and prove true to the trust. Upon the character of the leaders—upon their vision, courage, determination, wisdom and honesty, depends progress. The Medical Protective Company measures up to the requirements of the times.

The Medical Protective Co.

of
Fort Wayne, Indiana

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco
Phone Fillmore 4160

PHONE DOUGLAS 6291

Spencer Rejuveno Corsets

Surgical, Dress, Maternity, Sacro-Iliac
Abdominal Belts

305-306—212 Stockton Street
San Francisco

Doctor:---

The science of collecting has been our study for twelve years, and there are few who have devoted more time, money and energy to their profession.

If we can be of service to you, mail us your statements of accounts; or, better still, call on us.

"WE GET THE COIN"—"WE PAY"

H. G. BITTLESTON LAW AND COLLECTION AGENCY, Inc.

Citizens National Bank Building, Los Angeles

Phone 60563



KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of
nervous and mental diseases. Approved diag-
nostic and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with forced ventilation. Elegant
appointments. Bath rooms en suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to
KENILWORTH SANITARIUM
Kenilworth - - - Illinois



SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

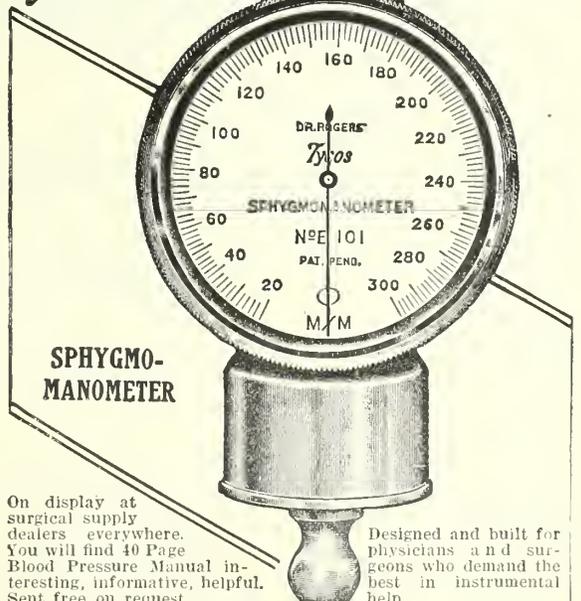
SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

Tycos

\$25.00



SPHYGMO-
MANOMETER

On display at
surgical supply
dealers everywhere.
You will find 40 Page
Blood Pressure Manual in-
teresting, informative, helpful.
Sent free on request.

Designed and built for
physicians and sur-
geons who demand the
best in instrumental
help.

Taylor Instrument Companies

ROCHESTER, N. Y.

Fever Thermometers, Urinary Glassware, Office Type
Sphygmomanometers



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
R. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

**HOSPITAL-BEDS
MATTRESSES AND
BED-APPLIANCES
AT FACTORY PRICES**

We also do mattress renovating

Ewd. L. McRoskey TELEPHONE
PARK 4533
THE RETAIL MATTRESS FACTORY

1506 MARKET ST., at VAN NESS AVE.

Alfred I. Coffey
ARCHITECT

312-314 Humboldt Bank Bldg.
San Francisco, Cal.

Hospital Construction
a Specialty



Architect Saint Francis Hospital,
San Francisco, Cal.



**Dickson-Bull
Artificial Limbs**

Known Everywhere
Surgical Belts and
Orthopedic Appliances
For Every Requirement
Surgeons Assured
Co-operative Service

2216 Telegraph Avenue
Near Twenty-second
FACTORY AND OFFICE
Oakland, Cal.
Tel. Oakland 8438



A ROUTINE TEST

RENAL FUNCTIONAL
DETERMINATION WITH

Phenolsulphonephthalein,
H. W. & D.

The sterile mono-sodium salt solu-
tion in ampules, one c. c. each

The Dunning Colorimeter

An apparatus for the colorimetric
estimation of the Phenolsulphone-
phthalein excreted

Write for description and technic

Hynson, Westcott & Dunning
BALTIMORE

G. E. LAMONT

PHONE
DOUGLAS
5446

MANUFACTURER OF
**X-RAY
TUBES**

143 SECOND ST.
SAN FRANCISCO

**SCIENTIFIC
GLASSBLOWING**

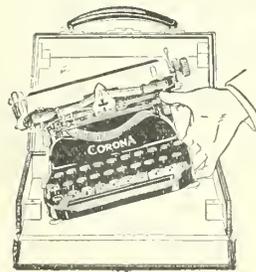


CORONA

The Personal Writing Machine
DOCTORS!

Save money and
avoid mistakes by
typing your own
bills, case records,
prescriptions, manu-
scripts and corre-
spondence.

\$50 WITH CASE



Corona Typewriter Co., Inc.

Phone
Sutter 1538

546 MARKET ST.
San Francisco

Alcoholic and Drug Addictions



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

DR. CHAS. S. FREEDMAN, Medical Director

PHONE MARKET 8048
PHONE MARKET 331

Cars Nos. 6, 7, and 17

This institution is now under the immediate supervision and control of Chas. S. Freedman, M. D. Every effort will be made to conduct same along strictly ethical lines.

Physicians are assured of the hearty co-operation of the staff in the management of their cases.

Alcoholic and Drug Addictions—Mental and Nervous Disorders

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

HELIOS

**SUN CURE
SANITARIUM
SYSTEM ROLLIER**

SAN RAFAEL, Marin County, Calif.

TELEPHONE S. R. 519

HELIO THERAPY or treatment by scientific application of Sun Rays is recognized by leading surgeons as a most efficient method of treating Bone and Joint Tuberculosis, Anemia and kindred diseases. Results, even in severe Hip and Spine cases, have been most gratifying. We will gladly co-operate in cases not yielding to ordinary methods.

For rates and particulars please apply

Charles L. Freytag, M. D.,

MEDICAL DIRECTOR
Schroth Building, San Francisco, Cal.
Telephone Garfield 148

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

**524 Gough Street
San Francisco**
Phone Market 2934

**931 Maine Street
Vallejo**
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$4.00; Canadian, \$5.00.*

Domestic rates include United States, Cuba, Mexico, Hawaii, Guam, Porto Rico, Canal Zone and Philippine Islands.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 10, 1918.

SINGLE COPIES of this calendar year, 50 cents.

REMITTANCES should be made by check, draft, registered letter, money or express order. Currency should not be sent unless the letter is registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "Medical Society, State of California."

VOLUMES begin with the first of January. Subscriptions may commence at any time.

CHANGE OF ADDRESS notice should give both the old and the new address, and state whether the change is permanent or temporary. The change notice must reach us ten days in advance of the date of the issue which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he presents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted for publication on condition that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must have their contributions typewritten—double-spaced and with ample margins—before submitting them. The expense is small to the author—the satisfaction is great to the editor and printer. We cannot promise to return unused manuscript, but try to do so in every instance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if necessary to elucidate the text, will be furnished by The Journal when satisfactory photographs or drawings are supplied by the author. Each illustration, table, etc., should bear the author's name on the back. Photographs should be clear and distinct; drawings should be made in black ink on white paper. While we cannot guarantee to return used photographs and drawings, we use our best endeavors to do so after the article is published, if the word "return" is written on the back of each.

ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to physicians. We shall be glad to know the name of the sender in every instance.

Prescribe

"Horlick's"

the Original and Genuine

Endorsed by the medical profession, who for over a third of a century have proven its reliability in the feeding of infants, nursing mothers, convalescents, and the aged.

Samples prepaid upon request

Horlick's Malted Milk Co.

Racine, Wisconsin

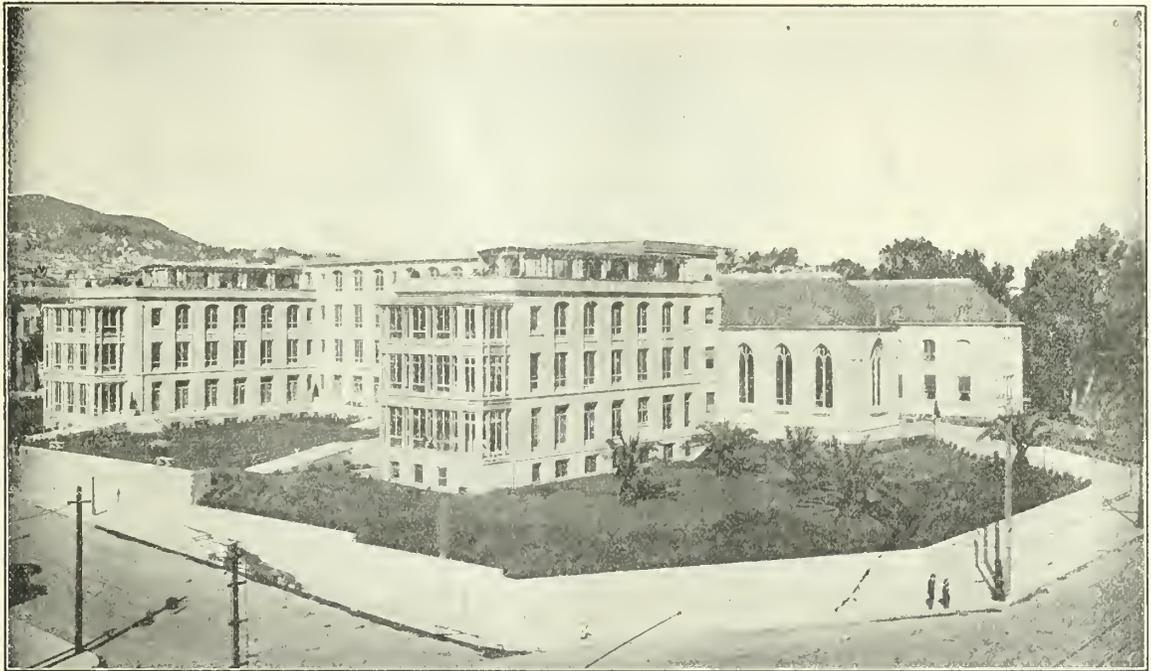
WM. H. WEEKS

Architect

75 POST
STREET

SAN
FRANCISCO

Largest Architectural Organization in
the West Specializing in Hospitals
and Public Buildings

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.**THE PUBLIC SERVICE STAFF**

General Surgery—Alanson Weeks, M. D.; A. R. Kilgore, B. S., M. D. **Orthopedic Surgery**—G. J. McChesney, A. B., M. D. **Urology**—W. P. Willard, M. D.; H. Partridge, M. D.; **Ophthalmology**—E. F. Glaser, M. D.; G. S. Wrinkle, M. D. **Otorhinolaryngology**—H. A. Fletcher, B. S., M. D.; K. Pischel, M. D. **Anesthesiology**—E. A. Leavitt, M. D.; Zilda Pettis, M. D. **General Medicine**—E. S. Kilgore, B. S., M. D.; **Neuropsychiatry**—H. W. Wright, M. D. **Dermatology**—B. Stone, M. D. **Pediatrics**—L. J. Schermerhorn, M. D. **Obstetrics and Gynecology**—W. G. Moore, M. D.; Armstrong Taylor, M. D.; W. H. Hill, M. D. **Pathology**—E. V. Knapp, M. D.; H. E. Foster, M. D. **Roentgenology**—J. H. Rehfish, A. B., M. D. **Radiology**—L. Taussig, A. B., M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent

VEN. J. A. EMERY, Secretary and Treasurer
W. H. HILL, M. D., Resident Physician

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

Sherman's polyvalent vaccines are dependable antigens

Local Agent:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY

**LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.**

"Largest producer of stock and autogenous vaccines"

PNEUMOCOCCUS ANTIGEN

PARTIALLY AUTOLYZED PNEUMOCOCCI

FOR THE TREATMENT OF PNEUMONIA

Prepared according to the method of Dr. E. C. Rosenow,
now of the Mayo Foundation, Rochester, Minnesota

A polyvalent antigen for subcutaneous use in the treatment of primary infections due to pneumococci of the various types with resulting clinical pneumonia.

The distinctly favorable impressions reported by many physicians and the constantly increasing demand for the product support the belief that in Pneumococcus Antigen is to be had a measure of able assistance in combating pneumococcus infections. Supplied only in 5 c.c. rubber-capped vials (20 billion partially autolyzed pneumococci in each c.c.).

ORDER AS V 903 THROUGH THE DRUG TRADE

ELI LILLY & COMPANY
INDIANAPOLIS, U. S. A.



Infant Feeding

Diet Materials

Colic in Breast-Fed Babies

COLIC in breast-fed infants is often due to overfeeding, or the mother's milk may be too rich in fat.

By giving the baby a small amount of CASEC solution just before a breast feeding, gratifying results are usually obtained in these cases.

MEAD'S CASEC is a very carefully prepared product of powdered Calcium Casein that is soluble in warm water.

*Literature No. 88 and enough Casec to secure definite
results will be sent gratis to physicians*

CANADIAN BRANCH, 109 DUKE STREET, TORONTO, ONTARIO, CANADA

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.

Atophan

TRADE MARK

Has finally demonstrated the fallacy of the so-called uric acid solvent therapy (lithia, etc.) and made unnecessary the employment of Colchicum with its always to be feared deleterious effects on heart and intestines.

Information, Literature and Ample Trial Quantity from



Accomplishes a definite scientifically and clinically established, physiologic stimulation of the uric acid excretion. Performed innocuously and controllable to a nicety by dosage and by urine and blood tests.

SCHERING & GLATZ, INC.
150 Maiden Lane, New York

G O U T

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

LAS ENCINAS

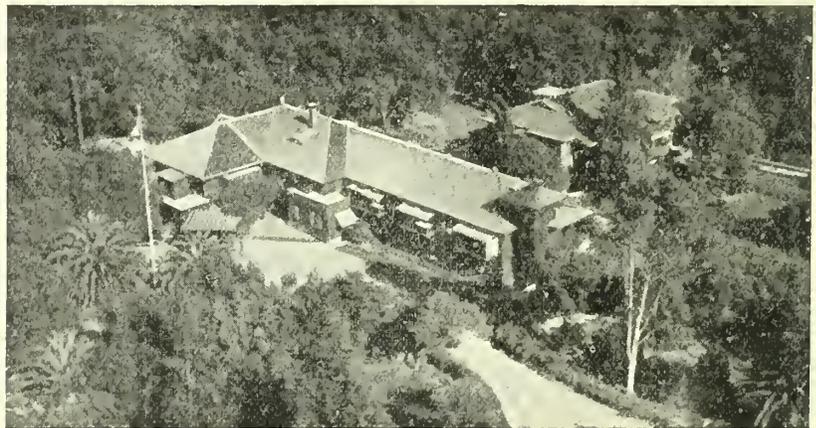
PASADENA, CALIFORNIA



AIRPLANE VIEW OF GROUNDS

A SANITARIUM
FOR THE
TREATMENT
OF ALL FORMS
OF NERVOUS
DISORDERS
AND GENERAL
DISEASES

SIXTEEN MILES
FROM
LOS ANGELES,
HEART OF THE
ORANGE BELT



MAIN BUILDING

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

Climate Ideal.
Cuisine Excellent.
Outdoor Sports and Recreation.

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.
Write for beautiful illustrated booklet.
Phone Fair Oaks 901

Dairy and Poultry Plant.
Rooms With or Without Baths.
Private Bungalows With Sleeping Porches.
CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.

STEPHEN SMITH, Medical Director.
Las Encinas, Pasadena, Calif.

Dr. King's Sanatorium

(THE BANNING SANATORIUM)

Banning (Riverside County) California

This well known institution (for the treatment of tuberculosis of the throat and chest) has recently been rebuilt and enlarged. The City of Banning (suffering from phthisiophobia) passed a "zoning" ordinance that forced abandonment of the former site of this sanatorium. A new site was purchased. An injunction was sought to prevent the use of the new site for sanatorium purposes. A temporary injunction was granted but, at the final hearing, this injunction was dissolved and the right to build and maintain the sanatorium was established. Many of the most prominent physicians in the state contributed testimony that enabled us to win the suit. During the progress of these suits the institution found it difficult to provide for patients demanding admission. Now, however, in its new quarters, it is prepared to accept all who apply. To physicians who are unfamiliar with our work we will gladly furnish references to other physicians (in almost every town in California) who have had patients or relatives in this institution. A circular describing conditions and containing rates will be mailed upon request. Address

DRS. KING and BRAMKAMP.

BANNING, CALIFORNIA.

Phone Sutter 2540

FRANKLIN W. McCORMACK
RADIOGRAPHER

Referred Cases Only

318 HOWARD BLDG. 209 POST STREET
San Francisco

Member California Association of Radiographers

Widemann's Evaporated Goat Milk



Baby
Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT
MILK COMPANY,
San Francisco, Cal.

Phone Park 7840

FRANK S. SEXTON

Representing American Institute of Medicine
400 Journals Abstracted Monthly

59 Woodland Avenue San Francisco

Lakeside 2808

P. L. ANSELL

X-RAY LABORATORY

Referred Work Only

Thomson Building, Oakland

Member California Association of Radiographers

Prescribe Council-Passed Products



MAKE use of your local druggist in prescribing **ABBOTT'S COUNCIL-PASSED PRODUCTS**

Practically all druggists in your State carry a stock for your prescribing convenience.

If your druggist cannot supply you with these items kindly give us his name.

Acriflavine, Abbott, Barbital, Abbott, Argyn, Abbott, Benzyl Benzoate, Abbott, Chlorazene, Abbott, Cinchophen, Abbott, Procaine, Abbott, Digipoten, Abbott, Pituitary Solution, Abbott, Parresine, Abbott, Dichloramine-T, Abbott

Send for complete Price List of Pharmaceuticals, Biologics, Hypodermic Tablets, Ampules and Alkaloids

The Abbott Laboratories - - - - - **4739-53 Ravenswood Avenue, Chicago**
 31 E. 17th St., New York 559 Mission St., San Francisco 225 Central St., Seattle

FRESNO BIOLOGICAL DEPOT
 412 Bank of Italy Bldg.
Fresno, California
 Phone 1434 Night 3083-W

San Joaquin Valley Distributors
 Cutter's Biologics
 Metz Products. Steripules
 Travers Surgical Instruments
 Office and Hospital Equipment

MICROSCOPES

Bought
 Sold
 Exchanged
 Repaired
W. O. HAMMER
 35 Montgomery St.
 San Francisco,
 California
 Phone Kearny 708

Rapid Disintegration

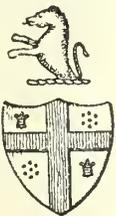
of tablets carrying such insoluble drugs as acetanilid, quinine, salol, etc., is a fleet-footed forerunner of quick systemic absorption—and for that reason and for that essential effect our tablets of such drugs when added to water crumble to a powder—logically suggestive of what happens in the patient's stomach. Critical clinical comparisons may warrant your specification of "S. & D."

SHARP & DOHME



WE CARRY A COMPLETE STOCK
 FURNITURE - SURGICAL INSTRUMENTS
 GLASSWARE - ENAMELWARE
 LABORATORY SUPPLIES
 MICROSCOPES - VIBRATORS
 HIGH FREQUENCY OUTFITS, ETC.
 DISTRIBUTORS OF
 PERFECTION BRAND - SURGEONS'
 GLOVES - CATGUT - THERMOMETERS
 Write Us For Prices

Bischoff's Surgical House
 (The House of Service)
 Oakland, California



SPECIALIZING IN
 OCULISTS' PRESCRIPTIONS
 SINCE 1909

John J. Wooster Co
 Opticians

234 Stockton St.

At Union Square



The Mark of a Complete and Careful Radium Therapeutic Service

The Prestige

which radium possesses among things material is
generously reflected to those

Physicians and Surgeons

who know how to use its therapeutic properties

Radium Is Worth Its Cost

Our complete service includes co-operation
with the physician to the end that he may as
quickly as possible acquire first hand knowl-
edge of today's practice in the

TECHNIQUE AND DOSAGE
of radium therapeutic application

Write Our Nearest Office

THE RADIUM COMPANY OF COLORADO

Principal Offices—Laboratories

Radium Building

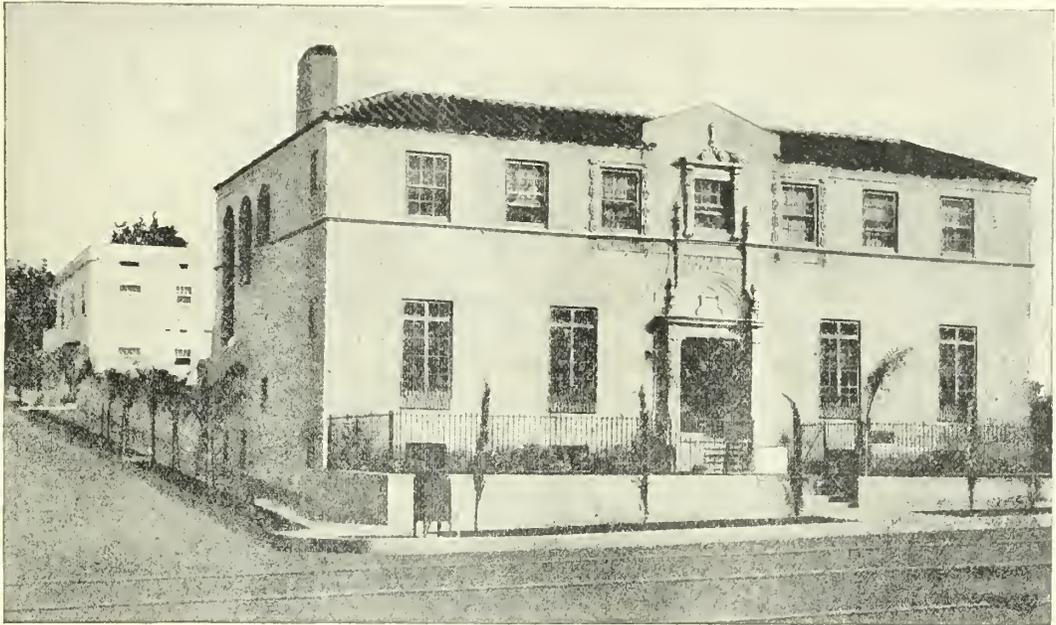
Denver, Colorado

Branch Offices

SAN FRANCISCO
582 Market St.

CHICAGO
Peoples Gas Bldg.

NEW YORK
50 Union Square



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M.D.
Medical Director

DIRECTLY and INDIRECTLY

Liquid Peptonoids

IS AN IMPORTANT NUTRITIONAL AID IN THE SICK ROOM

DIRECTLY

BECAUSE it is acceptable when all other food is rejected *and* offers immediately available nitrogen *and* calories—in sufficient amounts to be *of* real importance in emergency feeding—THEREBY saving tissue waste *and* preventing collapse.

INDIRECTLY

BECAUSE it sets the digestive pendulum in motion, kindles the appetite *and* creates food tolerance—THUS speeding the moment when more substantial nourishment may be added to the dietary.

Also DRY PEPTONIDS (Soluble). 40% Protein—51.5% Carbohydrate.

THE ARLINGTON CHEMICAL COMPANY
YONKERS, N. Y.

RADIUM

STANDARD CHEMICAL CO.

RADIUM of highest purity
in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
proven therapeutically practic-
able.

U. S. Bureau of Standards
Certificate.

Our Departments of Physics
and Medicine give instruction
in the physics and therapeutic
application of Radium.

RADIUM CHEMICAL CO.

PITTSBURGH, PA.

BOSTON
Little Building

CHICAGO
Hall Field Annex Building

SAN FRANCISCO
Flood Building

Astor Trust Bldg NEW YORK, Fifth Av. 4+2 St.

Walters Surgical Company

"Service and Dependability"

441 SUTTER STREET

Between Powell and Stockton Streets

Phone: Douglas 4017

HIGH GRADE SURGICAL INSTRUMENTS and HOSPITAL SUPPLIES

TRUSSES
ABDOMINAL SUPPORTERS
ELASTIC HOSEIERY
ORTHOPEDIC APPLIANCES
LABORATORY APPARATUS, STAINS
ELECTRO-THERAPEUTIC and X-RAY
APPARATUS

Our Illustrated Surgical Instrument Catalogue
Free Upon Request

WE STRIVE TO PLEASE BOTH
PHYSICIAN AND PATIENT

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 DEPENDABLE STORES 14
SAN FRANCISCO

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES

Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street
Between Post and Sutter Streets
SAN FRANCISCO

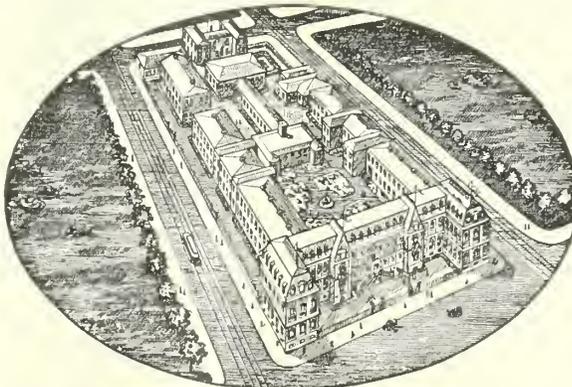
FRENCH HOSPITAL

(Operated by the French Mutual Benevolent Society)

GEARY STREET, BETWEEN FIFTH AND SIXTH AVENUES

Main Office: 110 Sutter Street, San Francisco, Calif.

GENERAL
HOSPITAL



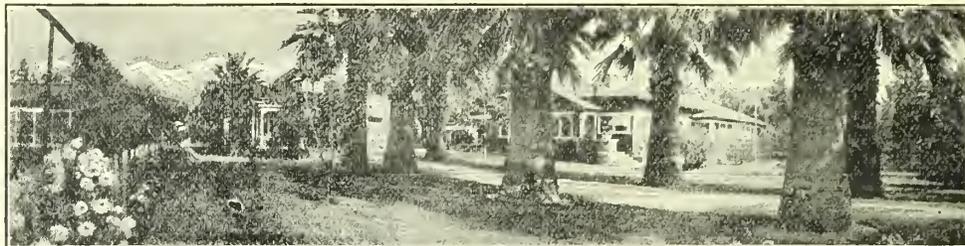
IDEAL
LOCATION

The French Hospital wishes to extend its Greetings to the MEMBERS OF THE CALIFORNIA STATE MEDICAL ASSOCIATION and the Medical Profession at large, and offers the best treatment and care to their patients.

UP-TO-DATE EQUIPMENT

HOMELIKE ATMOSPHERE

MODERATE RATES



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

Member Federal Reserve System and Associated Savings Banks of San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

JUNE 30, 1921

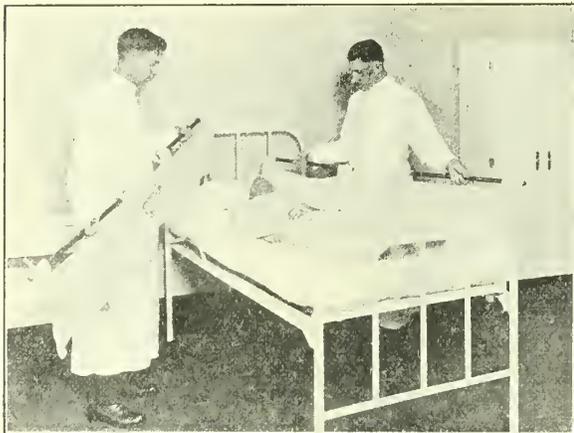
| | | | |
|-------------------------------|-----------------|-------------------------------|----------------|
| Assets | \$71,383,431.14 | Capital Actually Paid Up..... | \$1,000,000.00 |
| Deposits | 67,792,431.14 | Reserve and Contingent Funds | 2,591,000.00 |
| Employees' Pension Fund | | | \$357,157.85 |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, H. H. HERZER and H. P. MAYNARD, Asst. Cashiers; C. W. HEYER, Mgr. Mission Branch; W. C. HEYER, Mgr. Park-Presidio District Branch; O. F. PAULSEN, Mgr. Haight Street Branch.

BOARD OF DIRECTORS

John A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson, Walter A. Haas.
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys



DOES NOT DISTURB THE PATIENT

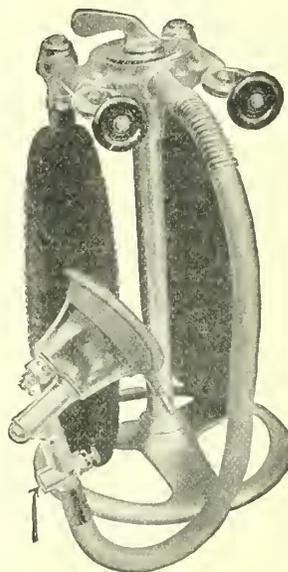
Made in two parts, simply, yet strongly connected, the Gwin-Flex stretcher can be readily removed without disturbing the patient. In many post-operative conditions the use of this stretcher insures not only greater comfort for the patient, but likewise far greater safety.

The two parts of the Gwin-Flex Stretcher are held together by a flexible steel tape which is easily removed, enabling both parts of the stretcher to be withdrawn without disturbing the patient. The stretcher is readily sterilized as the handles and tape are removable. The stretcher is extremely strong, although light in weight. Particularly convenient in turning sharp angles and passing through doorways.

May we send you full particulars, together with list of prominent hospitals now using the Gwin-Flex Stretcher?

GWIN-FLEX STRETCHER CO.

Box 954 SAN FRANCISCO, CAL.



THE BABY CLARKE is appropriately named. It is a portable gas outfit which the physician can very well take with him as part of his obstetrical equipment. There is constant and legitimate call from women patients that some of the terrors of obstetrical pain be relieved. It is the common practice now in hospitals to use gas for this purpose. THE BABY CLARKE will render the same service to the obstetrician and may be carried to the patient's home and used there or anywhere else.

The portable apparatus is automatic, and requires no attention in analgesia, also used in minor operations. Most progressive men are using Nitrous Oxid-Oxygen in their Obstetrics.

Write for Literature or Demonstration

We specialize in GAS OUTFITS, small monthly payments

DOCTORS' SUPPLY CO.

948 Market St., San Francisco
PHONE DOUGLAS 2831

DIFFERENT AND BETTER
OBSTETRICAL SUTURES

made from

Catgut Impregnated With Silver

Boilable.

Absorbed in 12 to 14 days.

Exceptional tensile strength.

Threaded on full curve No. 6 needle.

In resisting absorption "Silvergut" is superior to Chromic Tanned or other prepared Catgut.

Supplied in packages containing two tubes

From Abattoir to finished Package

"This mark

THE WILSON LABORATORIES

your guarantee"

4213 South Western Boulevard, Chicago, Ill.

Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments

Southern California

DR. I. B. LINEBARGER

1000 Lyon St., Los Angeles

Phones: Main 5790-Auto 10155

Northern California

D. BLAINE MORGAN

84 Second St., San Francisco

Phone: Kearny 1416

Stock carried in both cities

May we place you on our mailing list for "The Autacoid and Suture," our house journal devoted to Glandular Therapy?

Write for Catalog

The VERY BEST MEDICINES

When You Need Them Most

There's always a hurry-up need for medicines. "Doctor," when your call is made the benefit of your service really begins when the prescriptions are completed and the patient takes the first dose. For the finest in drugs and drug care all prescriptions should come to us. The best quality the world produces is supplied—the greatest care and the best knowledge put into the compounding. Rapidity is indulged in, but never to the sacrifice of value. All the time necessary to put up prescriptions right and to guarantee them right when they are put up. Send your prescriptions to us—telephone us and we'll send them, or tell your patients to telephone and we'll send to their residence for them.

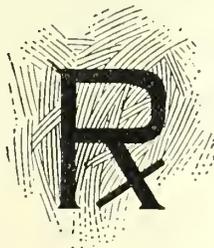
DELIVERY A SPECIALTY—REMEMBER IT

BUTLER BROTHERS' PHARMACY

PROFESSIONAL PHARMACISTS

Suite 807-9-11 Flood Bldg. Opposite Elevator

Powell and Market Streets, San Francisco, Cal.



Phone: Douglas 163

Private Exchange

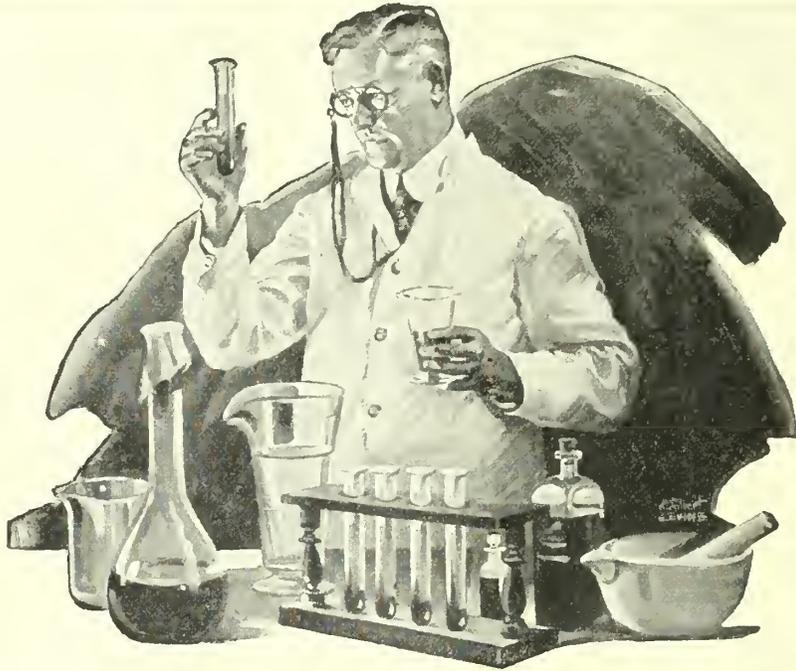
TRAINER-PARSONS OPTICAL CO.

Dispensing Opticians

186 GEARY STREET - - - SAN FRANCISCO

Near Stockton. Opp. City of Paris

Telephone Kearny 2767



Five Years of Tests

to answer Pepsodent questions

Every possible question about Pepsodent has been answered by exhaustive tests. Ask for the answers by requesting the interesting series of scientific bulletins.

To prove the mild acidity harmless, natural teeth have been immersed in Pepsodent for four years.

Natural teeth have been brushed 300,000 times to prove that the polishing agent does not harm enamel, despite its unique efficiency.

Scientific experimentation and tests in the Pepsodent laboratory and by several independent investigators to prove effectiveness extends over a period of seven years.

No soap—no chalk

Pepsodent contains no soap, no chalk, no alkali of any kind. It is mildly and properly acid as dentists now demand.

It stimulates the flow of saliva to aid Nature in protecting the teeth. It reduces the viscosity.

It increases the ptyalin—the starch diges- tant in saliva, to remove starchy deposits that adhere to tooth surface.

It increases the alkalinity of the saliva to cope with the acids which destroy enamel.

It combats the mucin plaque in an effective manner. It keeps the teeth so highly polished that plaque cannot easily adhere.

Corrects mistakes

Tooth pastes of the past were alkaline. Nature never intended that alkalies should be put in the mouth. Pepsodent corrects this. It complies with all modern dental requirements. When the facts are known it meets the approval of the dentists.

The coupon will bring a tube for experi- mental use and to try. Write for scientific literature on Pepsodent and other dental topics of interest. The Dental Depart- ment will gladly answer all questions.

Pepsodent PAT. OFF.
REG. U. S.

A Modern Dentifrice

An acid tooth paste which brings five effects desired by modern authorities

THE PEPSODENT COMPANY, 701
7449 Ludington Bldg., Chicago, Ill.

Please send me, free of charge, one regular 50c size tube of Pepsodent, with literature and formula.

Name.....

Address.....

Enclose card or letterhead

WALTER V. BREM, M. D.

A. H. ZEILER, M. D.

ROY W. HAMMACK, M. D.

CLINICAL LABORATORY

of

Drs. Brem, Zeiler and Hammack**FEE SCHEDULE****BLOOD—**

| | | | |
|--|--------|-------|-----------|
| Leucocyte counts | \$2.00 | } \$3 | } \$ 5.00 |
| Differential leucocyte counts | 2.00 | | |
| Red blood counts | 2.00 | | |
| Hemoglobin determinations | 2.00 | | |
| Blood cultures | | | 10.00 |
| Blood smears for blood parasites, as malarial plasmodia | | | 2.00 |
| Blood group tests | | | 2.00 |
| Blood Chemistry (sugar, urea nitrogen, non-protein nitrogen, creatinin, uric acid, CO ₂ combining power), single item | | | 5.00 |
| Each additional item | | | 2.00 |
| Wassermann test | | | 5.00 |
| Widal (agglutination) test | | | 2.00 |
| Coagulation and bleeding times | | | 5.00 |

URINE—

| | |
|--|------|
| Urinalysis, routine | 2.00 |
| Phenolsulphonaphthalein excretion in specimens delivered to laboratory | 3.00 |
| Microscopic examination for tubercle bacilli | 2.00 |
| Bacteriologic examination | 5.00 |

STOOLS—

| | |
|---|-------|
| Microscopic examination of stools | 5.00 |
| Examination of stools for invisible blood | 2.00 |
| Bacteriologic examination for typhoid and dysentery group | 10.00 |

STOMACH CONTENTS—

| | |
|---|------|
| Chemic and microscopic examination of stomach contents sent to the laboratory | 5.00 |
| Test meal and obtaining contents for examination | 5.00 |

SPUTUM—

| | |
|---|-------|
| Microscopic examinations for tubercle bacilli | 2.00 |
| Pneumococcus typing with mouse method | 10.00 |

EXUDATES—

| | |
|---|-------|
| Bacteriologic and microscopic examination of exudates | 5.00 |
| Diphtheria cultures | 2.00 |
| Microscopic examination of smears, as for gonococci | 2.00 |
| Cerebro-spinal fluid examinations for syphilis (Wassermann test, cell count, globulin test) | 5.00 |
| Colloidal Gold test | 5.00 |
| Lumbar punctures | 10.00 |

DARK FIELD EXAMINATION for spirochaetes

5.00

TISSUES—

| | |
|------------------------------------|-------|
| Tissue examination | 10.00 |
| Frozen sections at operation | 15.00 |

VACCINES—BACTERIAL

5.00 to 15.00

WATER—

| | |
|---------------------------------|-------|
| Bacteriologic examination | 10.00 |
|---------------------------------|-------|

MILK—

| | |
|--------------------------|------|
| Chemic examination | 5.00 |
| Bacterial count | 5.00 |

ANIMAL INOCULATION for tubercle bacilli

10.00

BASAL METABOLISM DETERMINATION

15.00

BLOOD TRANSFUSION (not including cost of donors)

50.00 to 100.00

EXAMINATION OF ANIMAL BRAINS FOR RABIES

10.00

ANTI-RABIC TREATMENT, including vaccine material

100.00

OTHER LABORATORY EXAMINATIONS—Fees on request.

INTRAVENOUS and intraspinal therapy (intravenous serum, glucose, salt solution and intraspinal serum)—Fees on request.

CONTAINERS FOR SPECIMENS SUPPLIED ON REQUEST.

MESSENGER SERVICE. Reports telegraphed or telephoned on request.

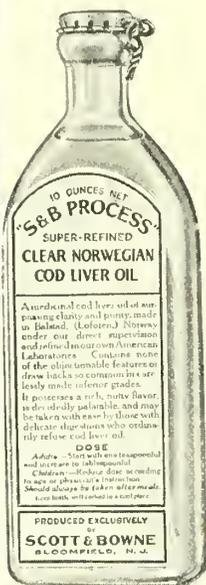
1003 Pacific Mutual Bldg., Los Angeles, Calif.

TELEPHONE 14235

PICO 3596

SUPREME IN ITS FIELD

Physiologists teach that cod-liver oil stands supreme among fats in the ease with which it is oxidized and absorbed and—as a fruitful source of the important anti-rachitic vitamine.



The "S. & B. PROCESS"

Clear Norwegian (Lofoten) Cod-liver Oil

meets the need for an easily absorbed, *anti-rachitic nutrient* in the best possible manner.

When you prescribe the "S. & B. Process" you know that your patient will absorb 100% pure oil of the *True Gadus Morrhuae*.

Liberal samples to physicians on request.

SCOTT & BOWNE, BLOOMFIELD, N. J.

21-1

Doctor—

When it comes to duplicating
an offer of
a mail order house

—we can do it

Don't send your money out
of California
before making a comparison

Pacific Surgical Mfg. Co.

320 W. Sixth Street

Los Angeles

Main 2959

62495

SPLEEN EXTRACT

(Archibald)

A highly potent physiological adjuvant utilizing the known properties of the Spleen for exalting the body defenses; increasing the number of red cells and all types of leucocytes. Particularly useful in chronic infection, Anemias, Malaria, Tuberculosis.

In 2 c. c. Ambules, physiologically standardized

The Vitalait Laboratory

of California

320 W. Colorado Street - Pasadena

Flood Building - - San Francisco

CALCREOSE

In Bronchitis and Tuberculosis

CALCREOSE (Calcium Creosotate) has proven itself to be a valuable remedial agent, especially when it is desired to continue the administration of a creosote product for a long period of time.

CALCREOSE has the pharmacologic activity of creosote without its disagreeable by-effects on the stomach and intestinal tract. Patients do not object to its use because it does not nauseate or cause any gastric discomfort or distress. Therefore, it can be administered in comparatively large doses for long periods of time.

CALCREOSE also acts like a tonic in that it stimulates the appetite, improves digestion; thus increasing weight and resistance.

Write for samples and literature

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

Diagnosis

X-Ray

Radium

Laboratory

Therapy

Burnett Sanitarium

Fresno, California

For those patients demanding the use of Radium and X-Ray we are in a position to offer to the medical profession the full and unqualified services of our laboratory. This laboratory is equipped with both Radium element and a complete Emanation plant which enables us to construct any application we may desire to fit the given case. To those physicians wishing to make their own application we are prepared to serve with Radium emanation as they may direct.

Address Dr. D. H. Trowbridge,

Secretary Burnett Sanitarium Co.

Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

X-Ray and Electro-Medical Apparatus
 X-Ray and High Frequency Coils and Machines
 Interrupterless X-Ray Transformers (Three Sizes)
 Coolidge Tube Transformers and Controls
 Electric Bakers (Limb and Body)
 Ozone Generators—Single, Double and Quadruple
 Electric Light Bath Cabinets with Thermo-Vacuum Space
 Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and
 Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for
 price lists and descriptive literature

HOURLY NURSING SERVICE

SAN FRANCISCO COUNTY NURSES'
 CENTRAL DIRECTORY

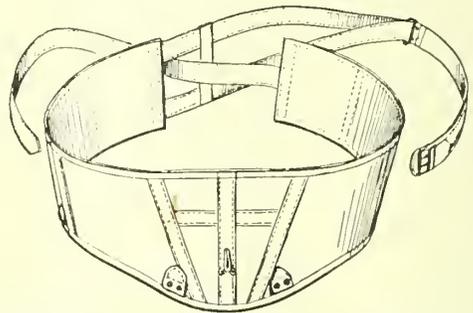
1155 Pine Street
 Telephone: Prospect 66
 San Francisco, California

Phone Park 8998

E. H. MARKEL Orthopedic Appliances

TRUSSES AND ELASTIC HOSIERY

1138 Mission Street Between 7th and 8th
 San Francisco, California



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are especially well cared for in a unique and efficient manner. For twenty-one years we have made our business a study, and by confining ourselves to these specialties have developed methods that assure relief to the patient and satisfaction to the doctor.

Every physician should secure a copy of our catalogue, which explains our business in detail. We have the largest and best equipped plant on the Pacific Coast and are the exclusive agents for the famous Dr. Smith's "Honest John" Truss, the only practical device for holding at the internal ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
 San Francisco

1522 Broadway
 Oakland

Are you protected?

Records of Insurance Companies and State Societies Show That

Many Doctors are Being Sued for Malpractice

and

Larger Verdicts are Being Recovered Against Doctors

If you are not insured

JOIN THE FUND

If you are insured

JOIN THE FUND

Protect yourself and your family by mailing your check for \$15.00 today to

DR. W. E. MUSGRAVE, Secretary

Butler Building

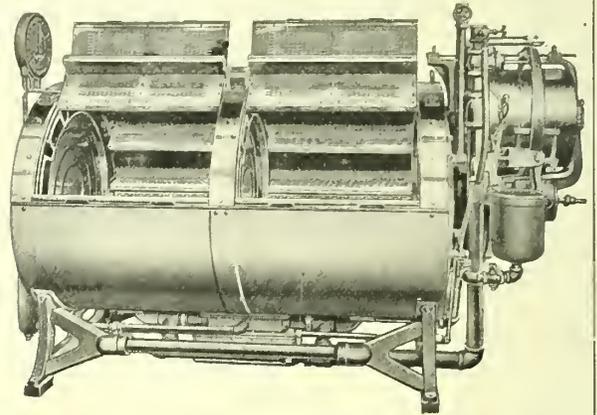
San Francisco, Calif.

DIRECTORY OF NATIONAL AND WESTERN MEDICAL AND HEALTH ORGANIZATIONS

| Society | President | Secretary | Annual Meeting |
|---|-------------------------------------|--|---|
| American Medical Association..... | Hubert Work, Pueblo, Colo..... | Alexander R. Craig, 535 N. Dearborn St., Chicago, Ill..... | St. Louis, May 22, 1922 |
| Arizona Medical Association..... | Albert L. Gustetter, Nogales..... | D. F. Harbridge, Goodrich Bldg., Phoenix..... | Prescott, 1922 |
| California State Medical Society..... | John H. Graves, San Francisco..... | W. E. Musgrave, Butler Bldg., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| League for Conservation of Public Health..... | Dudley Smith, Oakland..... | Celestine J. Sullivan, Butler Bldg., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| Colorado State Medical Society..... | H. A. Smith, Delta..... | F. B. Stephenson, Metropolitan Bldg., Denver..... | |
| Idaho State Medical Society..... | H. W. Wilson, Twin Falls..... | E. E. Laubaugh, Overland Bldg., Boise..... | |
| Montana Medical Association..... | W. W. Andrus, Miles City..... | E. G. Balsam, Hart-Albin Bldg., Billings..... | Great Falls, July, 1922 |
| Nevada State Medical Association..... | R. A. Bowdle, East Ely..... | Horace J. Brown, Goldfield..... | |
| New Mexico Medical Society..... | Chester Russell, Artesia..... | F. E. Tull, Albuquerque..... | |
| Oregon State Medical Association..... | Joseph A. Pettit, Portland..... | Raymond E. Watkins, Corbett Bldg., Portland..... | |
| Texas State Medical Association..... | T. J. Bennett, Austin..... | Holman Taylor, Texas State Bank Bldg., Ft. Worth..... | El Paso, May, 1922 |
| Utah State Medical Association..... | R. R. Hampton, Salt Lake City..... | Wm. L. Rich, Boston Bldg., Salt Lake City..... | |
| Washington State Medical Assn..... | A. E. Burns, Seattle..... | C. H. Thomson, Cobb Bldg., Seattle..... | |
| Wyoming State Medical Society..... | E. A. Kell, Rawlins..... | Earl Whedon, Sheridan..... | |
| Calif. Assn. of Med. Soc. Workers..... | Louise Morrow, San Francisco..... | Edna J. Shirsper, 3700 California St., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| California Assn. of Physiotherapists..... | Hazel Furchgott, San Francisco..... | Florence Atkinson, 29 Mosswood Road, Berkeley..... | Yosemite Park, May 15-18, 1922 |
| California Assn. of Radiographers..... | F. McCormack, San Francisco..... | Leonard Frank, Physicians Bldg., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| California State Board of Health..... | G. E. Ebright, San Francisco..... | Walter M. Dickie, Sacramento..... | |
| California Board Med. Examiners..... | P. T. Phillips, Santa Cruz..... | Chas. B. Pinkham, Flood Bldg., San Francisco..... | |
| Anesthetists, Northern Cal. Assn. of..... | Mary Botsford, San Francisco..... | Dorothy A. Wood, 1390 7th Ave., San Francisco..... | Yosemite, May 15, 1922 |
| Anesthetists, Southern Cal. Assn. of..... | W. R. Crane, Los Angeles..... | Eleanor Sevmour, 308 Cons. Realty Bldg., Los Angeles..... | Yosemite, May 15, 1922 |
| Anesthetists, Pacific Coast Assn. of..... | Geo. P. Waller, Los Angeles..... | Eleanor Sevmour, 308 Cons. Realty Bldg., Los Angeles..... | Yosemite, May 15, 1922 |
| Los Angeles Orthopedic Society..... | | Alfred E. Gallant, Van Nuys Bldg., Los Angeles..... | |
| San Francisco Orthopedic Club..... | J. T. Watkins, San Francisco..... | H. H. Markel, Butler Bldg., San Francisco..... | |
| Pacific Coast Roentgen Ray Society..... | W. W. Watkins, Phoenix, Ariz..... | Roy Pavne, Portland, Ore..... | Phoenix, Ariz., Dec. 1-3, 1921 |
| Western Section of American Roentgen-Ray Society..... | Albert Soiland, Los Angeles..... | W. W. Watkins, Phoenix, Ariz..... | With Pacific Coast Roentgen-Ray Soc., May or June, 1922 |
| Western Surgical Association..... | Chas. L. Bennett, Los Angeles..... | Wm. Duffield, Auditorium Bldg., Los Angeles..... | |
| Southern Calif. Medical Assn..... | Chas. D. Lockwood, Pasadena..... | Warren A. Dennis, St. Paul, Minn..... | St. Louis, Dec. 9-10, 1921 |

“The Most Efficient and Economical Ever Built”

In these words the physician-in-chief of a prominent hospital sums up his opinion of the Henrici Bronze Washer, which has been in operation in that institution's laundry for the past six years.



A large amount of this laundry work is from infectious disease, which is disinfected by boiling in the Henrici for thirty minutes.

The Henrici has effected a material saving of water, soap, blueing and all other material.

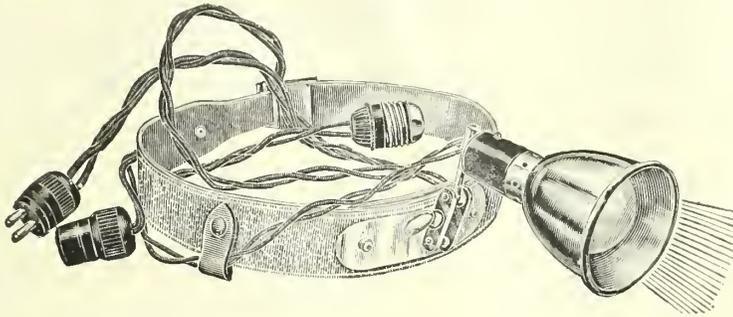
Send for special circular

Troy Laundry Machinery Company, Ltd.

CHICAGO TROY NEW YORK CITY SAN FRANCISCO SEATTLE BOSTON LOS ANGELES

WANTED—The following second hand articles: X-Ray outfit with or without fluoroscopic screen, office furniture (steel), electric sterilizers, De Zang's Ophthalmoscope and Auroscope (with battery), tonsillectomy outfits, instruments, small nitrous oxid and oxygen gas outfit, small electric baker and therapeutic lamps, oculist's test cabinet, laboratory equipment and hospital furniture. State what you have and the lowest cash price. All must be in perfect condition.

Post Office Box 530, King City, Cal.



\$12.50
POSTPAID

You will never
hear any
uncomplimentary
remarks about
**this new
Hood Head
Lamp**

It has an exceptionally powerful nitrogen bulb—no shadows, no glare. No danger of short circuit or burns. Its ventilated aluminum reflector makes it 60% cooler than other patterns. The band is of real cowhide, with leather-padded forehead part. Buckle of improved slide type. Snap fastener arrangement to remove cords, permitting use of head mirror. For 110 volt direct or alternating current.

PERCY J. MEYER & CO.

379 Geary Street Adjoining Stewart Hotel San Francisco

"Devoted to the Service of the Doctor"

The 1920 Record

Amount collected from our members

\$223,225.00

in 1920

Paid for sickness and accident claims

\$145,038.00

in 1920

Saved for future protection of members

\$47,825.00

in 1920

Total returned to members and saved
for future protection

\$192,863.00

in 1920

Expense of operation less than

\$2.30

per member in 1920

This kind of real insurance cost our members \$13.00 for an accident policy paying \$25.00 weekly and \$5000.00 death benefit, or \$26.00 for two such policies, while the health policy, covering any illness beginning thirty days after date of policy, except venereal, epilepsy or insanity, has never exceeded \$17.00 per year.

\$3.00 membership fee will now carry either policy until Mar. 10, 1922

PHYSICIANS CASUALTY ASSOCIATION

PHYSICIANS HEALTH ASSOCIATION

304-12 City National Bldg., Omaha, Neb.

STERIPULES

(The Perfect Ampule)

For intravenous, intramuscular and
subcutaneous use

"STERIPULES"

are prepared in modern laboratories under ideal conditions. Double distilled water; chemicals of highest purity and alkali-free glass ampules only are used.

Literature gladly furnished

Stocked complete by

Pacific Surgical Mfg. Co.

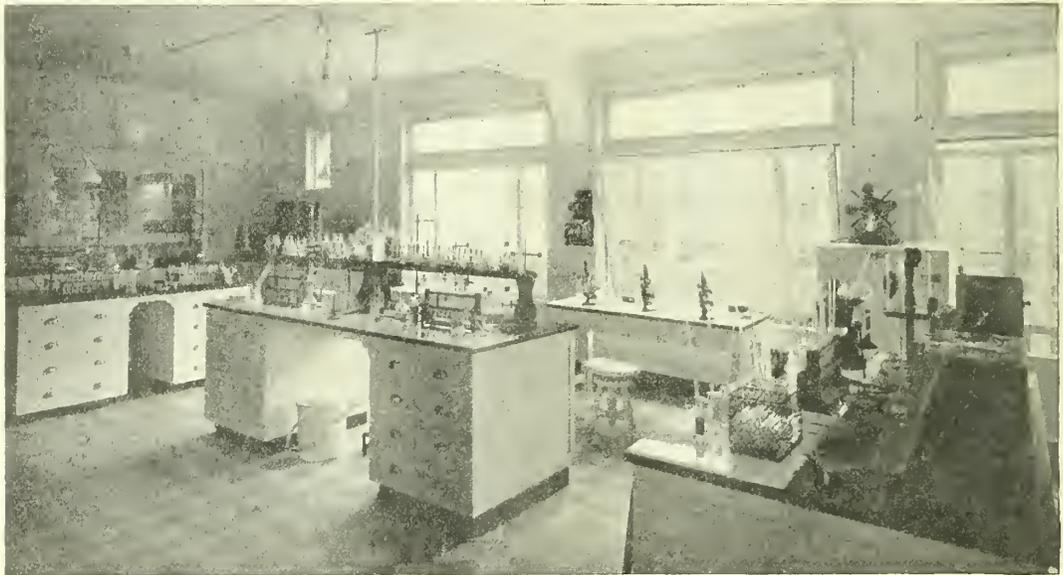
320 WEST SIXTH STREET, LOS ANGELES

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

Pacific Wassermann Laboratories



Prompt • Accurate • Dependable

OUR prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over ten years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy.

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diabetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

Complete Fee List sent on request

Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building

California

State Journal of Medicine



ISSUED MONTHLY, OWNED AND PUBLISHED BY THE
MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

ENTERED AT SAN FRANCISCO, CAL., AS SECOND-CLASS MATTER

OSTON MEDICAL LIBRARY
 1921

DECEMBER, 1921

DECEMBER CONTENTS

| | | |
|---|---|-----|
| Editorials: | Section Officers for the 1922 State Society Meeting | 481 |
| Use of Quinidin in Cardiac Arrhythmias | Index and Contents of the California State Journal of Medicine for 1921 | 482 |
| Advertising in Lay Publications | State Society—Notice to County Secretaries | 486 |
| Original Articles: | County Societies: | |
| Return to Work After Injury. By M. R. Gibbons, M. D. | Alameda | 487 |
| Insurance Rates a Guide to Hygienic Conditions Surrounding Different Occupations. By Milbank Johnson, M. D. | Kern | 487 |
| Occupational Diseases of Skin and Hands in California Industry. By R. T. Legge, M. D. | Los Angeles | 487 |
| Modern Medical Service for the Industrial Injured and Sick. By E. L. Gilcreest, M. D. | Merced | 488 |
| Neuropsychiatry to Industrial Medicine. By H. W. Wright, M. D. | Orange | 488 |
| Post-Traumatic Neuroses: Their Mechanism. By Joseph Catton, M. D. | Riverside | 488 |
| Physiotherapy Employed in Reconstruction Work. By James T. Watkins, M. D. | San Diego | 489 |
| Fractured Femurs. By C. E. Early, M. D. | San Francisco | 489 |
| Industrial Disabilities. Efficient Record Making. By H. L. Langnecker, M. D. | Santa Barbara | 489 |
| Life Insurance. Examination of Applicants. By Thos. G. Dabney, M. D. | Santa Clara | 489 |
| | San Joaquin | 490 |
| | Stanislaus | 490 |
| | Lane Lectures | 490 |
| | Dr. Clemens v. Pirquet | 491 |
| | Section on Obstetrics and Gynecology for the Coming State Meeting | 490 |
| | Section on Industrial Medicine (San Francisco County Medical Society), January 17, 1922 | 490 |
| | California Academy of Medicine | 490 |
| | Journal of Orthopaedic Surgery | 490 |
| | Book Reviews | 491 |
| | Books Received | 491 |
| | Department of Pharmacy and Chemistry. Edited by Felix Lengfeld, Ph. | 491 |
| | New Members | 492 |
| | Deaths | 492 |

MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

JOHN H. GRAVES, San Francisco, President
 ALFRED C. REED, San Francisco, First Vice-Pres.
 H. G. BRAINERD, Los Angeles, President-Elect
 JOSEPH CATTON, San Francisco, Second Vice-Pres.
 W. E. MUSGRAVE, San Francisco, Editor and Secretary
 CELESTINE J. SULLIVAN, Managing Editor

COUNCILORS:

| | | |
|---|--|---|
| FIRST DISTRICT — San Diego, Riverside, Orange, San Bernardino and Imperial Counties. PAUL M. CARRINGTON , San Diego (Term expires 1924) | FIFTH DISTRICT — Santa Clara, San Mateo, San Benito and Santa Cruz Counties. FRANK H. PATERSON , San Jose (Term expires 1923) | SEVENTH DISTRICT — Alameda, Contra Costa, San Joaquin and Calaveras Counties. EDW. N. EWER , Oakland (Term expires 1923) |
| SECOND DISTRICT — Los Angeles, Santa Barbara, Ventura and Kern Counties. WM. H. KIGER , Los Angeles (Term expires 1922) | SIXTH DISTRICT — San Francisco County. C. G. KENYON , San Francisco, Chairman. (Term expires 1922) | EIGHTH DISTRICT — Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc and Siskiyou Counties. JAMES H. PARKINSON , Sacramento (Term expires 1922) |
| THIRD DISTRICT — San Luis Obispo and Monterey Counties. T. C. EDWARDS , Salinas (Term expires 1924) | COUNCILORS AT LARGE: O. D. Hamlin , Oakland (term expires 1922); Réne Bine , San Francisco (term expires 1923); Geo. H. Kress , Los Angeles (term expires 1923); Wm. T. McArthur , Los Angeles (term expires 1923); Saxton T. Pope , San Francisco (term expires 1924); C. Van Zwalenburg , Riverside (term expires 1923). | NINTH DISTRICT — Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt and Trinity Counties. JAMES H. McLEOD , Santa Rosa (Term expires 1923) |
| FOURTH DISTRICT — Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties. FRED R. DE LAPPE , Modesto (Term expires 1924) | | |

REID BROS.



TRADE MARK REG.

Impermephane

IM-PER-ME-PHANE

U. S. PAT. OFFICE

—back again

A TRANSPARENT SURGICAL DRESSING PROTECTIVE, SUPERIOR TO OILED SILK OR MUSLIN, GUTTA-PERCHA OR ANY OTHER MATERIAL

IMPERMEPHANE may be boiled or sterilized in any solution without injury—is strong, flexible and transparent. It does not deteriorate with age—keeps in any climate and will not crack or stick to dressings.

IMPERMEPHANE is invaluable in treating burns and skin infections where it is inadvisable to remove the dressings daily to observe healing progress.

Medications such as salves, carbolic or picric acid, ether, mustard and hot applications, are retained in position and their effectiveness assured when Impermephane is used as a covering.

Genuine Impermephane was not obtainable during the war, but we can now supply it as follows:

- Box containing 10 sq. yds. \$4.50 each*
- Box containing 5 sq. yds. 2.50 each*
- Box containing 1 sq. yd. .65 each*

Call, or order by mail, and get the genuine Impermephane—there is no substitute and it can be obtained from no other source.

REID BROS., Inc.

91 to 99 Drumm Street, San Francisco, Cal.



Now building a new factory, the largest and finest of its kind in the West, at Irvington, Alameda County, California

EDWARD I. SUGARMAN

MARION H. LIPPMAN

LIPPMAN & SUGARMAN LABORATORY

ESTABLISHED 1914

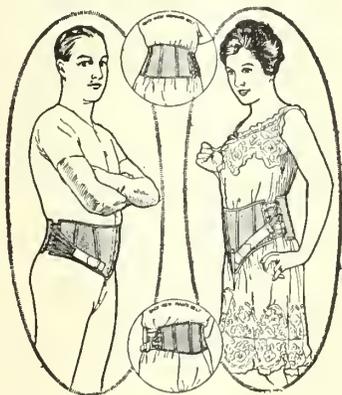
WASSERMANN (AND NOGUCHI CONTROL) TESTS DAILY

REPORTS ISSUED TO PHYSICIANS ONLY

ROOM 911 BUTLER BUILDING
135 STOCKTON STREET
SAN FRANCISCO

TELEPHONES: GARFIELD 541
SUTTER 4553
(EMERGENCY) WEST 1400

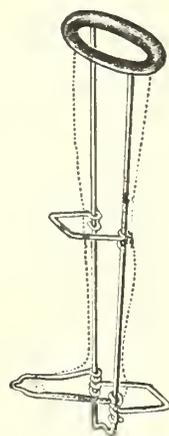
C. H. HITTENBERGER CO.



Manufacturers and fitters of
**Surgical and Orthopedic
Appliances**

Artificial Limbs**Surgical Corsets****Trusses, Etc.**

Post-Operative Abdominal Binders and
Supports a Specialty

Lady Attendants

Fitting Rooms
1103 MARKET STREET

Factory
12 SEVENTH STREET

Phone Market 4244

San Francisco

TOXIN-ANTITOXIN

Lederle

CONFERS

PROLONGED IMMUNITY

AGAINST

DIPHTHERIA

ALL SUSCEPTIBLE CHILDREN FROM SIX MONTHS TO SIX YEARS SHOULD BE IMMUNIZED.

SUSCEPTIBILITY CAN READILY BE DETERMINED BY THE SCHICK TEST.

Full particulars upon request

LEDERLE ANTITOXIN LABORATORIES
511 FIFTH AVENUE
CORNER OF FORTY-THIRD STREET
NEW YORK CITY

PACIFIC COAST BRANCH
163 JESSIE STREET
SAN FRANCISCO, CALIFORNIA
TELEPHONE KY. 4598

St. Gothard Convalescent Home



St. Helena, Napa County, California Telephone St. Helena 1

For particulars address C. & L. Broniscoe, 925 Grove St., San Francisco

Phone Park 5193



HOSPITAL FOR CHILDREN AND TRAINING SCHOOL FOR NURSES

A general hospital of 275 beds for women and children. Thirty beds for maternity patients in a separate building, newly equipped.

Complete services of all kinds for women and children. Infant feeding a specialty.

House staff consists of three resident physicians and eight internes.

Accredited by the Council on Medical Education and Hospitals of the American Medical Association.

Institutional member of League for the Conservation of Public Health.

The oldest school of nursing in the West.

Director of Hospital
Dr. Wm. E. Musgrave
Medical Superintendent
Dr. Edna L. Barney
Assistant Superintendent
Mrs. Hulda N. Fleming
Superintendent of Nurses
Miss Ada Boye, R.N.
3700 California Street
San Francisco



The Cutter Laboratory

Nearly a quarter century producing

Biologics Exclusively

Diphtheria Antitoxin

Cutter's (Ready-to-Use) Syringe

1,000 Units
3,000 Units
5,000 Units
10,000 Units
20,000 Units

*If you specify "CUTTER'S" you get the best
in the easiest-to-use syringe*

THE CUTTER LABORATORY

Berkeley, California

CINCHOPHEN (Abbott)

versus the salicylates



In acute rheumatism. Hanzlik and collaborators (see A. M. A. Journal, issue of June 18, 1921) compared the effects of CINCHOPHEN and the salicylates in a number of cases. Large or intensive doses of the former drug relieved the pain with less renal irritation than usual under salicylates. Albuminuria when it occurred was not nearly so severe.

In arthritis. Grace, from his experience, regards CINCHOPHEN as the drug of choice when it is desirable to favor the kidneys. (See A. M. A. Journal, issue of Oct. 15, 1921.) He also found it better tolerated by the stomach in the cases treated.

In gout, lumbago, neuritis and retention headaches, a course of CINCHOPHEN in lieu of the salicylates and coaltar anodynes is suggested by way of trial.

Specify "Abbott's" when prescribing. Insist on "Abbott's" when ordering. "Abbott's" is reliable.

Net Price: 100 Tablets . . . \$3.15

Leaflet (C283) on request

If your druggist is not stocked with Abbott products for your prescribing convenience, please advise us.

The Abbott Laboratories, Dept. 11 - - - 4753 Ravenswood Avenue, Chicago

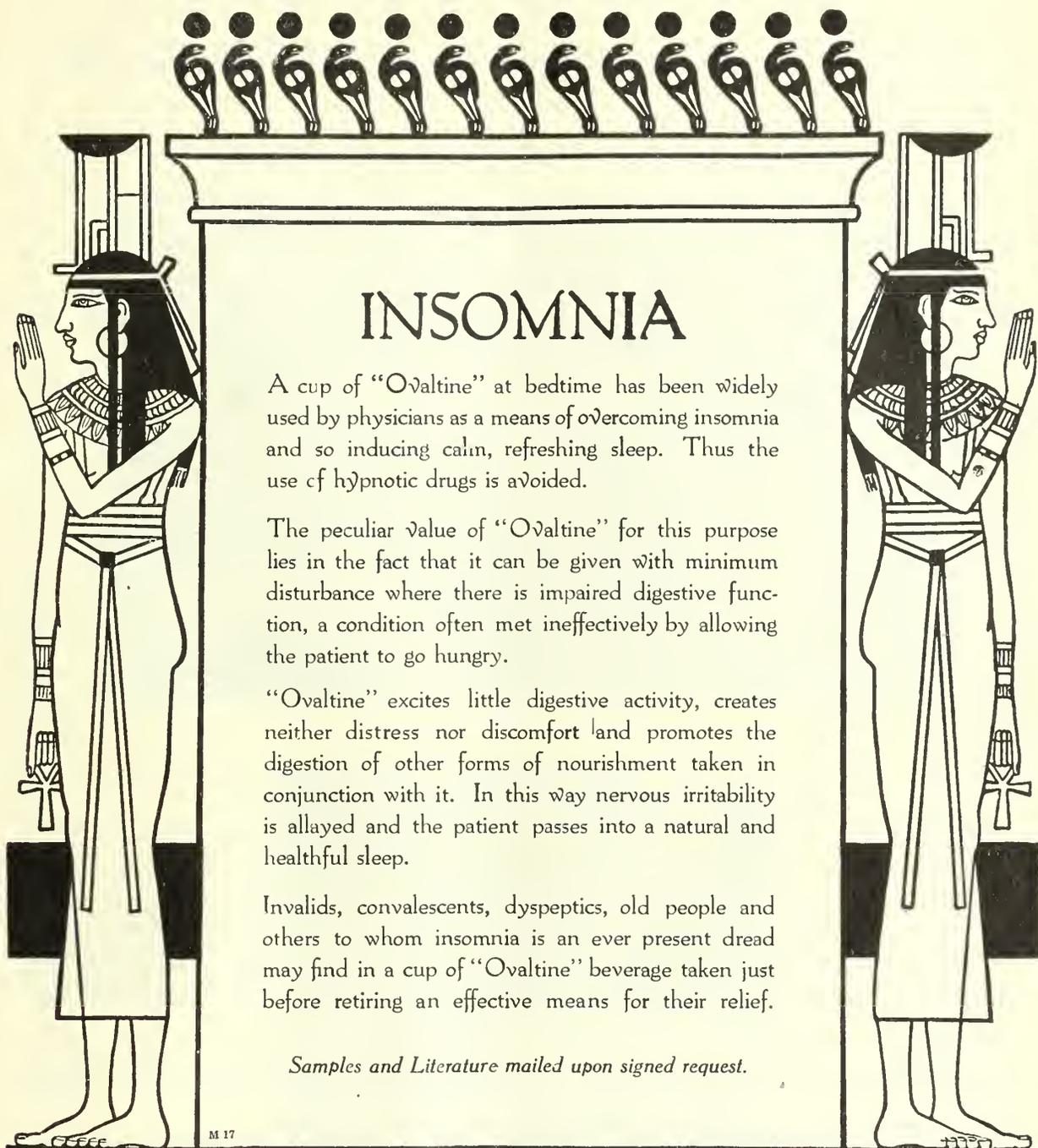
31 E. 17th St., New York

559 Mission St., San Francisco

225 Central Bldg., Seattle

TORONTO

BOMBAY



INSOMNIA

A cup of "Ovaltine" at bedtime has been widely used by physicians as a means of overcoming insomnia and so inducing calm, refreshing sleep. Thus the use of hypnotic drugs is avoided.

The peculiar value of "Ovaltine" for this purpose lies in the fact that it can be given with minimum disturbance where there is impaired digestive function, a condition often met ineffectively by allowing the patient to go hungry.

"Ovaltine" excites little digestive activity, creates neither distress nor discomfort and promotes the digestion of other forms of nourishment taken in conjunction with it. In this way nervous irritability is allayed and the patient passes into a natural and healthful sleep.

Invalids, convalescents, dyspeptics, old people and others to whom insomnia is an ever present dread may find in a cup of "Ovaltine" beverage taken just before retiring an effective means for their relief.

Samples and Literature mailed upon signed request.

M 17

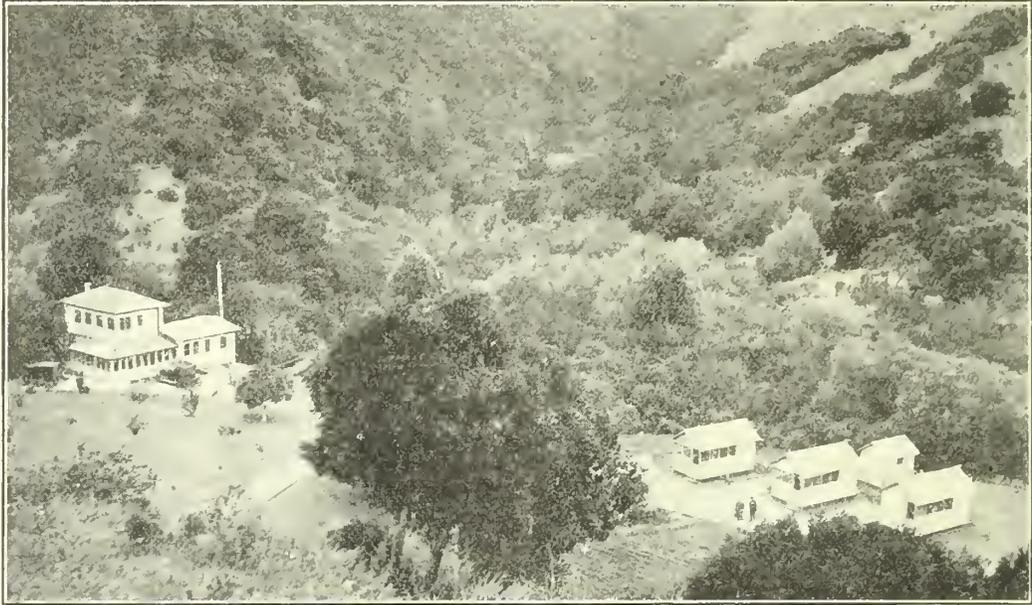
OVALTINE

THE WANDER COMPANY, 37 S. Wabash Ave., Chicago
Works: Villa Park, Ill.

CANYON SANATORIUM

An Open Air Sanatorium for the Scientific Treatment of Tuberculosis

REDWOOD CITY, CALIFORNIA



NESTLED IN THE FOOTHILLS



SOME OF THE COTTAGES

□
*Entire Lack
of Hospital
Atmosphere*

□
*Rates
Reasonable*

□
Climate Ideal

The training that a patient receives while in a properly-conducted Sanatorium is a valuable education that enables him to continue the routine so necessary in the maintenance of his future health. We direct particular attention to the schooling of the patient.

FOR PARTICULARS ADDRESS
DR. RALPH B. SCHEIER, MEDICAL DIRECTOR
FLOOD BUILDING - - - SAN FRANCISCO
Telephone Douglas 4486



The Most Ethical
 Prescription Pharmacy
 in
 San Francisco

Accuracy, Purity, Quality
 and Immediate Service

**Broemmel's Prescription
 Pharmacy**

California and Steiner Sts. West 558-559
 and Manufacturing Chemists
 San Francisco, California

AMERICAN AMBULANCE

AND NURSES' BUREAU

PHONE MARKET 21

Military Blue Ambulances

City and Country Trips on Application
 Rates Reasonable

146 CENTRAL AVE., SAN FRANCISCO



COTTAGE DEPARTMENT

THE LIVERMORE SANITARIUM



HYDROPATHIC
 DEPARTMENT

THE HYDROPATHIC DEPARTMENT is especially built for, and devoted to, the treatment of general diseases excluding, however, surgical and infectious diseases. Special attention is given to the treatment of nervous diseases of the functional and organic type. Our laboratory is equipped for the study of secretions and excretions. A modern X-ray department is also available.

THE COTTAGE DEPARTMENT (For Mental Patients). This department is some distance away from the Hydropathic Department and has its own facilities for Hydropathic and other treatment. It consists of a number of cottages, some of them for individual patients, offering the very utmost in privacy and comfort. The cottage system permits homelike surroundings and segregation of patients in accordance with conduct.

GENERAL FEATURES

1. Climatic advantages not excelled in the U. S.
2. Beauty of the grounds and of the neighboring canyons and mountainous country.
3. Facilities for indoor and outdoor gymnastics under the charge of an athletic director.
4. An excellent occupational department providing occupation and diversion for every variety of nervous and mental patient.
5. Well trained and large medical and nursing staff so that careful individual attention is given to each patient.
6. Rates (inclusive of medical care, hydropathic and massage treatments, also general nursing) \$45.00 per week and upward.

Address Livermore Sanitarium,
 Livermore, Calif.

RADIUM IS WORTH ITS COST

Radium has a definite place in surgery and medicine today in the specific treatment of skin and other superficial forms of cancer, and also in conjunction with the operative treatment of cancer occurring internally. Its value in the treatment of some other common diseases has been demonstrated and proven.

A PHYSICIAN'S REPUTATION

will be not only safeguarded but enhanced, if when entering upon the practice of radium therapy he has at his command the complete and careful service which the mark below denotes.

We can explain more intelligently this Company's complete service, which only commences when the purchase of radium is made, if, when writing us, the physician or surgeon states in what field of work he is specializing.

Write Our Nearest Office



The Mark of a Complete and Careful Radium Therapeutic Service

THE RADIUM COMPANY OF COLORADO

Principal Offices—Laboratories

Radium Building

Denver, Colorado

Branch Offices

SAN FRANCISCO

CHICAGO

NEW YORK

582 Market St.

Peoples Gas Bldg.

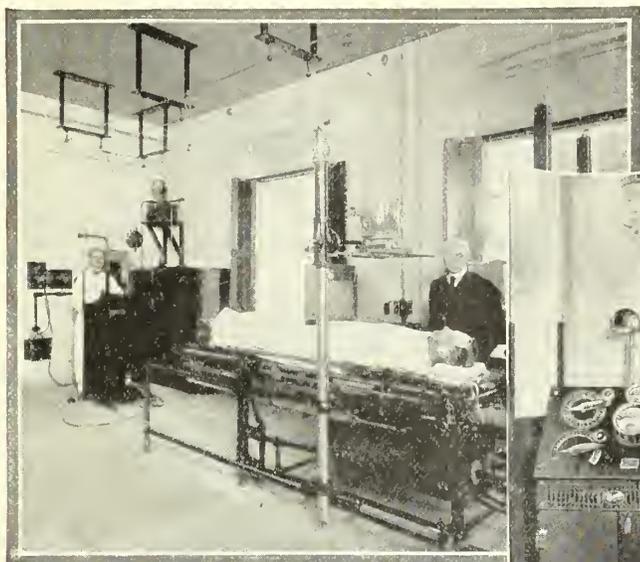
50 Union Square

Standardized Solid Extracts

of definite drug content, evaporated at the lowest feasible temperatures so as to retain the active principles unchanged—these are procurable on specification, should you desire your prescriptionist to incorporate them in your R/s.

SHARP & DOHME

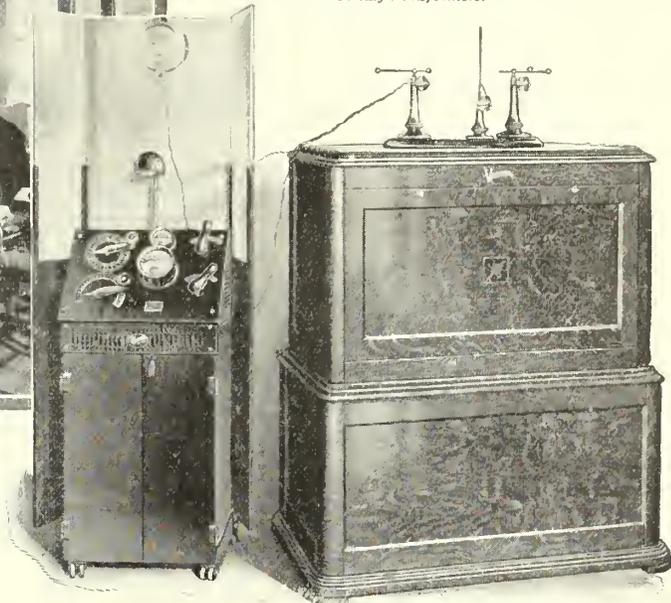
Purveyors to the medical profession since 1860



Model "Snook" Roentgen Apparatus

The only "cross-arm" type X-Ray machine on the market. The principles of this method of rectification have revolutionized the X-Ray art. In the development of apparatus for the new deep therapy technique, it has been proved conclusively that these same principles are essential to dependable apparatus.

There is only one "Snook"—the highest perfection yet attained in X-Ray transformers.



X-Rays And The Family Physician

A physician's office without an X-Ray apparatus is not yet so old fashioned as a business office without a typewriter. But the time is almost here when patients will expect to be X-Rayed by their family physicians.

Few professional letters are written with pens nowadays. But many diagnoses are still made without the aid of the X-Ray, despite the simplicity of X-Ray apparatus, despite the certainty that the X-Ray lends.

It is harder to select an X-Ray machine than a typewriter. All typewriters serve the same purpose. But all X-Ray apparatus does not serve the same purpose. What type shall the physician choose? That

depends on the requirements of his practice—on what he wants to accomplish.

The physician needs guidance. The Victor organization gives it to him. For nearly thirty years this organization has served as engineering counselor to the medical profession so far as the electro-medical apparatus is concerned. It places its knowledge and experience at the service of the physician. Victor responsibility does not end with the installation of a machine.

Ask the nearest Victor Service Station to send a technical representative. Let him study your requirements in the light of your practice. No obligation will be incurred.

VICTOR X-RAY CORPORATION, Jackson Blvd. at Robey St., Chicago
Territorial Sales and Service Stations:

SAN FRANCISCO—VICTOR X-RAY CORPORATION, 254 SUTTER ST.
LOS ANGELES—VICTOR ELECTRIC LOS ANGELES, 930 HILL ST.



PHYSICIANS INSTITUTE OF PHYSIO-THERAPY

LIMITED TO THE TREATMENT OF AMBULATORY PRIVATE CASES
UNDER STRICTEST MEDICAL SUPERVISION

226 HAIGHT ST., SAN FRANCISCO Phone Park 6156

All approved forms of *Hydrotherapy*—coupled where indicated with *Nauheim—Hydro-Electric—Radio Active Clay—Calcic Carbonate—Magnesia Carbonate* and *Sulphate Baths—Radium Emanatorium—Modern modifications of Zander Apparatus, Massage and Manipulations. Electro-Therapy, Thermo-Penetration, Actino-Therapy, the Bergonie Treatment for Obesity—Electrolysis for the Removal of Superfluous Hair and Other Minor Blemishes—Proctoclysis, Corrective Gymnastics* and the application of tabulated *Physical Efficiency Tests*.

We are well equipped with modern mechanical devices of scientifically proven efficiency for the *Relief of Suffering*. We maintain a comprehensive *Service Organization of Trained Attendants* rendering *Personalized Attention* to every patient.

The following chronic indications are most successfully treated at this Institute: *General Debility, Protracted Convalescence; Disorders of Nutrition* and the *Alimentary Tract; Cardio-Vascular and Renal Disorders; Functional Disturbances of the Nervous System; Ankylosed Joints; Muscle Atrophy; Defects of Physical Development*.

DOCTOR—The Physicians Institute endeavors to meet a great and necessary co-operative role with the Physicians and Surgeons of San Francisco and Bay Cities, in their fight with intractable morbid conditions. Our Institute is simply a unique and efficient therapeutic agent, available to all reputable physicians who want to retain their patients, but desire to place them in the hands of specially trained technicians who are equipped with the required modern therapeutic appliances and experience, and who make a specialty of coping with conditions described.

Why not investigate thoroughly about us today?

N. A. Karpaty, B. Sc.,
Technical Superintendent.

Mrs. N. A. Karpaty,
In Charge of Women's Dept.

G. H. Richardson, M. D.,
Medical Director.

Nathalie Selling, M. D.,
Staff Associate.

Care—Courtesy—Privacy—Comfort. Best references. Inspection invited.

Colfax Hospital for the Tuberculous



Convalescents with normal temperature taking the cure. A November Morning.

SITUATED in the foothills of the Sierra Nevada Mountains at Colfax, California, one hundred forty-four miles east of San Francisco on the Ogden route of the Southern Pacific Railway. Operated in conjunction with the Cottage Colony of the Colfax School for the Tuberculous and intended for the accommodation of those patients who are unable to bring attendants and live in the Colony. Patients are given daily medical supervision and enjoy the advantages of all approved modern methods of treatment. Terms reasonable. For further particulars apply to

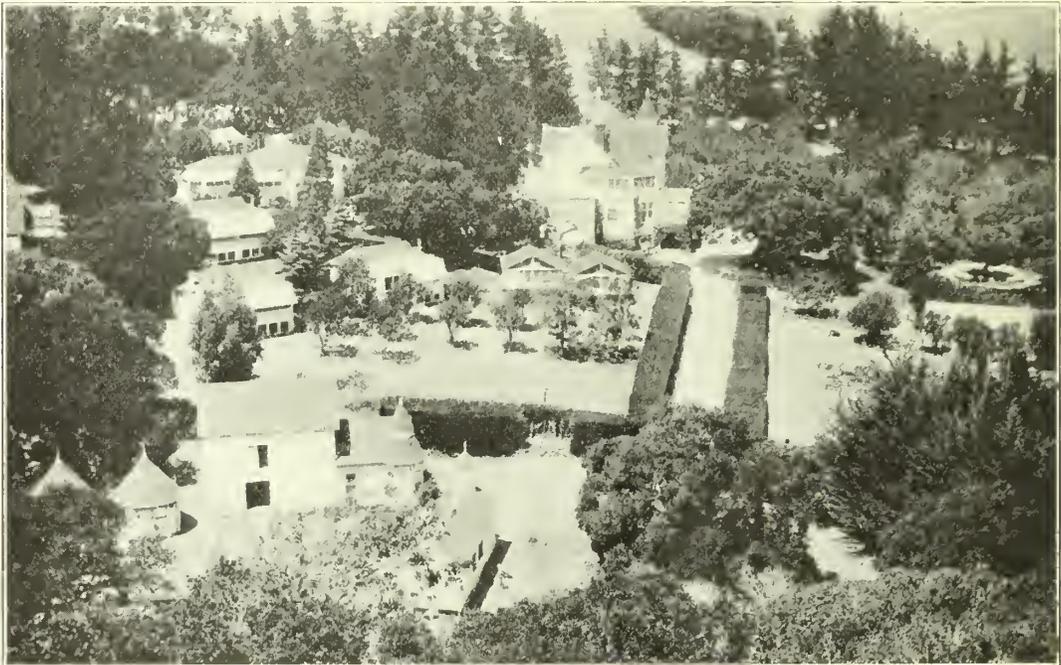
ROBERT A. PEERS, Medical Director
Colfax, California

CALIFORNIA SANATORIUM

— FOR THE —

SCIENTIFIC TREATMENT OF TUBERCULOSIS

Belmont, San Mateo Co., California



View of Main Building and Some of the Cottages

Ideal climate all the year.

Forty minutes by train from San Francisco.



A Modern Cottage

Rates from \$25 per week upwards, which includes medicines and medical attendance.

FOR PARTICULARS ADDRESS

DR. MAX ROTHSCHILD
Medical Director
350 Post St., San Francisco

DR. HARRY WARREN,
Assistant Medical Director
Belmont

PHENOLTETRACHLORPHTHALEIN FOR LIVER FUNCTIONAL TESTING

Standardized and Sterile Solution in Ampules
(H. W. & D.)

Each ampule contains more than two cubic centimeters of the solution, each cubic centimeter containing fifty milligrams of the di-sodium salt of the dye.

4 ampules in a box.....\$1.00

LITERATURE
ON
REQUEST

KECK'S
PRESCRIPTION PHARMACIES

135 STOCKTON ST. 209 POST ST.
PHONE PHONE
SUTTER 5426 GARFIELD 1380
(UP-STAIRS)
SAN FRANCISCO.

EVERYTHING
IN
AMPULES

ESTIMATION OF BASAL METABOLISM

ERNST A. VICTORS, M. D.
PRACTITIONERS LABORATORIES
133 GEARY STREET, SAN FRANCISCO
Telephone SUTTER 1015

The Management of an Infant's Diet

Malnutrition, Marasmus or Atrophy

| | | | | |
|----------------------------------|---|-----------|-------------------------|--------------|
| Mellin's Food | } | Analysis: | Fat | .49 |
| 4 level tablespoonfuls | | | Protein | 2.28 |
| Skimmed Milk | | | Carbohydrates | 6.59 |
| 8 fluidounces | | | Salts | .58 |
| Water | | | Water | <u>90.06</u> |
| 8 fluidounces | | | | 100.00 |

The principal carbohydrate in Mellin's Food is maltose, which seems to be particularly well adapted in the feeding of poorly nourished infants. Marked benefit may be expected by beginning with the above formula and gradually increasing the Mellin's Food until a gain in weight is observed. Relatively large amounts of Mellin's Food may be given, as maltose is immediately available nutrition. The limit of assimilation for maltose is much higher than other sugars, and the reason for increasing this energy-giving carbohydrate is the minimum amount of fat in the diet made necessary from the well-known inability of marasmic infants to digest enough fat to satisfy their nutritive needs.

Mellin's Food Company,

Boston, Mass.

Byron Hot Springs

The Home of Health

California

Announce

Reduced Fall and Winter Rates

Cottage Room with Board :: \$4.00 a Day

Hotel Room with Board :: \$5.00 a Day

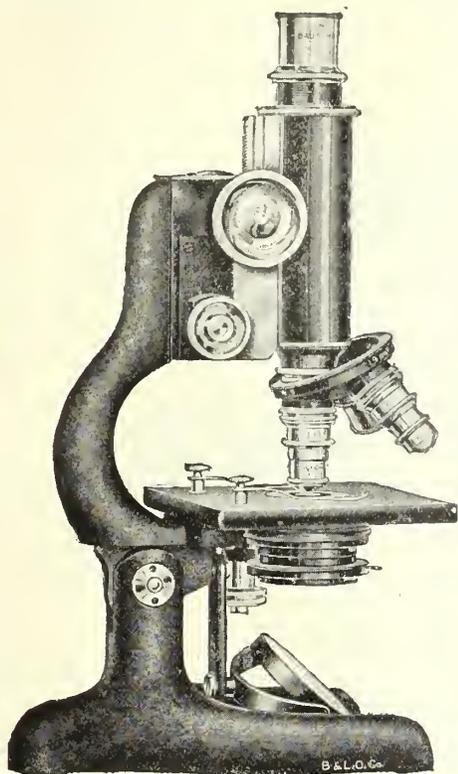
Natural Hot Laxative Springs—Hot Mineral Baths—Hot Spring Mud Baths—Massage
Relieves Rheumatism, Neuritis and Stomach Troubles

Excellent Golf Links (Grass Greens)

New fireproof hotel, swimming pool, tennis, motoring, etc.; 2½ hours' ride by train or auto from San Francisco

Beautiful booklet on request.
BUS SERVICE

BYRON HOT SPRINGS P. O., CAL.
San Francisco Booking Office
168 O'Farrell Street. Phone Douglas 560



Microscope FFS 8

MICROSCOPE Equipment for Medical Work

Eyepieces, 5× and 10×.
Objectives, 16 mm, 4 mm and 1.9 mm oil immersion.
Abbe condenser in quick-screw sub-stage.
Circular dust-proof nosepiece.
Side fine adjustment—lever type, ceases to act when objective touches the slide.
Large stage is completely covered with rubber—top, bottom and edges.
Complete in polished hardwood carrying case,

\$132.00

**BAUSCH & LOMB OPTICAL CO.
OF CALIFORNIA
154 SUTTER STREET
SAN FRANCISCO CALIFORNIA**



ANAHEIM HOSPITAL



CLINIC BUILDING



FULLERTON HOSPITAL

JOHNSTON-WICKETT CLINIC

Anaheim, California

STAFF

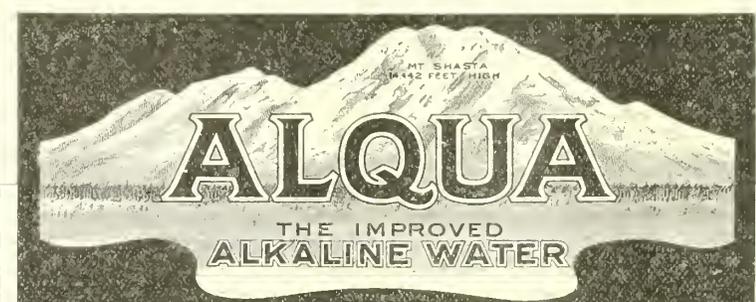
DR. H. A. JOHNSTON
DR. W. H. WICKETT
DR. J. A. JACKSON
DR. W. M. COLE
DR. H. D. NEWKIRK
DR. R. D. AIKMAN
DR. H. VAN DE ERVE
DR. J. ROBINSON
DR. A. H. GALVIN
J. S. WARD, Ph. G.

DEPARTMENTS

Surgery, Internal Medicine, Gynecology, Urology, Eye, Ear, Nose, Throat, Pediatrics, Orthopedics, Radiology and Pharmacy.

Laboratories fully equipped for basal metabolism estimations, Wassermann reaction and blood chemistry, Roentgen and radium therapy.

Large clinical experience conducted by clinicians of note has established the superior efficiency of ALQUA in overcoming the disagreeable and dangerous symptoms of Acidosis in—



ALQUA WATER contains the alkaline salts found normally in the human body. Physicians will find it invaluable where alkaline treatment is indicated. Not only is it very effective in the treatment of most acute and chronic diseases caused or accompanied by acidosis, but it is an ideal preventive, in that it neutralizes destructive acid by-products in the system.

GLACIER SPRING WATER with which Alqua is prepared, originates in the upper glaciers of Mt. Shasta, California, U. S. A., (Elevation 14,442 ft.) Its great purity without artificial treatment, renders it especially suitable for affinitization with the added salts, thus forming a combination that is remarkable as an alkaline water. Glacier water is released from the earth at Shasta Springs where it is put into block-tin lined carriers and transported to the Company's laboratory where the alkaline salts are scientifically added under the directions of an expert chemist, thereby creating, through the united efforts of science and nature, the wonderful medicinal virtues of Alqua Water. ASK YOUR PHYSICIAN ABOUT IT. ALQUA MEDICINAL WATER CO.

SHASTA WATER CO.
BOTTLED AND CONTROLLING DISTRIBUTORS
SAN FRANCISCO, OAKLAND, SACRAMENTO, LOS ANGELES, CAL. U.S.A.

pre- and post-operative conditions
pre- and post-partum conditions
infectious diseases
hyperacid stomach conditions
headache, due to high acidity
headache, due to brain oedema
skin conditions
genito-urinary infection
edema—local or general nephritis
diabetes
asthma and hay-fever
arterio-sclerosis
cyclic vomiting
alcoholism
typhoid bacilli
children and in infantile diarrhoea.

At All Druggists

Grageroff & Papazoni

Laboratory of Clinical Pathology

Referred Work Only

222-225 Black Building
Fourth and Hill Streets
LOS ANGELES, CALIF.

Phone Pico 3778

Silver-Salvarsan

(SILVER-ARSPHENAMINE-METZ)

The sodium salt of silver-diamino-dihydroxy-arsenobenzene

RELATIVE infrequency of reaction, rapid disappearance of contagious lesions, and general therapeutic effectiveness seem to indicate that Silver-Salvarsan is a drug of real value in the treatment of syphilis.

Silver-Salvarsan requires no alkalization and its ease of administration commends it to many practitioners.

More than two million injections of Silver-Salvarsan have been given in the United States and abroad.

HAMETZ LABORATORIES, Inc.
One-Twenty-Two Hudson Street, New York

Bio. 16. 1000 units.
 Bio. 18. 3000 units.
 Bio. 20. 5000 units.
 Bio. 22. 10000 units.
 Bio. 23. 20000 units.



Why Diphtheria Antitoxin, P. D. & Co.?

IN the Diphtheria Antitoxin prepared by Parke, Davis & Company the total solids have been reduced to a minimum. The non-essential proteins have been removed. The product is very highly concentrated.

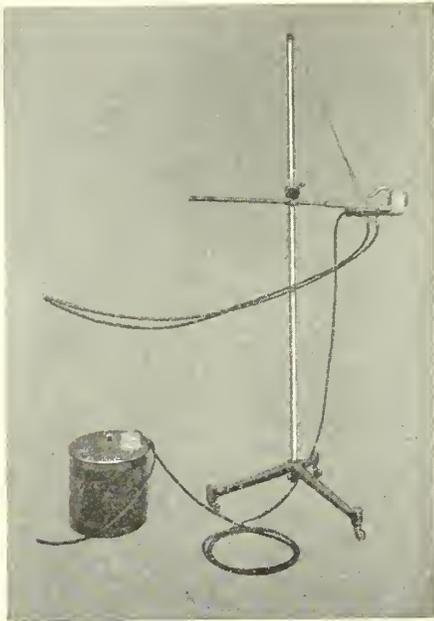
What does this mean to the physician?

It means that the possibility of severe anaphylactic reactions is practically elim-

inated. It means that absorption is hastened.

When large doses are to be employed, the necessity for such a highly concentrated product is all the more apparent. In Diphtheria Antitoxin, P. D. & Co., the physician has a high-potency antitoxin which permits the injection of an adequate number of antitoxic units in small bulk.

Parke, Davis & Company



THE KROMAYER LAMP

Consider—

that the Kromayer lamp enjoys the distinction for highest intensity of Ultra-Violet radiation and the most practical means for administering treatment of many conditions.

The effective results obtained with its use over a period of ten years has been the stimulant for our scientific research work that has resulted in bringing the lamp to its present high state of efficiency.

It is chosen as the most desirable method of applying actinic rays to Lupus, Naevus, Acne, Psoriasis, Eczema, Ulcers and Wounds; to specific or non-specific orificial inflammatory conditions such as Tubercular Laryngitis, Rectal Fistulae, Otitis Media, Frontal Sinus Infections, Ozena and a number of gynecological conditions.

Write for interesting illustrative booklet

Hanovia Chemical & Mfg. Co.

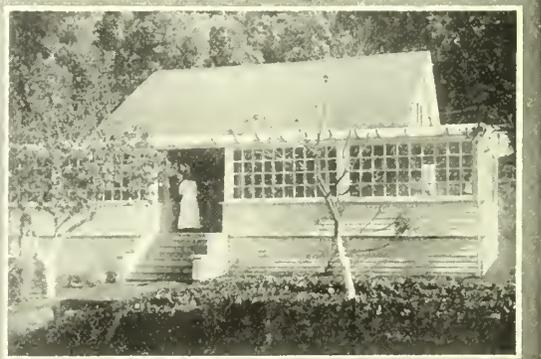
San Francisco, Cal.

Executive Offices: - - - Newark, N. J.

ALEXANDER SANATORIUM

BELMONT, CALIFORNIA

A Place for the Treatment of Nervous and Mild Mental Diseases



22 MILES FROM SAN FRANCISCO

Situated in the beautiful foothills of Belmont on Half Moon Bay Boulevard. The grounds consist of seven acres studded with live oaks and blooming shrubbery.

Rooms with or without baths, suite, sleeping porches and other home comforts as well as individual attention, and good nursing.

ADDRESS

FINE CLIMATE YEAR AROUND

Best of food, most of which is grown in our garden, combined with a fine dairy and poultry plant. Excellent opportunity for outdoor recreation—wooded hillsides, trees and flowers the year around.

Just the place for the overworked, nervous, and convalescent. Number of patients limited. Physician in attendance.

Phone Belmont 21

ALEXANDER SANATORIUM Box 27, BELMONT, CALIF.

THE OAKS SANITARIUM

A moderately priced institution for the scientific treatment of tuberculosis
LOS GATOS, CALIFORNIA



Avenue of Open-Air Apartments, Each Containing Sleeping Porch, Dressing Room and Private Bath.

Situated in the foothills of the Santa Cruz mountains, two miles from Los Gatos, Santa Clara County, in proximity to State Highway. Ideal climate. We maintain our own dairy and poultry farm. For particulars and booklet address

WILLIAM C. VOORSANGER, M. D.
Medical Director
Liebes Bldg., 177 Post Street
San Francisco, Cal.
Telephone Douglas 2160

PAUL C. ALEXANDER, M. D.,
Asst. Medical Director
OAKS SANITARIUM, LOS GATOS, CAL.
Telephone Main 173

A BANKING SERVICE

FOR THE

MEDICAL PROFESSION

An Investment Department that can help you solve problems in buying and selling securities.

A Savings Department for your savings and surplus funds.

A Commercial Department for your checking account.

A Trust Department,—the largest in the West,—that can act as executor, trustee or custodian of your properties.

Safe Deposit Vaults for the safekeeping of your valuables.

THIS IS THE COMPLETE BANKING SERVICE THAT WE OFFER YOU.

UNION TRUST COMPANY

COMMERCIAL SAVINGS OF SAN FRANCISCO SAFE DEPOSIT TRUST
MARKET ST. AND GRANT AVE.

ASSISTANTSHIP WANTED

Recent graduate from Class "A" College, B. S., M. D. degrees, 18 months' internship, who has excellent San Francisco practice, wishes opportunity to assist surgeon, without recompense. Phone Douglas 2534.

Pacific Surgical Gown Co.

Manufacturers of



Operating Gown

Dental Gowns
Operating Gowns
Instrument Rolls
Leg Holders
Cushions for all
Operating Tables

1626 EDDY STREET
San Francisco California
West 2715

Franklin Hospital

14th and Noe Streets



*Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-Ray and
Maternity Departments*

Training School for Nurses

For further information
Address, FRANKLIN HOSPITAL
San Francisco

The James H. Barry Co.

THE STAR PRESS

Printers and Publishers

1122-1124 Mission Street, San Francisco, California
Telephone Park 6380

- ☐ We print the California State Journal of Medicine and specialize in the printing of technical publications.
- ☐ Physicians' and Surgeons' commercial printing given the most careful attention.
- ☐ A telephone call or postal card will bring our representative.

PORTLAND CONVALESCENT HOSPITAL
862 Marshall St.



Miss Elva Hill, Superintendent

PORTLAND SURGICAL HOSPITAL
611 Lovejoy St.



Mrs. Tom Richardson, Superintendent

Hospitals operated co-ordinately for the Clinic of
Drs. Coffey, Sears, Johnston and Payne

Downtown Offices: 11th Floor, Stevens Building
PORTLAND, OREGON



Introducing
VITA RICE MILK
To the Medical Profession

*Write for
 particulars*

The study of rice culture, and patient experiments by dairy and food experts, have revealed this truth:

**THE RICE KERNEL ENTIRE CONTAINS THE
 PERFECT FLUID FOOD
 FOR THE MOST DELICATE DIGESTIONS**

Cream, with no refuse matter, extracted from the elements by the water roots or milk veins of the Rice plant.
 Liquified and sterilized by the newly discovered natural process, and delivered in all its first purity, is VITA RICE MILK.

VITA RICE PRODUCTS CO.

407 FLATIRON BLDG.

SAN FRANCISCO



VULCAN

**High Frequency
 Treatment Apparatus**

We claim and we can demonstrate that we produce the finest in existence. The only High Frequency apparatus made that will stand up and do the work all day, every day with

NO SPARK GAP TROUBLES

Delivering every known modality in High Frequency currents to perfection.

No moving parts to wear out or get out of order. Beautifully designed and finished — Cabinet or Portable form—three models.

GUARANTEED FIVE YEARS

Literature upon request

VULCAN ELECTRIC COMPANY

1017 E. Ninth St.

Los Angeles, Cal.



PHYSICIANS DIRECTORY



ROBERT M. JONES, M. D.

Announces his removal to
ROOM 814, FLOOD BLDG., SAN FRANCISCO
Phone Sutter 342
Hours: 10 to 12 and 2 to 5
Practice limited to
EYE, EAR, NOSE AND THROAT
and Refraction

Office Phone Douglas 567 Res. Phone West 3721

DR. ETHAN H. SMITH
ORTHOPAEDIC SURGERY
Hours: 2 to 4 p. m.

Mornings and Sundays by appointment
Residence Office
433 D Street 701 PHELAN BLDG.
San Rafael Grant Ave. and Market

Phone Kearny 296

DR. ALFRED C. REED
Practice Limited to

INTERNAL AND TROPICAL MEDICINE
350 POST STREET SAN FRANCISCO

Office Phone Residence Phone
Sutter 5966 Sutter 700

DR. LIONEL D. PRINCE
Practice limited to
ORTHOPEDIC SURGERY

368 FLOOD BUILDING SAN FRANCISCO
Hours: 2 to 4

Office Phone Main 2068

DR. WILLIAM H. KIGER
DISEASES OF RECTUM AND COLON
Hours by appointment

Suite 711-712 Pacific Mutual Bldg.
523 WEST SIXTH ST. LOS ANGELES

Residence Telephone Bayview 962

DR. JOHN ZIEG
ROOM 867 FLOOD BUILDING
Hours: 2 to 4

Telephone Kearny 788
870 MARKET STREET, SAN FRANCISCO, CAL.

Telephones—Office, Kearny 2345
Emergency, West 1400
Hours: 2:30 to 4:30 and by appointment

DR. ARTHUR COLLIS GIBSON
Practice Limited to Diseases of the
EAR, NOSE AND THROAT
Equipped for Oesophagoscopy and Bronchoscopy
OFFICE, 516 SUTTER ST., SAN FRANCISCO

DR. LIONEL A. B. STREET
(Late of Shanghai, China)
Announces the opening of his
Consulting Rooms
Suite 1023 Pacific Mutual Bldg.
523 W. SIXTH ST. LOS ANGELES, CAL.
Hours: 2 to 4 P. M.
Residence 621 South Virgil Avenue
Telephone Wiltshire 6109
August first 1921 Office Phone 15626

Phone Oakland 5809

DR. N. AUSTIN CARY
Practice Limited to
ORTHOPEDIC SURGERY
304 Federal Realty Bldg. OAKLAND, CAL.

Office Phone Residence Phone
Doug. 4486 Fillmore 5537

DR. RALPH B. SCHEIER
DISEASES OF THE LUNGS
Hours by Appointment
FLOOD BUILDING SAN FRANCISCO

WALTER SCOTT FRANKLIN, M. D.

FREDERICK C. CORDES, M. D.

WARREN D. HORNER, M. D.

OPHTHALMOLOGISTS

824 BUTLER BLDG., SAN FRANCISCO

JAMES H. MCKELLAR, M. D.

HERBERT L. THOMPSON, M. D.

Ophthalmology, including Refraction
618 Title Insurance Bldg., Los Angeles

503 Long Beach Bank Bldg., Long Beach

Phone 667-72 Appointment
If no answer, call Only
607-29 or Main 7675

DR. DON P. FLAGG

MEDICAL PSYCHOLOGIST

Neurology and Psychiatry, Nervous Children
406 AUDITORIUM BLDG., LOS ANGELES, CAL.
5th and Olive Sts.

Wishes to announce the opening of a laboratory
for vocational guidance, fitness for occupation
determined by psychological, nervous and mental
tests.

Office—Douglas 6440 Res.—Sunset 934

DR. GEORGE WARREN PIERCE
PLASTIC SURGERY
Hours: 1:30 to 3 p. m. and by appointment
1211 Flood Building San Francisco

DR. KASPAR PISCHEL

DR. HAROLD A. FLETCHER

EYE, EAR, NOSE AND THROAT

Bronchoscopy, Esophagoscopy
Neuro-otological Examinations

804 Butler Bldg., Stockton and Geary Sts.,
San Francisco



PHYSICIANS DIRECTORY


DR. HARRY SPIRO

Practice Limited to

CARDIO-VASCULAR DISEASES

300 COLESON BLDG. 212 STOCKTON ST.
San Francisco
Phone Garfield 22

Phone 587-J

DR. FRANCIS B. SHELDONDIAGNOSTIC AND THERAPEUTIC
X-RAY

Hours: 9 to 12 and 2 to 5

Sunday by appointment only

1014-16 MATTEI BLDG. FRESNO, CAL.

W. B. KERN, M. D.

Recent Medical Superintendent, Norwalk (Cal.)
State Hospital, and previously Medical Superin-
tendent Nebraska State Hospital for the Insane,
Ingleside, Hastings, Nebraska. Practice limited to

NERVOUS AND MENTAL DISEASES

Sanitarium Accommodations

Offices, 620 Brockman Bldg., Los Angeles, Cal.

DR. C. RENZ

Announces that he will resume his practice on
October 1, 1921, at

1059 Flood Bldg., San Francisco

Practice limited to psychiatry and the treatment
of psychoneuroses. Hours by appointment.

Phone Sutter 186

DR. LOUIS CLIVE JACOBS

Practice Limited to

UROLOGY

456-462 Flood Building San Francisco

Phone 65366

DR. A. GOTTLIEB

Practice Limited to

ORTHOPEDIC SURGERY

605 Consolidated Realty Bldg. Los Angeles

DR. JAMES A. GUILFOIL

Practice limited to

GASTRO-ENTEROLOGY

611 Medical Building Bush and Hyde Sts.
San Francisco

Phone Prospect 344 Hours by appointment

Hours 12 to 2

DR. W. F. McNUTT, SR.

Practice limited to

RHEUMATISM, GOUT, SCIATICA

Residence
2440 Washington St.

Office
Butler Building

ARE YOU PROTECTED?

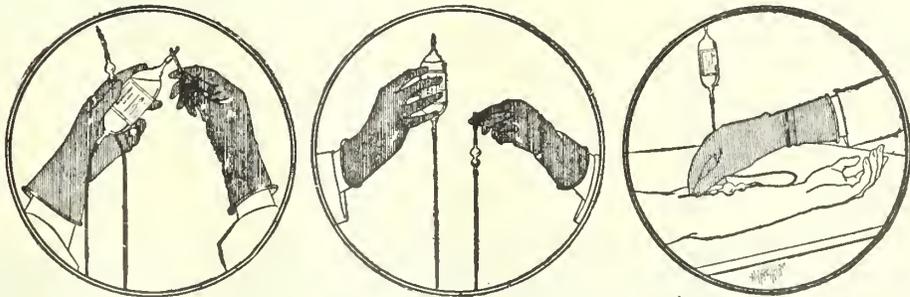
Records of insurance companies and state societies show that many doctors are being sued for malpractice, and larger verdicts are being recovered against doctors. If you are not insured, join the fund; if you are insured, join the fund. Protect yourself and your family by mailing your check for \$15.00 today to DR. W. E. MUSGRAVE, Secretary, Butler Bldg., San Francisco, Cal.

THE complicated technic incident to the preparation of solutions of Arsphenamine with the attendant danger of improper alkalization as well as the rapidity with which the Arsphenamine oxidizes and forms toxic compounds during the preparation of the solution, make it apparent that the widespread use of this product is dependent upon the development of a safe and ready-to-use solution.

The Squibb Laboratories therefore take pleasure in announcing that they have ready for distribution

Solution Arsphenamine Squibb

Prepared according to the process devised by Dr. Otto Lowy; licensed by the U. S. Public Health Service and approved by the Council on Pharmacy and Chemistry of the American Medical Association.



READY FOR IMMEDIATE USE.

Solution Arsphenamine Squibb offers the advantages of accuracy in preparation, perfect alkalization, and safety in use.

It avoids the danger of oxidation with the consequent formation of toxic oxidation products, and it eliminates the necessity for costly apparatus and the loss of time spent in preparing solutions.

Solution Arsphenamine Squibb is a scientifically prepared solution of Arsphenamine. It is in no sense a substitute for Arsphenamine.

Solution Arsphenamine Squibb is marketed in 80 Cc. and 120 Cc. ampuls with all necessary attachments, ready for administration.

E. R. SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

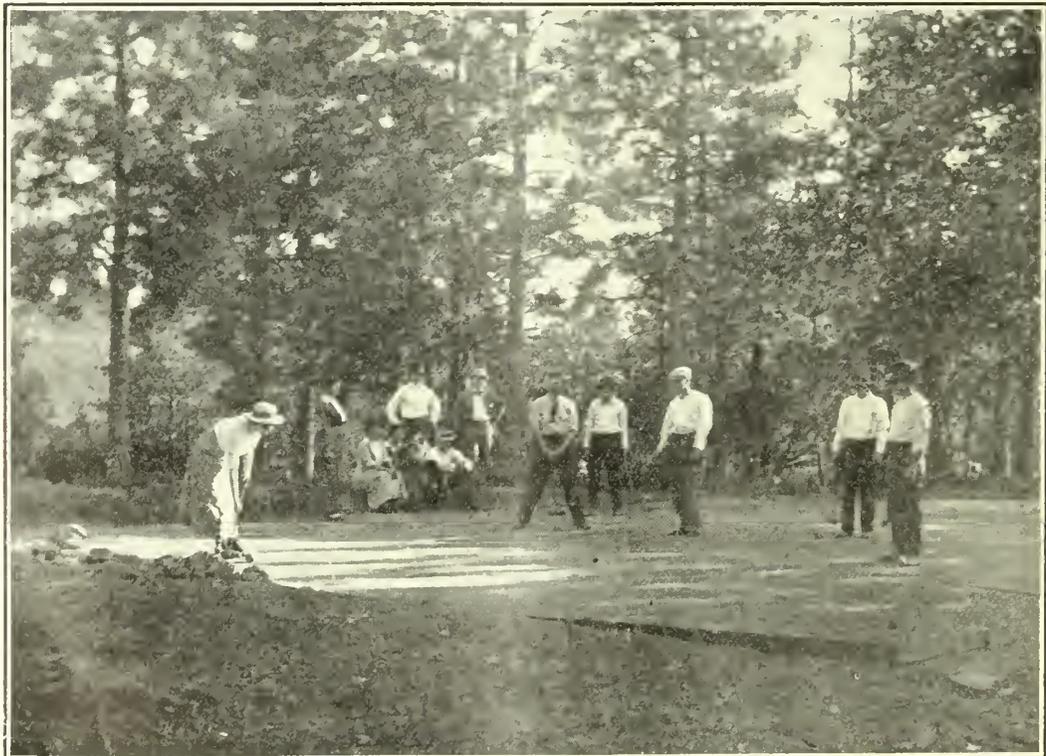
The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

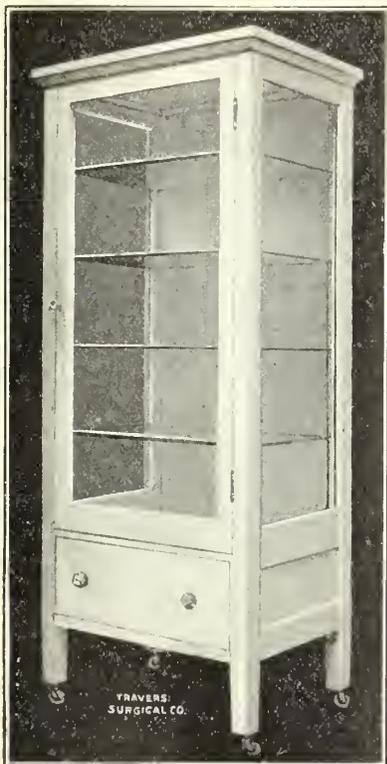
Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director

Colfax, California





Size—60 in. high, 25 in. wide, 18 in. deep

Attention

This Beautiful Instrument Cabinet, finished in White Enamel, has four Polished Plate Glass Shelves and large drawer at bottom for dressings and supplies. Cabinet has glass door and sides.

Price \$55.00

Travers Surgical Co.

Physician and Hospital Supplies

Everything Surgical

Phone Sutter 4651

372 SUTTER ST.

SAN FRANCISCO

Strength and Pliability are Found in

Armour's Iodized Sheep Gut Ligatures

which are made from lamb's gut selected in our abattoirs especially for surgical purposes.

The Armour Iodized Ligatures possess full tensile strength and their pliability prevents breakage at the knot. They are iodized to the core and are absolutely sterile. Regular lengths, sizes 00 to number 4 at \$2.50 per dozen.

We also offer Plain and Chromic Ligatures, sizes 000 to number 4 regular lengths \$2.50 per dozen, emergency lengths, \$1.50 per dozen (nothing but the smooth side of the intestine is used in the manufacture of the Armour ligatures).

Suprarenalin Solution, 1:1000 is stable, uniform and free from preservatives.

Pituitary Liquid is physiologically standardized and is ready for hypodermatic use— $\frac{1}{2}$ c. c. ampoules for obstetrical and 1 c. c. ampoules for surgical use.



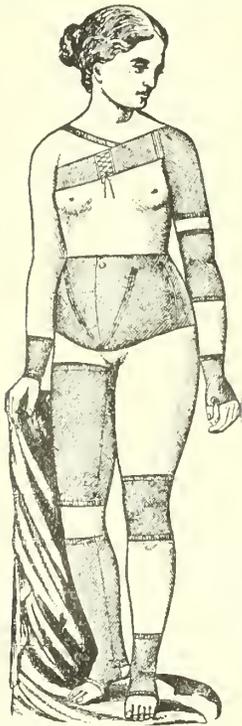
Literature upon the ARMOUR LABORATORY PRODUCTS for the medical profession only.

ARMOUR AND COMPANY
CHICAGO

Headquarters for the endocrines and other organotherapeutic products.

ELASTIC STOCKINGS

FOR
VARICOSE
VEINS



We specialize in the making and fitting of Elastic Hosiery, Abdominal Belts and Trusses. We are the oldest truss and elastic house in the West. Over 40 years' successful business experience.

TRUSSES, \$3.00 up
ELASTIC HOSE, \$2.50 up
Lady Attendant

**Hatteroth's Truss
and Elastic House**

232 POWELL ST.
Bet. Geary and O'Farrell
Second Floor

SAVE MONEY ON YOUR X-RAY SUPPLIES

Get Our Price List and Discounts on
Quantities Before You Purchase

HUNDREDS OF DOCTORS FIND WE SAVE THEM
FROM 10% TO 25% ON X-RAY LABORATORY COSTS

AMONG THE MANY ARTICLES SOLD ARE

- X-RAY PLATES.** Three brands in stock for quick shipment. **PARAGON** Brand, for finest work; **UNIVERSAL** Brand, where price is important.
- X-RAY FILMS.** Duplitzed or double coated—all standard sizes. Eastman, Ilford or X-graph metal backed. Fast or slow emulsion.
- BARIUM SULPHATE.** For stomach work. Finest grade. Low price.
- COOLIDGE X-RAY TUBES.** 5 Styles. 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead Glass Shields for Radiator type.
- DEVELOPING TANKS.** 4 or 6 compartment stone, will end your dark room troubles. 5 sizes of Enameled Steel Tanks.
- DENTAL FILM MOUNTS.** Black or gray cardboard with celluloid window or all celluloid type, one to eleven film openings. Special list and samples on request. Price includes your name and address.
- DEVELOPER CHEMICALS.** Metol, Hydroquinone, Hypo, Prepared Developers, etc.
- INTENSIFYING SCREENS.** Patterson, T-E, or celluloid backed screens. Reduce exposure to one-fourth or less. Double screens for film. All-metal Cassettes.
- LEADED GLOVES AND APRONS.** (New type glove, lower priced.)
- FILING ENVELOPES** with printed X-Ray form. (For used plates.)

Order Direct or Through Your Dealer



IF YOU HAVE A MACHINE GET YOUR
NAME ON OUR MAILING LIST

GEO. W. BRADY & CO.

781 So. Western Ave.

CHICAGO

ALTA SANATORIUM

For the treatment of Pulmonary Tuberculosis

ALTA (PLACER CO.) CALIFORNIA

Invigorating climate. Beautiful scenery
Strict medical attention. Moderate terms

Apply for Particulars

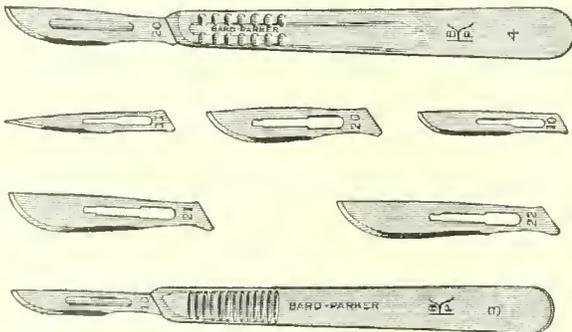
R. G. VAN NUYS, M. D.

P. H. PETCH, M. D.

X-RAY LABORATORY DIAGNOSTIC, THERAPEUTIC

Hutchinson Bldg.,
Oakland, Cal.

Phone
Oakland 9235



MAIL ORDERS FILLED PROMPTLY

Bard Parker

OPERATING KNIVES

Blades \$1.50 the dozen

Handles \$1.00 each

Keniston & Root

PHYSICIANS' SUPPLIES

418 W. 6th St. } & { 1010 10th St.
Los Angeles } & { Sacramento

POTTENGER SANATORIUM*For Diseases of the Lungs and Throat*MONROVIA,
CALIFORNIA

A thoroughly equipped institution for the scientific treatment of tuberculosis.
High-class accommodations.

Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery.
Forty-five minutes from Los Angeles.

F. M. Pottenger, A. M., M. D., LL. D., Medical Director.

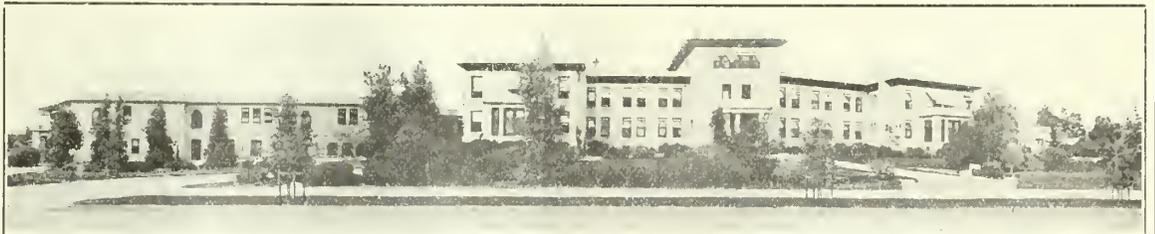
J. E. Pottenger, A. B., M. D., Assistant Medical Director and Chief of Laboratory.

Geo. H. Evans, M. D., San Francisco, Cal., Medical Consultant.

For particulars address:

Los Angeles Office: 1100-1 Title Insurance Bldg.,
Cor. Fifth and Spring Streets

POTTENGER SANATORIUM,
Monrovia, California

**SANTA BARBARA COTTAGE HOSPITAL**

and

TRAINING SCHOOL FOR NURSES

LOCATION, climatic conditions and equipment make this institution of special interest to the public as a place for the care of general Medical and Surgical patients. Its attending staff is thoroughly competent.

METABOLIC DEPT. In a separate wing. A department for the scientific study and treatment of diabetes and other metabolic diseases. Under the direction of Dr. W. D. Sansum. Graduate dietitians and school of dietetics.

ROENTGEN AND RADIUM DEPT. Under the direction of Dr. H. J. Ullmann.

LABORATORIES. In charge of pathologist and five assistants.

RESEARCH DEPT. Cost of research work carried on here last year, \$17,000.

SCHOOL OF NURSING. Offers an excellent training for young women wishing to take up the nursing profession.

F. R. NUZUM, M. D., Medical Director. MISS F. C. JOHNSON, Superintendent.

R. L. SCHERER CO.

623 So. Grand Avenue
Los Angeles, Cal.

Surgical Instruments, Hospital
Supplies, X-Ray Apparatus

Exclusive Agents in California and Arizona
for

WAPPLER ELECTRIC CO.
(Cystoscopes, X-Ray Apparatus and High
Frequency Machines)

AMERICAN STERILIZER CO.
(Pressure Sterilizers)

ROENTGEN APPLIANCE CO.
(Rieber Stabilizers, etc.)

SCANLAN-MORRIS CO.
(White Line Furniture)

W. D. ALLISON CO.
(Physicians' Office Furniture)

Ask for information on the new Rieber Stabilizer and combination fluoroscopic and radiographic unit.

San Francisco Office:
259 GEARY STREET
Wallerstedt & Paul, Managers

Registrars
BELLE EARLEY, R. N.
ALICE R. CHASE, R. N.

Male Nurses

SUTTER CLUB REGISTRY FOR NURSES

Graduate, Undergraduate, Practical and
Visiting Nurses

1656 Divisadero St. San Francisco
Phone Fillmore 4160

PHONE DOUGLAS 6291

Spencer Rejuveno Corsets

Surgical, Dress, Maternity, Sacro-Iliac
Abdominal Belts

305-306—212 Stockton Street
San Francisco

“We Get the Coin” “We Pay”

H. G. Bittleston Law & Collection Agency, Inc.

Citizens National Bank Building

Los Angeles



KENILWORTH SANITARIUM

KENILWORTH, ILL.

Established 1905

C. & N. W. Railway Six miles north of Chicago
Built and equipped for the treatment of
nervous and mental diseases. Approved diag-
nostic and therapeutic methods. An adequate
night nursing service maintained. Sound-proofed
rooms with forced ventilation. Elegant
appointments. Bath rooms en suite, steam
heating, electric lighting, electric elevator.

Resident Medical Staff

Minta P. Kemp, M.D., Assistant Physician
Sherman Brown, M.D., Medical Superintendent
Sanger Brown, M.D., Chief-of-Staff

Consultation by appointment

All correspondence should be addressed to

KENILWORTH SANITARIUM
Kenilworth Illinois



SOUTHERN SIERRAS SANATORIUM

Forty Beds

BANNING, CALIFORNIA

Bungalow Plan

FOR DISEASES OF THE LUNGS AND THROAT



MRS. J. D. RYAN, Owner and Manager

E. W. HAYES, M. D., Medical Director

DOCTORS' SMOCKS,
OPERATING GOWNS and COATS
DENTISTS' JACKETS
NURSES' UNIFORMS

Of All Kinds

READY-MADE OR MADE TO MEASURE

Quality, Work, Fit Guaranteed
SEND FOR CATALOGUE

DOCTORS & NURSES OUTFITTING CO.
A. S. W. GRUNDY

SAN FRANCISCO
970 Sutter Street, Phone Franklin 8338
944 Hyde Street, Phone Franklin 3946

OAKLAND
2213-2215 Broadway, Tel. Oakland 1902
Next Key Route Inn

FRESNO
1835 Merced Street, Phone Fresno 5720
Opposite Hotel Fresno

San Francisco Polyclinic and Post Graduate School

On December 31, 1921, the following
assistantships will become open:

Assistant in Medical Clinic
Assistant in Eye Clinic
Assistant in Neurologic Clinic
Assistant in Orthopedic Clinic
Assistant in Obstetrical Clinic

Applications for above assistantships
for 1922 should be filed at once with

Dr. H. A. L. RYFKOGEL
516 Sutter Street
San Francisco



St. Francis Hospital and Training School for Nurses

N. E. CORNER BUSH AND HYDE STREETS
SAN FRANCISCO

Accommodations for 175 Patients

Five Operating Rooms
Every Modern Appliance

Board of Trustees

JOHN GRAVES, M. D.
B. A. MARDIS, M. D.

WALTER B. COFFEY, M. D.
W. W. WYMORE, M. D.
MALCOLM O. AUSTIN, M. D.

JOHN GALLWEY, M. D.
THOS. E. SHUMATE, M. D.

\$25 Mattress From Factory

Pure kapoc silk floss mattress, 40 lb. weight, made with good old-fashioned ticking. Satisfaction guaranteed or your money back. **\$17.50**

ALSO HOSPITAL BEDS AND BED APPLIANCES AT FACTORY PRICES

Ewd. L. McRoskey TELEPHONE PARK 4533
THE RETAIL MATTRESS FACTORY

1506 MARKET ST., at VAN NESS AVE.

Alfred I. Coffey
 ARCHITECT

312-314 Humboldt Bank Bldg.
 San Francisco, Cal.

Hospital Construction
 a Specialty



Architect Saint Francis Hospital,
 San Francisco, Cal.



**Dickson-Bull
 Artificial Limbs**

Known Everywhere
 Surgical Belts and
 Orthopedic Appliances
 For Every Requirement
 Surgeons Assured
 Co-operative Service

2216 Telegraph Avenue
 Near Twenty-second
 FACTORY AND OFFICE
 Oakland, Cal.
 Tel. Oakland 8438



Acidosis

Readily and definitely recognized and estimated by the determination of the alveolar air carbon dioxide tension.

The Alveolar Air Outfit

A diagnostic apparatus, suggested by Dr. W. McKim Marriott, which combines a simple technic with a degree of accuracy sufficient for all diagnoses.

Write for literature

Hynson, Westcott & Dunning

Pharmaceutical Chemists
 Baltimore, Md.

G. E. LAMONT
 PHONE DOUGLAS 5446
 MANUFACTURER OF X-RAY TUBES
 143 SECOND ST. SAN FRANCISCO
 SCIENTIFIC GLASSBLOWING ***

CORONA
The Personal Writing Machine
DOCTORS!
 Save money and avoid mistakes by typing your own bills, case records, prescriptions, manuscripts and correspondence.
 \$50 WITH CASE
Corona Typewriter Co., Inc.
 Phone Sutter 1538
 546 MARKET ST. San Francisco

Alcoholic and Drug Addictions



Park Sanitarium

Corner Masonic Avenue and Page Street
San Francisco

Established by the late Dr. R. E. Bering. This institution has been remodeled to comply with the latest approved method of treatment for alcoholic and drug addictions, as well as psychopathic cases. The patronage of the medical fraternity is solicited. Resident physician in attendance. Graduate nurses only.

Phone Market 8048

Phone Market 331

Cars Nos. 6, 7, and 17

Alcoholic and Drug Addictions—Mental and Nervous Diseases

JOHN M. COOPER

Architect and Consulting Engineer

Specialist in

HOSPITAL DESIGN

Suite 335 Marsh-Strong Building
Los Angeles, Calif.

SPLEEN EXTRACT

(Archibald)

A highly potent physiological adjuvant utilizing the known properties of the Spleen for exalting the body defenses; increasing the number of red cells and all types of leucocytes. Particularly useful in chronic infection, Anemias, Malaria, Tuberculosis.

In 2 c. c. Ambules, physiologically standardized

The Vitalait Laboratory

of California

320 W. Colorado Street - Pasadena
Flood Building - - San Francisco

CALSO WATER

A sparkling, palatable drinking water rich in ALKALI and a positive aid to your therapy.

Try it for one of your patients with acute or chronic nephritis, heart disease, diabetes, the intoxications of pregnancy, or as a prophylactic against the nausea vomiting and headaches following an anaesthesia or an alcoholic excess.

Samples to physicians upon written request

THE CALSO COMPANY

OFFICES

524 Gough Street
San Francisco
Phone Market 2934

931 Maine Street
Vallejo
Phone 546-W

THE CALIFORNIA STATE JOURNAL OF MEDICINE

Butler Bldg., 135 Stockton St., San Francisco,
California Phone Douglas 62

*Subscription prices, including postage, per annum
in advance: Domestic, \$4.00; Canadian, \$5.00.*

Domestic rates include United States, Cuba, Mexico,
Hawaii, Guam, Porto Rico, Canal Zone and Philippine
Islands.

Acceptance for mailing at special rate of postage pro-
vided for in Section 1103, Act of October 3, 1917,
authorized August 10, 1918.

SINGLE COPIES of this calendar year, 50 cents.

REMITTANCES should be made by check, draft, reg-
istered letter, money or express order. Currency should
not be sent unless the letter is registered. Stamps in
amounts under one dollar are acceptable. Make all
checks, etc., payable to "Medical Society, State of Cali-
fornia."

VOLUMES begin with the first of January. Subscrip-
tions may commence at any time.

CHANGE OF ADDRESS notice should give both the
old and the new address, and state whether the change
is permanent or temporary. The change notice must
reach us ten days in advance of the date of the issue
which is to be forwarded to the new address.

WARNING: Pay no money to an agent unless he pre-
sents a letter showing authority for making collection.

ADVERTISEMENTS.

Advertising forms go to press fifteen days in advance
of the date of issue. In sending in copy time must be
allowed for setting up advertisements and for sending
proofs. No proprietary medicines can be advertised un-
til approved by the Council on Pharmacy and Chemis-
try. Advertising rates will be sent on request.

CONTRIBUTIONS.

EXCLUSIVE PUBLICATION: Articles are accepted
for publication on condition that they are contributed
solely to this journal.

CONTRIBUTIONS TYPEWRITTEN: Authors must
have their contributions typewritten—double-spaced and
with ample margins—before submitting them. The ex-
pense is small to the author—the satisfaction is great
to the editor and printer. We cannot promise to re-
turn unused manuscript, but try to do so in every in-
stance. Manuscript should not be rolled.

ILLUSTRATIONS: Half-tones and zinc etchings, if
necessary to elucidate the text, will be furnished by
The Journal when satisfactory photographs or drawings
are supplied by the author. Each illustration, table,
etc., should bear the author's name on the back. Pho-
tographs should be clear and distinct; drawings should
be made in black ink on white paper. While we can-
not guarantee to return used photographs and drawings,
we use our best endeavors to do so after the article is
published, if the word "return" is written on the back
of each.

ANONYMOUS CONTRIBUTIONS, whether for publi-
cation, for information, or in the way of criticism, are
consigned to the wastebasket unread.

NEWS: Our readers are requested to send us items
of news of a medical nature, also marked copies of
local newspapers containing matters of interest to
physicians. We shall be glad to know the name of
the sender in every instance.

Prescribe

"Horlick's"

the Original and Genuine

Endorsed by the medical
profession, who for over a
third of a century have
proven its reliability in the
feeding of infants, nursing
mothers, convalescents, and
the aged.

Samples prepaid upon request

Horlick's Malted Milk Co.

Racine, Wisconsin

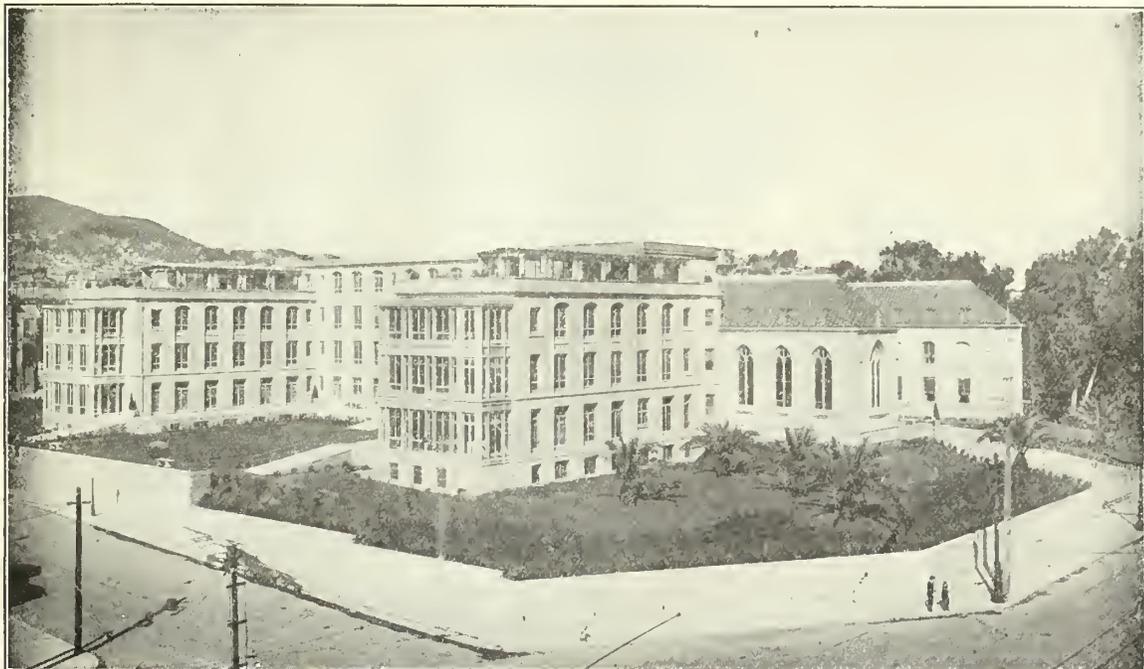
WM. H. WEEKS

Architect

75 POST
STREET

SAN
FRANCISCO

Largest Architectural Organization in
the West Specializing in Hospitals
and Public Buildings

ST. LUKE'S HOSPITAL27th AND VALENCIA STREETS
SAN FRANCISCO, CAL.**THE PUBLIC SERVICE STAFF**

General Surgery—Alanson Weeks, M. D.; A. R. Kilgore, B. S., M. D. **Orthopedic Surgery**—G. J. McChesney, A. B., M. D. **Urology**—W. P. Willard, M. D.; H. Partridge, M. D.; **Ophthalmology**—E. F. Glaser, M. D.; G. S. Wrinkle, M. D. **Otorhinolaryngology**—H. A. Fletcher, B. S., M. D.; K. Pischel, M. D. **Anesthesiology**—E. A. Leavitt, M. D.; Zilda Pettis, M. D. **General Medicine**—E. S. Kilgore, B. S., M. D.; **Neuropsychiatry**—H. W. Wright, M. D. **Dermatology**—B. Stone, M. D. **Pediatrics**—L. J. Schermerhorn, M. I. **Obstetrics and Gynecology**—W. G. Moore, M. D.; Armstrong Taylor, M. D.; W. H. Hill, M. D. **Pathology**—E. V. Knapp, M. D.; H. E. Foster, M. D. **Roentgenology**—J. H. Rehfish, A. B., M. D. **Radiology**—L. Taussig, A. B., M. D.

LOUIS F. MONTEAGLE, President
WM. R. DORR, M. D., Superintendent

VEN. J. A. EMERY, Secretary and Treasurer
W. H. HILL, M. D., Resident Physician

Sherman's Polyvalent Vaccines in Respiratory Infections

A more adequate and rapid immunity is established with polyvalent vaccines than from an infection itself. SHERMAN'S POLYVALENT VACCINES WHEN GIVEN EARLY IN RESPIRATORY INFECTIONS, rapidly stimulate the metabolism and defense of the body with a resultant prompt recovery.

Administered in advanced cases of respiratory infections, they usually ameliorate or abbreviate the course of the disease. Even when used as the last desperate expedient they often reverse unfavorable prognoses. SUCCESSFUL IMMUNOLOGISTS MAKE INOCULATIONS IN RESPIRATORY INFECTIONS AT THEIR FIRST CALL.

Hay fever, colds, laryngitis, pharyngitis, adenitis, catarrh, asthma, bronchitis, pneumonia, whooping cough and influenza are diseases amenable to bacterial vaccines.

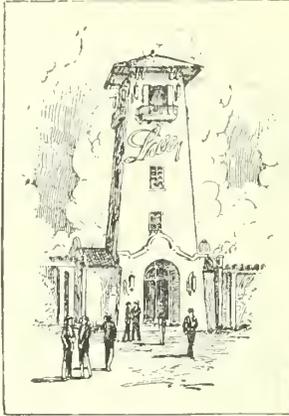
Sherman's polyvalent vaccines are dependable antigens

Local Agent:

BOWERMAN'S PHARMACY, PRESCRIPTION PHARMACY

LABORATORIES OF
G. H. SHERMAN, M. D.
Detroit, U. S. A.

"Largest producer of stock and autogenous vaccines"



THE TOWER
LILLY BIOLOGICAL
LABORATORIES

YOU can meet emergency calls for Diphtheria Antitoxin with confidence and assurance if you carry with you the Lilly Antitoxin Syringe Package. Simple in construction, dependable in action, it combines convenience and utility to a high degree. The product itself is of small bulk, high potency and low solid content, carefully tested, accurately standardized.

Properly stored Smallpox Vaccine Virus, Lilly, will give you maximum "takes" in primary vaccinations.

Your druggist can supply you.

ELI LILLY & COMPANY
INDIANAPOLIS, U. S. A.



Infant Feeding

Diet Materials

MEAD'S DEXTRI-MALTOSE FOR INFANTS ON PRESCRIPTION

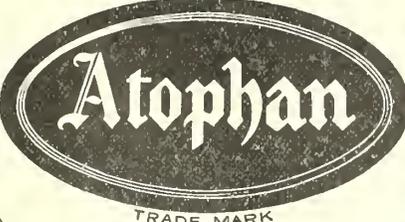
MEAD'S DEXTRI-MALTOSE is prepared to aid the physicians in the scientific regulation of the infants' dietary.

So that each problem may be worked out individually as it should be, the Mead Johnson selling policy is such that directions must come from physicians. MEAD'S DEXTRI-MALTOSE, therefore, is sold as a prescription product. It is advertised only to physicians, and trade packages carry no directions for feeding. It is the physician's prescription blank that tells the mother how to use MEAD'S DEXTRI-MALTOSE (Dextrins and Maltose). She is encouraged to report back to the doctor's office from time to time for further directions. The advantage of using MEAD'S DEXTRI-MALTOSE, cow's milk and water, plus the doctor's intelligent regulation of the formula, will be explained in literature, which we will be very glad to send you. Please write for Samples and Literature before you forget it.

THE MEAD JOHNSON POLICY

Mead's Infant Diet Materials are advertised only to physicians. No feeding directions accompany trade packages. Information regarding their use reaches the mother only by written instructions from her doctor on his own private prescription blank.

MEAD JOHNSON & COMPANY
EVANSVILLE INDIANA, U.S.A.



Atophan
TRADE MARK

Not a "hit and miss" relief of pain and congestion at the expense of the heart, kidneys, intestines and nervous system. like in the old-time coal-tar derivatives.

Information, Literature and Ample Trial Quantity from

But the promptest and most reliable analgesic and decongestive action so far known, with notable freedom from heart depressant, kidney-irritant, constipating and cumulative toxic by-effects.

SCHERING & GLATZ, INC.
150 Maiden Lane, New York



NEURALGIA – NEURITIS
LUMBAGO – SCIATICA

PASO ROBLES HOT SPRINGS

PASO ROBLES, CALIFORNIA

OPEN ALL YEAR

CLIMATE IDEAL



AMERICA'S WONDERFUL WATERING PLACE

A beautiful health resort midway between San Francisco and Los Angeles on the Coast Highway and S. P. Railroad. Spacious grounds, Sporty Golf Links, Radio active mud and Sulphur baths. Thoroughly equipped to produce elimination without exhaustion.

Send for illustrated folder

G. W. TAPE, M. D., Manager.

Las Encinas

Pasadena,
California

A SANITARIUM FOR THE TREATMENT OF ALL
FORMS OF NERVOUS DISORDERS AND
GENERAL DISEASES

SIXTEEN MILES FROM LOS ANGELES
HEART OF THE ORANGE BELT

LOCATION—Situated in the foothills of the Sierra Madre Mountains, just outside of the city of Pasadena, is this beautiful sanitarium. It is surrounded by a natural live-oak grove of 20 acres, with lawns and gardens, ideally adapted to rest and enjoyment. Large central building and cottages all modernly equipped. Homelike and comfortable.

CLIMATE IDEAL, CUISINE EXCELLENT, OUTDOOR SPORTS
AND RECREATION, DAIRY AND POULTRY PLANT,
ROOMS WITH OR WITHOUT BATHS
PRIVATE BUNGALOWS WITH SLEEPING PORCHES

EQUIPMENT—Special equipment for aiding in a correct diagnosis. The Laboratory, Hydrotherapy and Electricity Departments are important adjuncts to the general Sanitarium treatment. All forms of baths are given, including the famous Nauheim.

CLASS OF PATIENTS—All forms of nervous disorders and general diseases are treated. Special attention is paid to Gastro-Intestinal disorders and Circulatory System. No Tuberculosis, Epilepsy or Insanity received.
BOARD OF DIRECTORS—Norman Bridge, M. D., H. C. Brainerd, M. D., W. Jarvis Barlow, M. D., F. C. E. Mattison, M. D., Stephen Smith, M. D.

WRITE FOR BEAUTIFUL ILLUSTRATED BOOKLET

Phone Fair Oaks 901

STEPHEN SMITH, Medical Director,
Las Encinas, Pasadena, Cal.

Dr. King's Sanatorium

(THE BANNING SANATORIUM)

Banning (Riverside County) California

This well known institution (for the treatment of tuberculosis of the throat and chest) has recently been rebuilt and enlarged. The City of Banning (suffering from phthisiophobia) passed a "zoning" ordinance that forced abandonment of the former site of this sanatorium. A new site was purchased. An injunction was sought to prevent the use of the new site for sanatorium purposes. A temporary injunction was granted but, at the final hearing, this injunction was dissolved and the right to build and maintain the sanatorium was established. Many of the most prominent physicians in the state contributed testimony that enabled us to win the suit. During the progress of these suits the institution found it difficult to provide for patients demanding admission. Now, however, in its new quarters, it is prepared to accept all who apply. To physicians who are unfamiliar with our work we will gladly furnish references to other physicians (in almost every town in California) who have had patients or relatives in this institution. A circular describing conditions and containing rates will be mailed upon request. Address

DRS. KING and BRAMKAMP.

BANNING, CALIFORNIA.

Phone Sutter 2540

FRANKLIN W. McCORMACK
RADIOGRAPHER

Referred Cases Only

318 HOWARD BLDG. 209 POST STREET
San Francisco

Member California Association of Radiographers

Widemann's Evaporated Goat Milk



Baby
Baughman

Thousands of Infants could be saved by feeding on goat's milk instead of cow's. On sale at all the leading drug stores at 30c per 11-ounce can.

WIDEMANN GOAT MILK COMPANY,
San Francisco, Cal.

Phone Park 7840

FRANK S. SEXTON

Representing American Institute of Medicine
400 Journals Abstracted Monthly

59 Woodland Avenue San Francisco

"Spring Acres"

2747 Fruitvale Avenue
Oakland . . . California

EXCLUSIVELY FOR THE CARE
OF TUBERCULAR PATIENTS

Privacy, individual service, homelike comforts and amusements are featured for all patients. Patients select their own physicians

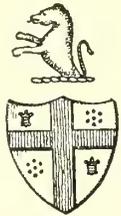
Rates \$25.00 per week and up

Mrs. L. E. Everson: Fruitvale 42



WE CARRY A COMPLETE STOCK
 FURNITURE - SURGICAL INSTRUMENTS
 GLASSWARE - ENAMELWARE
 LABORATORY SUPPLIES
 MICROSCOPES - VIBRATORS
 HIGH FREQUENCY OUTFITS, ETC.
 DISTRIBUTORS OF
 PERFECTION BRAND - SURGEONS'
 GLOVES - CATGUT - THERMOMETERS
 Write Us For Prices

Bischoff's Surgical House
 (The House of Service)
 Oakland, California



SPECIALIZING IN
 OCULISTS' PRESCRIPTIONS
 SINCE 1909

John J. Wooster Co
Opticians
 234 Stockton St. At Union Square

FRESNO BIOLOGICAL DEPOT
 412 Bank of Italy Bldg.
 Fresno, California

Phone 1434 Night 3083-W

San Joaquin Valley Distributors
 Cutter's Biologics
 Metz Products. Steripules
 Travers Surgical Instruments
 Office and Hospital Equipment

The Laboratories of
REED & CARRICK
 Are Devoted to Making

Organic Physiological Products

Full particulars concerning these and answers to all queries will be gladly given.
 Please remember that in writing to **REED & CARRICK** you will be answered by medical men thoroughly trained in hospital work and practice and not by theoretic laboratory workers.

REED & CARRICK
 42-44-46 Germania Avenue
 Jersey City, N. J.



RADIUM

AND

ONCOLOGIC INSTITUTE



1151 WEST SIXTH STREET
LOS ANGELES



A THOROUGHLY EQUIPPED INSTITUTION affording unexcelled facilities for the scientific administration of Radium Therapy and the study and treatment of Neoplastic diseases.

THE NEW AND MODERN FIREPROOF BUILDING contains private rooms for bed and ambulatory cases, completely equipped examination and treatment rooms, Roentgen Ray, clinical and research laboratories.

THE RADIUM LABORATORY, in addition to a large and adequate quantity of Radium, is equipped with a Duane emanation apparatus and all necessary appliances, affording the most modern and complete facilities for Radium Therapy.

THIS INSTITUTION, substantially endowed, is in its equipment and capacity equal to any other in this country, and is the largest and most complete in the United States, devoted exclusively to this work.

WE DESIRE TO CONFER and cooperate with the medical profession regarding the use of Radium in appropriate cases.

*For consultation
and detailed information,
address*

REX DUNCAN, M.D.
Medical Director

DIRECTLY and INDIRECTLY
Liquid Peptonoids

IS AN IMPORTANT NUTRITIONAL AID IN THE SICK ROOM

DIRECTLY

BECAUSE it is acceptable when all other food is rejected *and* offers immediately available nitrogen *and* calories—in sufficient amounts to be *of* real importance in emergency feeding—THEREBY saving tissue waste *and* preventing collapse.

INDIRECTLY

BECAUSE it sets the digestive pendulum in motion, kindles the appetite *and* creates food tolerance—THUS speeding the moment when more substantial nourishment may be added to the dietary.

Also DRY PEPTONIDS (Soluble). 40% Protein—51.5% Carbohydrate.

THE ARLINGTON CHEMICAL COMPANY
 YONKERS, N. Y.

RADIUM
 STANDARD CHEMICAL CO.

RADIUM of highest purity
 in any quantity.

Patented glazed plaques
for superficial conditions.

Tube and needle applicators
for deep therapy.

Apparatus for radium emanation
installed by our Dept. of Physics.

All our applicators and appar-

atus adopted after having been
 proven therapeutically practicable.

U. S. Bureau of Standards
 Certificate.

Our Departments of Physics
 and Medicine give instruction
 in the physics and therapeutic
 application of Radium.

RADIUM CHEMICAL CO.
 PITTSBURGH, PA.

BOSTON
 Little Building

CHICAGO
 Marshall Field Annex Building

SAN FRANCISCO
 Flood Building

Astor Trust Bldg NEW YORK Fifth Av. & 42 St.

Walters Surgical Company

"Service and Dependability"

441 Sutter Street

Between Powell and Stockton Streets

Phone Douglas 4017

High Grade Surgical Instruments and Supplies

Trusses---Abdominal Supporters
Elastic Hosiery

We have no clearance sales. Our stock is up-to-date and our regular prices compare with other so-called "cut prices."

Our Illustrated Surgical Instrument Catalogue
Free Upon Request

WE STRIVE TO PLEASE BOTH
PHYSICIAN AND PATIENT

BEST DRUGS
SHUMATE'S PHARMACIES
SPECIALTY PRESCRIPTIONS
14 DEPENDABLE STORES 14
SAN FRANCISCO

A. BERBERT & BRO.

Manufacturers of

Surgical Instruments
ORTHOPEDIC APPLIANCES

Trusses, Elastic Hosiery, Etc.

Phone Garfield 2272

436 Powell Street

Between Post and Sutter Streets
SAN FRANCISCO

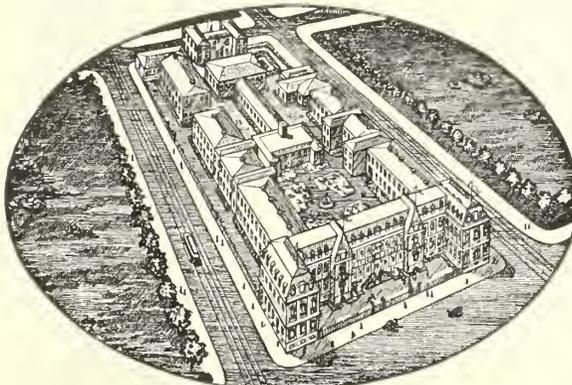
FRENCH HOSPITAL

(Operated by the French Mutual Benevolent Society)

GEARY STREET, BETWEEN FIFTH AND SIXTH AVENUES

Main Office: 110 Sutter Street, San Francisco, Calif.

GENERAL
HOSPITAL



IDEAL
LOCATION

The French Hospital wishes to extend its Greetings to the MEMBERS OF THE CALIFORNIA STATE MEDICAL ASSOCIATION and the Medical Profession at large, and offers the best treatment and care to their patients.

UP-TO-DATE EQUIPMENT

HOMELIKE ATMOSPHERE

MODERATE RATES



**BANKSIA PLACE SANITARIUM
FOR NERVOUS AND MENTAL CASES**

Exclusive accommodations, cottages, rooms in suite with private baths. Complete hydrotherapy and electrotherapy. Situated in the beautiful foothills of Hollywood. Open to all reputable physicians. Dr. G. S. HERBERT, Medical Director, 5227 Santa Monica Blvd., Los Angeles, Cal. Phone Holly 586.

Member Federal Reserve System and Associated Savings Banks of San Francisco

THE SAN FRANCISCO SAVINGS AND LOAN SOCIETY

(THE SAN FRANCISCO BANK)

SAVINGS 526 California Street, San Francisco, Cal. COMMERCIAL
MISSION BRANCH, Mission and 21st Sts. PARK-PRESIDIO DISTRICT BRANCH, Clement and 7th Ave.
HAIGHT STREET BRANCH, Haight and Belvedere Streets

JUNE 30, 1921

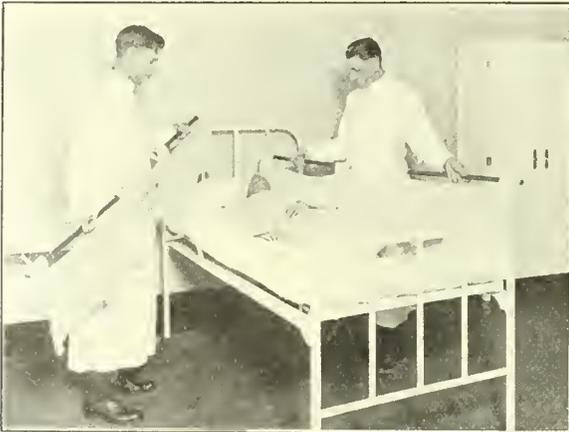
| | | | |
|-------------------------------|-----------------|-------------------------------|----------------|
| Assets | \$71,383,431.14 | Capital Actually Paid Up..... | \$1,000,000.00 |
| Deposits | 67,792,431.14 | Reserve and Contingent Funds | 2,591,000.00 |
| Employees' Pension Fund | \$357,157.85 | | |

OFFICERS

JOHN A. BUCK, President; GEO. TOURNY, Vice-Pres. and Manager; A. H. R. SCHMIDT, Vice-Pres. and Cashier; E. T. KRUSE, Vice-President; A. H. MULLER, Secretary; WM. D. NEWHOUSE, Assistant Secretary; WM. HERRMANN, GEO. SCHAMMEL, G. A. BELCHER, R. A. LAUENSTEIN, H. H. HERZER and H. P. MAYNARD, Asst. Cashiers; C. W. HEYER, Mgr. Mission Branch; W. C. HEYER, Mgr. Park-Presidio District Branch; O. F. PAULSEN, Mgr. Haight Street Branch.

BOARD OF DIRECTORS

John A. Buck, Geo. Tourny, E. T. Kruse, A. H. R. Schmidt, I. N. Walter, Hugh Goodfellow, E. N. Van Bergen, Robert Dollar, L. S. Sherman, E. A. Christenson, Walter A. Haas.
GOODFELLOW, EELLS, MOORE & ORRICK, General Attorneys



DOES NOT DISTURB THE PATIENT

Made in two parts, simply, yet strongly connected, the Gwin-Flex stretcher can be readily removed without disturbing the patient. In many post-operative conditions the use of this stretcher insures not only greater comfort for the patient, but likewise far greater safety.

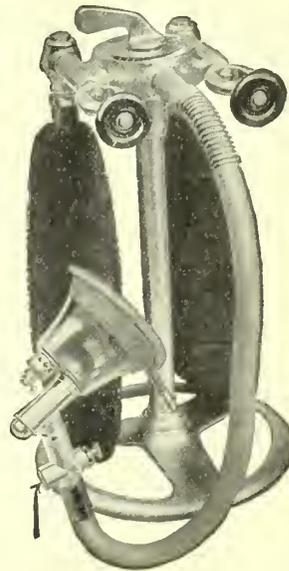
The two parts of the Gwin-Flex Stretcher are held together by a flexible steel tape which is easily removed, enabling both parts of the stretcher to be withdrawn without disturbing the patient. The stretcher is readily sterilized as the handles and tape are removable. The stretcher is extremely strong, although light in weight. Particularly convenient in turning sharp angles and passing through doorways.

May we send you full particulars, together with list of prominent hospitals now using the Gwin-Flex Stretcher?

GWIN-FLEX STRETCHER CO.

Box 954

SAN FRANCISCO, CAL.



THE BABY CLARKE is appropriately named. It is a portable gas outfit which the physician can very well take with him as part of his obstetrical equipment. There is constant and legitimate call from women patients that some of the terrors of obstetrical pain be relieved. It is the common practice now in hospitals to use gas for this purpose. THE BABY CLARKE will render the same service to the obstetrician and may be carried to the patient's home and used there or anywhere else.

The portable apparatus is automatic, and requires no attention in analgesia, also used in minor operations. Most progressive men are using Nitrous Oxid-Oxygen in their Obstetrics.

Write for Literature or Demonstration

We specialize in GAS OUTFITS, small monthly payments

DOCTORS' SUPPLY CO.

948 Market St., San Francisco
PHONE DOUGLAS 2831

We Suggest

INTRAVENOUS ADMINISTRATION

as a safe, rational, quick method for getting the Internal Secretions into the Blood Stream. For impotency, asthenia, premature senility and other conditions resulting from deficient interstitial cell functioning.

Specify Orchic Extract (Wilson's)

Its value has been thoroughly demonstrated by clinical tests. May be administered intramuscularly if preferred. One c.c. ampoules, six per pkg.

Prepared from Abattoir to Finished Ampoule by

"This mark  your guarantee"

4213 SOUTH WESTERN BOULEVARD, CHICAGO, ILL.
Manufacturers of Standardized Animal Derivatives, Ligatures and Digestive Ferments

| | |
|---|---|
| <p>Southern California DR. I. B. LINEBARGER 1000 Lyon St., Los Angeles Phones: Main 5790-Auto 10155</p> | <p>Northern California D. BLAINE MORGAN 84 Second St., San Francisco Phone: Kearny 1416</p> |
|---|---|

Stock carried in both cities

May we place you on our mailing list for "The Autacoid and Suture," our house journal devoted to Glandular Therapy?

Write for Catalog

The VERY BEST MEDICINES

When You Need Them *Most*

There's always a hurry-up need for medicines. "Doctor," when your call is made the benefit of your service really begins when the prescriptions are completed and the patient takes the first dose. For the finest in drugs and drug care all prescriptions should come to us. The best quality the world produces is supplied—the greatest care and the best knowledge put into the compounding. Rapidity is indulged in, but never to the sacrifice of value. All the time necessary to put up prescriptions right and to guarantee them right when they are put up. Send your prescriptions to us—telephone us and we'll send them, or tell your patients to telephone and we'll send to their residence for them.

DELIVERY A SPECIALTY—REMEMBER IT

BUTLER BROTHERS' PHARMACY

PROFESSIONAL PHARMACISTS
Suite 807-9-11 Flood Bldg. Opposite Elevator
Powell and Market Streets, San Francisco, Cal.

Phone: Douglas 163
Private Exchange

TRAINER - PARSONS OPTICAL CO.

Dispensing Opticians

186 GEARY STREET - - - SAN FRANCISCO
Near Stockton. Opp. City of Paris
Telephone Kearny 2767

WALTER V. BREM, M. D.

A. H. ZEILER, M. D.

ROY W. HAMMACK, M. D.

CLINICAL LABORATORY

of

Drs Brem, Zeiler and Hammack**FEE SCHEDULE****BLOOD—**

| | | | | |
|--|--------|-------|---------|---------|
| Leucocyte counts | \$2.00 | } \$3 | } | \$ 5.00 |
| Differential leucocyte counts | 2.00 | | | |
| Red blood counts | 2.00 | | | |
| Hemoglobin determinations | 2.00 | | | |
| Blood cultures | | | | 10.00 |
| Blood smears for blood parasites, as malarial plasmodia | | | | 2.00 |
| Blood group tests | | | | 2.00 |
| Blood Chemistry (sugar, urea nitrogen, non-protein nitrogen, creatinin, uric acid, CO ₂ combining power), single item | | | | 5.00 |
| Each additional item | | | | 2.00 |
| Wassermann test | | | | 5.00 |
| Widal (agglutination) test | | | | 2.00 |
| Coagulation and bleeding times | | | | 5.00 |

URINE—

| | |
|--|------|
| Urinalysis, routine | 2.00 |
| Phenolsulphonephthalein excretion in specimens delivered to laboratory | 3.00 |
| Microscopic examination for tubercle bacilli | 2.00 |
| Bacteriologic examination | 5.00 |

STOOLS—

| | |
|---|-------|
| Microscopic examination of stools | 5.00 |
| Examination of stools for invisible blood | 2.00 |
| Bacteriologic examination for typhoid and dysentery group | 10.00 |

STOMACH CONTENTS—

| | |
|---|------|
| Chemic and microscopic examination of stomach contents sent to the laboratory | 5.00 |
| Test meal and obtaining contents for examination | 5.00 |

SPUTUM—

| | |
|---|-------|
| Microscopic examinations for tubercle bacilli | 2.00 |
| Pneumococcus typing with mouse method | 10.00 |

EXUDATES—

| | |
|---|-------|
| Bacteriologic and microscopic examination of exudates | 5.00 |
| Diphtheria cultures | 2.00 |
| Microscopic examination of smears, as for gonococci | 2.00 |
| Cerebro-spinal fluid examinations for syphilis (Wassermann test, cell count, globulin test) | 5.00 |
| Colloidal Gold test | 5.00 |
| Lumbar punctures | 10.00 |

DARK FIELD EXAMINATION for spirochaetes

5.00

TISSUES—

| | |
|------------------------------------|-------|
| Tissue examination | 10.00 |
| Frozen sections at operation | 15.00 |

VACCINES—BACTERIAL

5.00 to 15.00

WATER—

| | |
|---------------------------------|-------|
| Bacteriologic examination | 10.00 |
|---------------------------------|-------|

MILK—

| | |
|--------------------------|------|
| Chemic examination | 5.00 |
| Bacterial count | 5.00 |

ANIMAL INOCULATION for tubercle bacilli

10.00

BASAL METABOLISM DETERMINATION

15.00

BLOOD TRANSFUSION (not including cost of donors)

50.00 to 100.00

EXAMINATION OF ANIMAL BRAINS FOR RABIES

10.00

ANTI-RABIC TREATMENT, including vaccine material

100.00

OTHER LABORATORY EXAMINATIONS—Fees on request.

INTRAVENOUS and intraspinal therapy (intravenous serum, glucose, salt solution and intraspinal serum)—Fees on request.

CONTAINERS FOR SPECIMENS SUPPLIED ON REQUEST.

MESSENGER SERVICE. Reports telegraphed or telephoned on request.

1003 Pacific Mutual Bldg., Los Angeles, Calif.

TELEPHONE 14235

PICO 3596

CALCREOSE

(Calcium Creosotate)



IN inflammations of the respiratory apparatus, especially in bronchitis, Calcreose has won a place in the therapeutic armamentarium of the physician. It is of value in the treatment of bronchitis associated with pulmonary tuberculosis, because it has creosote effect without untoward action on the stomach, such as nausea, disagreeable eructations and distress.

CALCREOSE can be given in comparatively large doses for long periods of time without any objection on the part of the patient. The indications for CALCREOSE are the same as those for creosote.

Write for literature and samples

THE MALTBIÉ CHEMICAL COMPANY
NEWARK, NEW JERSEY

Diagnosis

X-Ray

Radium

Therapy

Laboratory

Burnett Sanitarium

Fresno, California

For those patients demanding the use of Radium and X-Ray we are in a position to offer to the medical profession the full and unqualified services of our laboratory. This laboratory is equipped with both Radium element and a complete Emanation plant which enables us to construct any application we may desire to fit the given case. To those physicians wishing to make their own application we are prepared to serve with Radium emanation as they may direct.

Address Dr. D. H. Trowbridge,

Secretary Burnett Sanitarium Co.

Western X-Ray & Equipment Co.

423 Hayes Street, San Francisco. Phone Park 5800.

Manufacturers of

- X-Ray and Electro-Medical Apparatus
- X-Ray and High Frequency Coils and Machines
- Interrupterless X-Ray Transformers (Three Sizes)
- Coolidge Tube Transformers and Controls
- Electric Bakers (Limb and Body)
- Ozone Generators—Single, Double and Quadruple
- Electric Light Bath Cabinets with Thermo-Vacuum Space
- Vacuum Electrodes—Glass, Pyrex and Silver Faced

ROENTGENOSCOPES

Vertical, Horizontal and Combination Tube Tilt with Transformer and Coolidge Tube Control for Fluoroscopy

REPAIRING, REBUILDING AND INSTALLING

All of our products are manufactured by us in San Francisco. Send for price lists and descriptive literature

HOURLY NURSING SERVICE

SAN FRANCISCO COUNTY NURSES' CENTRAL DIRECTORY

1155 Pine Street
Telephone: Prospect 66
San Francisco, California

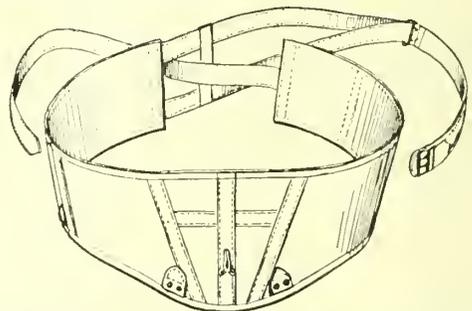
Phone Park 8998

E. H. MARKEL

Orthopedic Appliances

TRUSSES AND ELASTIC HOSIERY

1138 Mission Street Between 7th and 8th
San Francisco, California



ABDOMINAL SUPPORTS TRUSSES ELASTIC HOSIERY

Post-operative, maternity and hernia cases are especially well cared for in a unique and efficient manner. For twenty-one years we have made our business a study, and by confining ourselves to these specialties have developed methods that assure relief to the patient and satisfaction to the doctor.

Every physician should secure a copy of our catalogue, which explains our business in detail. We have the largest and best equipped plant on the Pacific Coast and are the exclusive agents for the famous Drs. Smith's "Honest John" Truss, the only practical device for holding at the internal ring.

TWO ESTABLISHMENTS

Clark-Gandion Truss Co.

Phone Market 7004

Phone Oakland 8652

1108 Market St.
San Francisco

1522 Broadway
Oakland

ANNOUNCING THE OPENING OF
THE BOONSHAFT SANATORIUM
 FOR DISEASES OF THE LUNGS AND THROAT

SAN JOSE, CAL.



IDEAL CLIMATE
 ALL THE YEAR

RATES
 REASONABLE

MAIN BUILDING

A modern institution for the scientific treatment of tuberculosis. Nestled in the East Hills of San Jose surrounded by pine trees, eucalyptus grove and beautiful mountain scenery of Santa Clara Valley. We maintain our own dairy and poultry farm. For particulars address

LOUIS BOONSHAFT, M. D.,
 Medical Director,
 Twohy Bldg., San Jose, Cal.

FLORENCE H. BURKE, R. N.,
 Superintendent,
 San Jose, Cal.

FOR SALE

A complete Biological Laboratory at a sacrifice price

Now installed in a San Francisco office building. Well equipped for production of bacterins, etc.; autoclaves, incubators, centrifuge, shaking machine, sterilizers, inspissator, animals, sinks, Vitrolite tables, complete plumbing for gas, air, hot and cold water, lights, etc., offered far below cost because owner is absorbed in other work. For full information address A. F. Mason, 221 Chronicle Bldg., San Francisco.

SPECIAL COURSE

on the fluoroscopic examination of the heart and aorta, including the use of the cardiac pattern and ortho-cardiogram. Limited to two physicians.

HARRY SPIRO, M. D.

Coleson Bldg.

212 Stockton St.

San Francisco

LABORATORY POSITION WANTED—

By experienced bacteriologist and serologist, B. A. Degree. Two years student Stanford Medical. Experienced Wassermanns, tissue sections, blood chemistry, and all routine laboratory work. Has had full direction of clinical laboratory. Address Miss J., care of California State Journal of Medicine, 930 Butler Building, San Francisco.

WANTED—Two Internes, graduates from Class A school wanted at once or not later than January 1, 1922, in Class A hospital of 250 beds. Excellent chance to learn surgery. Compensation \$75 per month with room and board for those who have had one year's hospital training, or \$35 per month with room and board for those who have not had one year's hospital work. Apply to superintendent, Franklin Hospital, San Francisco.

OCULISTS, ATTENTION — Optometrist offers use of attractively furnished reception room and private office for an oculist either mornings or afternoons. This is a first class proposition and should be particularly attractive to an oculist getting a start. Investigate our offer. Address G., care of California State Journal of Medicine.

L. L. Jones, M. D.

Recent Roentgen Therapist, St. Francis Hospital, San Francisco, and previously in charge X-Ray Department Battle Creek Sanitarium, and assistant in X-Ray Department Mayo Clinic, announces the opening of an office with C. A. Thomas, M.D.

Practice Limited to Roentgen
Diagnosis and Therapy

Drs. Jones and Thomas

233 Post Street

San Francisco

For Determination of the Basal Metabolic Rate

THE SANBORN HANDY METABOLISM APPARATUS



The full clinical accuracy, simple technique and reasonable price of the Handy apparatus make it the instrument of choice for the busy practitioner who, to obtain the greatest service value, must have apparatus of day-in-and-day-out availability.

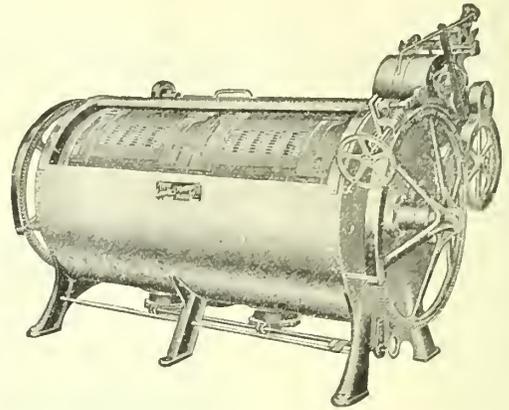
Literature and complete information sent free upon request

SANBORN COMPANY

1048 Commonwealth Ave.

BOSTON 47, MASS.

FOR SALE—In Central California, a fully equipped, modern hospital, eighty miles from San Francisco on State Highway and Southern Pacific R. R. Owner must sell. Address Dr. A. F., care of California State Journal of Medicine.



This Washer Will Save and Satisfy

This No. 115 Solid Head "Rapid" Washer will do its work in less time and with less of every item that enters into the washing process than other machines.

The laundry in which it is in operation will be run more economically and efficiently and turn out better work.

Write for special
circular

Troy Laundry Machinery Company, Ltd.

Sales Offices

LOS ANGELES
450 E. Third St.

SAN FRANCISCO
954-956 Mission Street

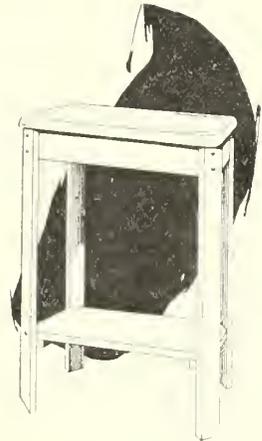
SEATTLE
107 Jackson St.

Factory 23rd and La Salle St.
CHICAGO, ILL.

This White Enamel Table

Special \$6.00

An exceptionally low price on this substantial, attractive and useful table. White baked porcelain top. This table has that immaculate whiteness which contributes so much to the doctor's office.



PERCY J. MEYER & CO.

Devoted to the Service of the Doctor

379 Geary Street

Phone Sutter 3425

Next to Hotel Stewart

The 1920 Record

Amount collected from our members

\$223,225.00
in 1920

Paid for sickness and accident claims

\$145,038.00
in 1920

Saved for future protection of members

\$47,825.00
in 1920

Total returned to members and saved
for future protection

\$192,863.00
in 1920

Expense of operation less than

\$2.30

per member in 1920

This kind of real insurance cost our members \$13.00 for an accident policy paying \$25.00 weekly and \$5000.00 death benefit, or \$26.00 for two such policies, while the health policy, covering any illness beginning thirty days after date of policy, except venereal, epilepsy or insanity, has never exceeded \$17.00 per year.

\$3.00 membership fee will now carry either policy until Mar. 10, 1922

PHYSICIANS CASUALTY ASSOCIATION

PHYSICIANS HEALTH ASSOCIATION

304-12 City National Bldg., Omaha, Neb.

Doctor—

When it comes to duplicating

an offer of

a mail order house

—we can do it

Don't send your money out

of California

before making a comparison

Pacific Surgical Mfg. Co.

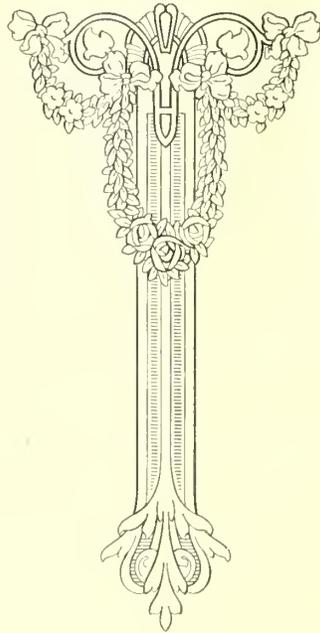
320 W. Sixth Street

Los Angeles

Main 2959

62495

*Patronize the Advertisers
of the
California State Journal of Medicine
They Help to Support Your
Journal*



LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

| Counties. | President. | Secretary. | Meets. |
|--|------------------------------------|---|--|
| Alameda County Medical Association..... | Alvin Powell, Oakland..... | Pauline S. Nusbaumer, 24th and Broadway, Oakland..... | 3rd Monday, Oakland Hotel, Oakland. |
| Butte County Medical Society..... | P. F. Bullington..... | J. O. Chiappella, Chico..... | 2d Thursday |
| Contra Costa County Medical Society..... | M. L. Fernandez, Pinole..... | L. St. John Hely, Richmond..... | Last Wednesday night. |
| Fresno County Medical Society..... | J. R. Walker, Fresno..... | A. D. Ellsworth, Fresno..... | 1st Tuesday. |
| Glenn County Medical Society..... | T. H. Brown, Orland..... | Samuel Igluck, Orland..... | Bi-monthly. |
| Humboldt County Medical Society..... | J. C. Hadley, Arcata..... | L. A. Wing, Eureka..... | 2d Tuesday. |
| Imperial County Medical Society..... | W. W. Apple, El Centro..... | H. W. Owen, El Centro..... | ..... |
| Kern County Medical Society..... | E. S. Fogg, Wasco..... | Joe K. Smith, Bakersfield..... | 3d Monday. |
| Lassen-Plumas County Medical Society..... | W. E. Dozier, Susanville..... | R. W. T. Garner, Susanville..... | ..... |
| Los Angeles County Medical Society..... | Walter Brem, Los Angeles..... | Harlan Shoemaker, Los Angeles..... | 1st & 3d Thursday except July, Aug., Sept. |
| Marin County Medical Society..... | Arthur H. Mays, Sausalito..... | W. F. Jones, San Rafael..... | 2d Thursday each month |
| Mendocino County Medical Society..... | Homer H. Wolfe, Albion..... | O. H. Beckman, Fort Bragg..... | Monthly. |
| Merced County Medical Society..... | E. R. Fountain, Merced..... | Brett Davis, Merced..... | 1st Thursday. |
| Monterey County Medical Society..... | J. A. Beck, Salinas..... | T. C. Edwards, Salinas..... | 1st Saturday. |
| Napa County Medical Society..... | Edward F. Donnelly, Napa..... | Otto T. Schulze, Napa..... | 1st Tuesday. |
| Orange County Medical Association..... | J. H. Lang, Fullerton..... | W. C. Mayes, Santa Ana..... | 1st Tuesday. |
| Placer County Medical Society..... | E. E. Ostrum, Loomis..... | R. A. Peers, Colfax..... | 1st Saturday every 2d month. |
| Riverside County Medical Society..... | Arthur L. Brown, Riverside..... | T. A. Card, Riverside..... | 2d Monday. |
| Sacramento Society for Medical Improvement..... | E. C. Turner, Sacramento..... | George J. Hall, Sacramento..... | 3d Tuesday. |
| San Benito County Medical Society..... | L. C. Hull, Hollister..... | F. O. Nash, Hollister..... | 1st Monday. |
| San Bernardino Medical Association..... | L. M. Coy, San Bernardino..... | E. J. Eyttinge, Redlands..... | 1st Tuesday. |
| San Diego County Medical Society..... | J. Perry Lewis, San Diego..... | G. B. Worthington, San Diego..... | 2d and 4th Tuesdays. |
| San Francisco County Medical Society..... | M. Gibbons, San Francisco..... | Le Roy H. Briggs, S. F..... | Every Tuesday. |
| San Joaquin County Medical Society..... | L. R. Johnson, Stockton..... | Dewey R. Powell, Stockton..... | 4th Friday, except July and August. |
| San Luis Obispo County Medical Society..... | B. Y. Miller, San Luis Obispo..... | G. L. Sobey, Paso Robles..... | 1st Saturday of each month. |
| San Mateo County Medical Society..... | C. V. Thompson, Pescadero..... | F. S. Gregory, Redwood City..... | 1st Friday of each month. |
| Santa Barbara County Medical Ass'n..... | H. C. Bagby, Santa Barbara..... | J. L. Schurmeier, Santa Barbara..... | 2d Monday. |
| Santa Clara County Medical Society..... | Raymond Wayland, San Jose..... | J. L. Pritchard, San Jose..... | 1st & 3d Wednesdays. |
| Santa Cruz County Medical Society..... | W. F. Cothran, Santa Cruz..... | A. N. Nittler, Santa Cruz..... | 1st Monday. |
| Shasta County Medical Society..... | A. B. Gilliland, Cottonwood..... | C. A. Mueller, Redding..... | Meets quarterly. |
| Siskiyou County Medical Society..... | J. R. Jones, Yreka..... | Robt. H. Heaney, Yreka..... | Meets 1st Monday each quarter. |
| Solano County Medical Society..... | E. A. Peterson, Vallejo..... | A. V. Doran, Vallejo..... | 3d Wednesday. |
| Sonoma County Medical Society..... | J. W. Shipley, Cloverdale..... | N. R. H. Juell, Santa Rosa..... | 1st Friday. |
| Stanislaus County..... | J. W. Reed, Newman..... | E. F. Reamer, Modesto..... | 2d Friday except July and August. |
| Tehama County Medical Society..... | F. J. Bailey, Red Bluff..... | F. H. Ely, Red Bluff..... | ..... |
| Tulare County Medical Society..... | A. W. Preston, Visalia..... | E. R. Zumwalt, Tulare..... | 1st Tuesday. |
| Tuolumne County Medical Society..... | E. H. Reid, Tuolumne..... | W. L. Hood, Sonora..... | ..... |
| Ventura County Medical Society..... | W. R. Livingston, Oxnard..... | John G. Norman, Oxnard..... | Every two months. |
| Yolo County Society for Medical Improvement..... | W. E. Bates, Davis..... | Lela J. Beebe, Woodland..... | 1st Tuesday, except July, Aug. and Sept. |
| Yuba-Sutter Counties Medical Society..... | Allen Gray, Marysville..... | A. L. Miller, Marysville..... | Meets every 2 months. |

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.

DIRECTORY OF NATIONAL AND WESTERN MEDICAL AND HEALTH ORGANIZATIONS

| Society | President | Secretary | Annual Meeting |
|---|--|--|---|
| American Medical Association..... | Hubert Work, Pueblo, Colo..... | Alexander R. Craig, 535 N. Dearborn St., Chicago, Ill..... | St. Louis, May 22, 1922 |
| Arizona Medical Association..... | Albert L. Gustetter, Nogales..... | D. F. Harbridge, Goodrich Bldg., Phoenix..... | Prescott, 1922 |
| California State Medical Society..... | John H. Graves, San Francisco..... | W. E. Musgrave, Butler Bldg., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| League for Conservation of Public Health..... | Dudley Smith, Oakland..... | Celestine J. Sullivan, Butler Bldg., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| Colorado State Medical Society..... | H. A. Smith, Delta..... | F. B. Stephenson, Metropolitan Bldg., Denver..... | ..... |
| Idaho State Medical Society..... | H. W. Wilson, Twin Falls..... | E. E. Laubaugh, Overland Bldg., Boise..... | ..... |
| Montana Medical Association..... | W. W. Andrus, Miles City..... | E. G. Balsam, Hart-Albin Bldg., Billings..... | Great Falls, July, 1922 |
| Nevada State Medical Association..... | R. A. Bowdle, East Ely..... | Horace J. Brown, Goldfield..... | ..... |
| New Mexico Medical Society..... | Chester Russell, Artesia..... | T. E. Tull, Albuquerque..... | ..... |
| Oregon State Medical Association..... | Joseph A. Pettit, Portland..... | Raymond E. Watkins, Corbett Bldg., Portland..... | ..... |
| Texas State Medical Association..... | T. J. Bennett, Austin..... | Holman Taylor, Texas State Bank Bldg., Ft. Worth..... | El Paso, May, 1922 |
| Utah State Medical Association..... | R. R. Hampton, Salt Lake City..... | Wm. J. Rich, Boston Bldg., Salt Lake City..... | ..... |
| Washington State Medical Assn..... | A. E. Burns, Seattle..... | C. H. Thomson, Cobb Bldg., Seattle..... | ..... |
| Wyoming State Medical Society..... | E. A. Kell, Rawlins..... | Earl Whedon, Sheridan..... | ..... |
| Calif. Assn. of Med. Soc. Workers..... | Louise Morrow, San Francisco..... | Ebna J. Shirsper, 3700 California St., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| California Assn. of Physiotherapists..... | Hazel Furchgott, San Francisco..... | Florence Atkinson, 29 Mosswood Road, Berkeley..... | Yosemite Park, May 15-18, 1922 |
| California Assn. of Radiographers..... | F. McCormack, San Francisco..... | Leonard Frank, Physicians Bldg., San Francisco..... | Yosemite Park, May 15-18, 1922 |
| California State Board of Health..... | G. E. Ebright, San Francisco..... | Walter M. Dickie, Sacramento..... | ..... |
| California Board Med. Examiners..... | P. T. Phillips, Santa Cruz..... | Chas. B. Pinkham, Flood Bldg., San Francisco..... | ..... |
| Anesthetists, Northern Cal. Assn. of..... | Mary Botsford, San Francisco..... | Dorothy A. Wood, 1390 7th Ave., San Francisco..... | Yosemite, May 15, 1922 |
| Anesthetists, Southern Cal. Assn. of..... | W. R. Crane, Los Angeles..... | Eleanor Seymour, 308 Cons. Realty Bldg., Los Angeles..... | Yosemite, May 15, 1922 |
| Anesthetists, Pacific Coast Assn. of..... | Geo. P. Waller, Los Angeles..... | Eleanor Seymour, 308 Cons. Realty Bldg., Los Angeles..... | Yosemite, May 15, 1922 |
| Los Angeles Orthopedic Society..... | ..... | Alfred E. Gallant, Van Nuys Bldg., Los Angeles..... | ..... |
| San Francisco Orthopedic Club..... | J. T. Watkins, San Francisco..... | H. H. Markel, Butler Bldg., San Francisco..... | ..... |
| Pacific Coast Roentgen Ray Society..... | W. W. Watkins, Phoenix, Ariz..... | Roy Payne, Portland, Ore..... | Phoenix, Ariz., Dec. 1-3, 1921 |
| Western Section of American Roentgen-Ray Society..... | Albert Soiland, Los Angeles..... | W. W. Watkins, Phoenix, Ariz..... | With Pacific Coast Roentgen-Ray Soc., May or June, 1922 |
| Western Surgical Association..... | Chas. D. Lockwood, Pasadena..... | Warren A. Dennis, St. Paul, Minn..... | St. Louis, Dec. 9-10, 1921 |
| Southern Calif. Medical Assn..... | Wm. Duffield, Auditorium Bldg., Los Angeles..... | Egerton Crispin, Los Angeles..... | San Diego, April 7-8, 1922 |

We carry in stock a full line of standard Anti-toxins, Serums, Vaccines, Hypodermic Syringes and Needles, Neo-salvarsan and other preparations used hypodermatically and intravenously.

LENGFELD'S PHARMACY

216 Stockton Street, Above Geary and
1804 Fillmore Street, Near Sutter

Pacific Wassermann Laboratories



Prompt • Accurate • Dependable

OUR prompt, accurate and dependable service is backed by a proud record of achievement covering a period of over ten years. Pioneers in the field, this institution has ever maintained its position of leadership and supremacy.

FEE LIST

| | |
|---|--------|
| Wassermann Test | \$5.00 |
| (Including Noguchi Control Test) | |
| Complement Fixation Test | 5.00 |
| (For Gonorrhea, T. B. or Cancer) | |
| Complete Blood Count | 5.00 |
| Autogenous Vaccine | 5.00 |
| Spinal Fluid, Wassermann Test | 5.00 |
| Urine, General Analysis | 1.50 |



| | |
|---|--------|
| Urine, % Albumen or Sugar, each | \$1.00 |
| Urine, Acetone or Diabetic Acid, each | 1.00 |
| Sputum Examination for T. B., etc. | 1.00 |
| Smear Exam. for Gonococcus, etc. | 1.00 |
| Stool Examination for Parasites, etc. | 3.00 |
| Cultures of Pus | 2.00 |
| Gastric Contents, Chemical and Micro. | 5.00 |

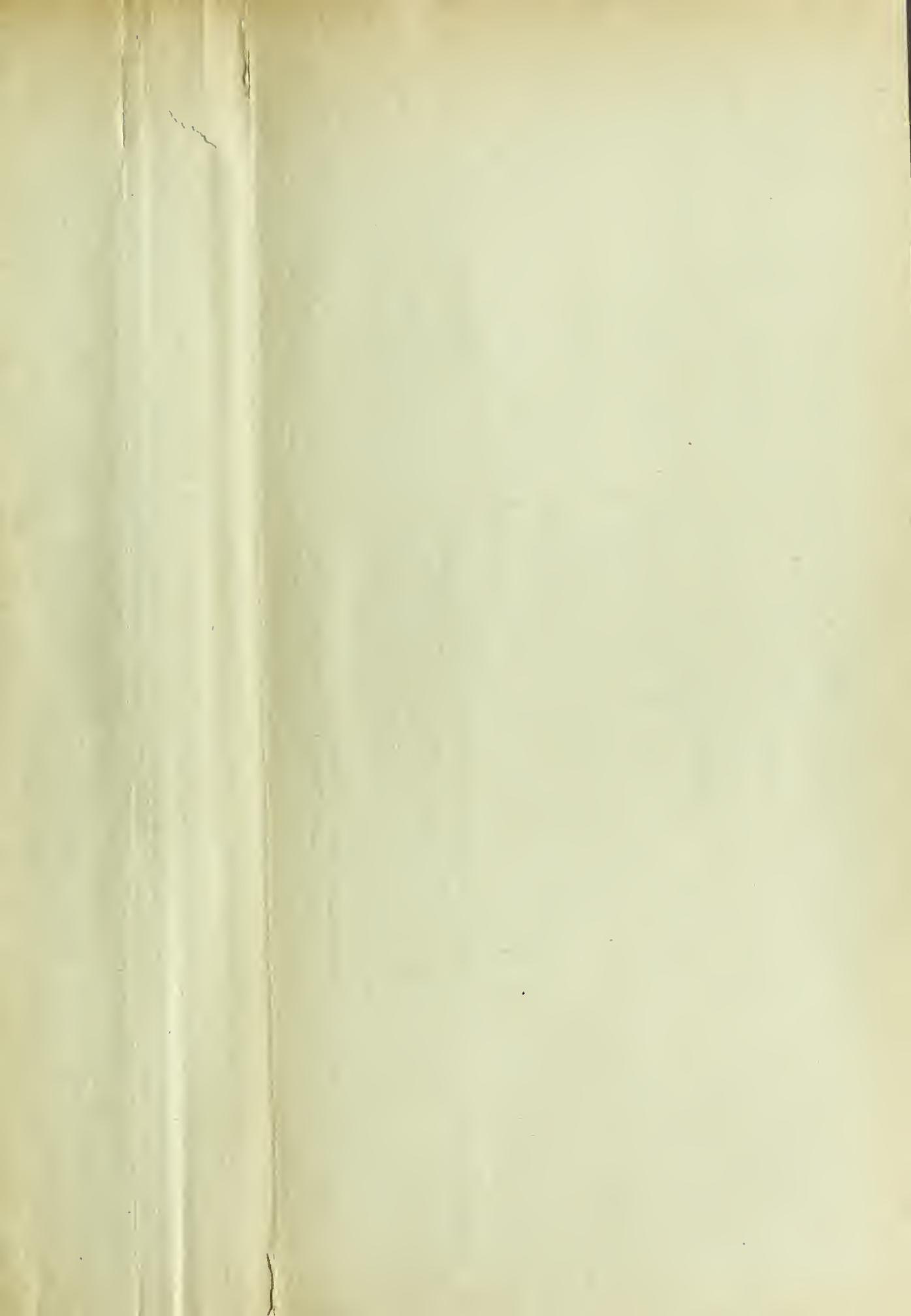
Complete Fee List sent on request

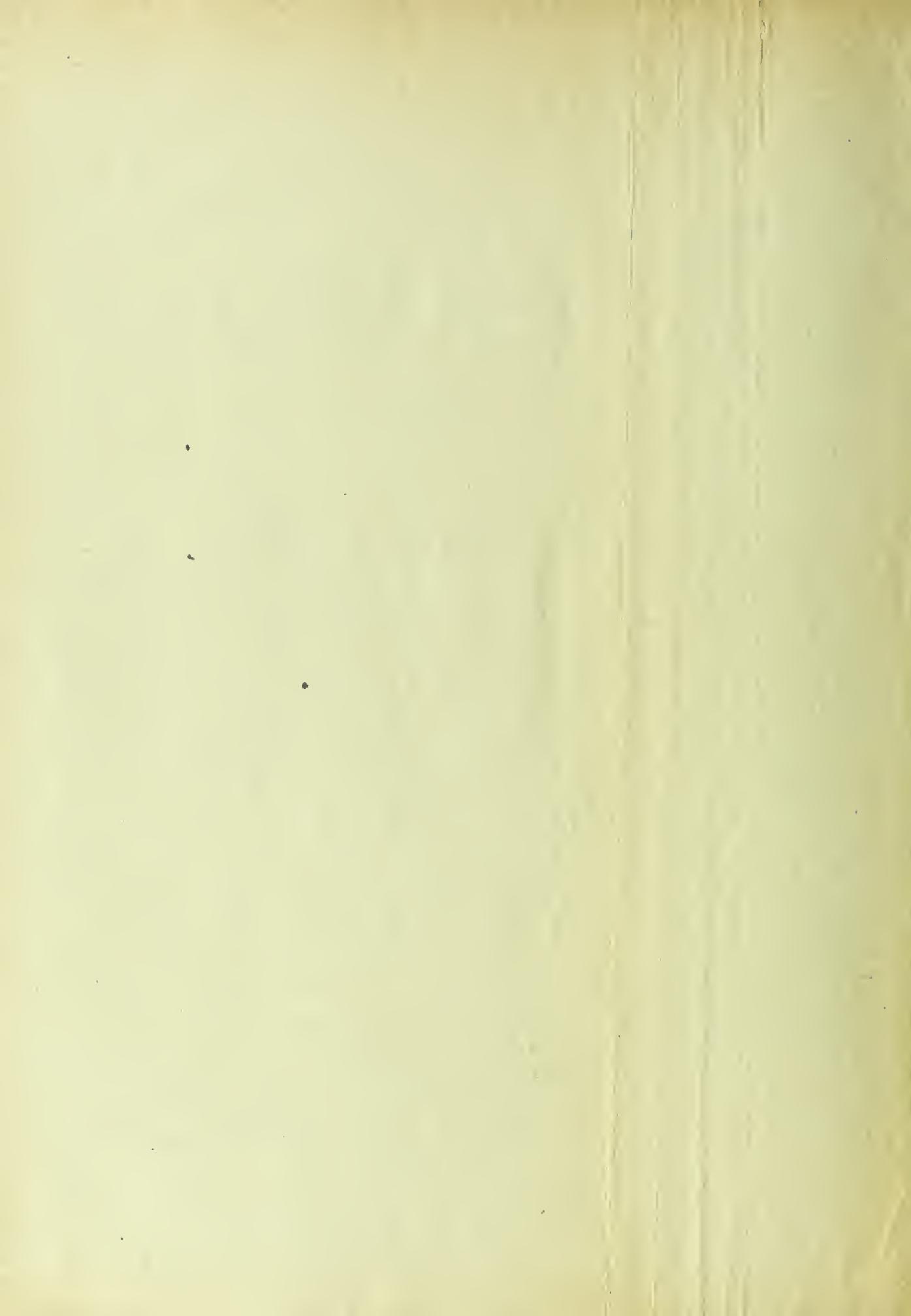
Specimens called for without charge at your office, patient's residence or hospital in cities where our laboratories are established. Sterile Containers are furnished without charge on request. Reports telegraphed without charge when requested.

PACIFIC WASSERMANN LABORATORIES

Suite 506 Pacific Building, San Francisco ~ Telephone Sutter 1486

Los Angeles: Suite 1010 Hollingsworth Building Oakland: Suite 304 Physicians Building Seattle: Suite 913 Joshua Green Building





4121351

