PROCEEDINGS

OF THE

CONNECTICUT MEDICAL SOCIETY,

1894.

ONE HUNDRED AND SECOND

ANNUAL CONVENTION,

HELD AT

NEW HAVEN, MAY 23D AND 24TH.

PUBLISHED BY THE SOCIETY.

N. E. WORDIN, A.M., M.D., SECRETARY.

BRIDGEPORT.

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1894.

The Connecticut Medical Society does not hold itself responsible for the opinions contained in any article, unless such opinions are indorsed by a special vote.

All the communications intended for the Connecticut Medical Society must be addressed to N. E. Wordin, M.D., Bridgeport, Conn.

The next Annual Meeting of the Connecticut Medical Society will be held in Hartford, May 22d and 23d, 1895.

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A valuable paper on Appendicitis, by Dr. Topping with summary of cases by Dr. Blodget, was lost in the United States mail.

OFFICERS OF THE SOCIETY.

1894–1895.

PRESIDENT.

FRANCIS N. BRAMAN, New London.

VICE PRESIDENT.

SETH HILL, Stepney.

VICE PRESIDENTS, *ex officio*.

G. F. LEWIS,
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F. L. DICKINSON.

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W. W. KNIGHT.

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ASSISTANT SECRETARY.

JULIAN LAPIERRE.

COMMITTEE ON MATTERS OF PROFESSIONAL INTEREST IN THE STATE.

IRVING W. LYON, FREDERICK H. WIGGIN,
CHARLES B. GRAVES.

STANDING COMMITTEES.

Committee to Nominate Physicians to the Retreat for the Insane.

FRANCIS L. DICKINSON, M.D., GEO. L. PORTER, M.D.,
O. J. D. HUGHES, M.D., ABIEL W. NELSON, M.D.,
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R. S. GOODWIN, M.D., Litchfield County.
D. A. CLEAVELAND, M.D., Middlesex County.
C. B. NEWTON, M.D., Tolland County.

On Medical Examination.

LEONARD B. ALMY, M.D., MAX MAILHOUSE, M.D.,
HORACE S. FULLER, M.D., JOHN W. WRIGHT, M.D.,
JOHN B. KENT, M.D.

Committee on Publication.

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P. H. INGALLS, M.D., *Anniversary Chairman.*
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CHARLES E. TAFT, M.D.

Dissertator.

FREDERICK M. WILSON, M.D.

Alternate.

SAMUEL B. CHILDS, M.D.

PROCEEDINGS

OF THE

CONNECTICUT MEDICAL SOCIETY.

ONE HUNDRED AND SECOND ANNUAL CONVENTION.

The President and Fellows of the Connecticut Medical Society met in Warner Hall, New Haven, on Wednesday, the 23d of May, 1894, the meeting being called to order by the President, Dr. Francis D. Edgerton, at 11:30 A. M.

The Report of the Committee on Credentials was called for. The Secretary called the roll of those regularly appointed, with their alternates, as follows:

FELLOWS, *ex officio.*

President.

FRANCIS D. EDGERTON.

Vice President.

FRANCIS N. BRAMAN.

Vice Presidents, ex officio.

G. F. LEWIS,

*J. F. LUBY,

*C. E. BRAYTON,

W. S. WATSON,

*T. R. PARKER,

F. H. WIGGIN,

F. K. HALLOCK,

*F. L. DICKINSON.

* Absent.

Treasurer.

W. W. KNIGHT.

Secretary.

N. E. WORDIN.

Committee on Matters of Professional Interest in the State.

H. FLEISCHNER, E. P. FLINT, E. P. SWASEY.

FELLOWS ELECTED IN 1894.

Hartford County.

Nathan Mayer, I. W. Lyon,
*M. J. Coholan, *N. S. Bell,
I. P. Fiske, W. M. Hudson.

New Haven County.

A. A. Crane, E. W. Smith,
F. E. Coudert, O. T. Osborne,
W. H. Zink.

New London County.

*Anthony Peck, W. K. Tingley,
¶C. B. Graves, *F. H. Dart,
*H. B. Thomson.

Fairfield County.

Robert Lauder, *F. B. Baker,
†Henry Blodget, C. H. Bell,
C. R. Hexamer.

Windham County.

Charles J. Fox, *F. A. Morrell,
H. A. Davis, F. G. Sawtelle,
*C. H. Allen.

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*Absent. †C. C. Godfrey, Alternate.
¶M. W. Robinson, Alternate.

Litchfield County.

Elias Pratt, *J. H. North,
*J. L. Buel, E. H. Welch,
J. C. Kendall.

Middlesex County.

F. S. Smith, F. B. Look,
J. M. Keniston, *A. J. Campbell,
*S. M. Noyes.

Tolland County.

*F. Gilnack, *F. W. Walsh,
*C. F. Sumner.

The President then delivered the

ANNUAL ADDRESS TO THE FELLOWS.

Gentlemen—Fellows of The Connecticut Medical Society:

The Legislature at its last session passed "An Act concerning the Practice of Medicine, Surgery and Midwifery," which prohibited all persons after October 15th, 1893, from undertaking the duties of physician, surgeon or accoucheur for "compensation, gain or reward," with certain specified exceptions, without a certificate of registration from the Board of Health. Certificates of registration were to be given to such persons as had been actually engaged in the practice of "Medicine, Surgery, Midwifery, or any alleged practice of healing," previous to October 15th, 1893, by the Board of Health, upon their filing a statement of certain facts, specified by the enactment, and the payment of a fee of two dollars.

After October 15th such persons as held diplomas from medical colleges, "recognized as reputable by any one of the chartered medical societies of the state," were allowed to file statements, and receive certificates of registration. Other persons were not allowed certificates of registration, except by passing an examination, by one of the three examining committees, appointed by the Board of Health, in accordance with the

*Absent.

act; each committee having been nominated by the several chartered medical societies of the state.

During the month of December, 1893, "The Connecticut Medical Society, The Connecticut Homeopathic Medical Society, and The Connecticut Eclectic Medical Association," were to each file with the State Board of Health the names of five physicians competent to serve as members of such examining committee and they were to be appointed by the Board of Health. In accordance with the law and to make the nominations for the examining committee, a special meeting of the Fellows of your society was called, which convened at Hartford, October 20th. Drs. Max Mailhouse of New Haven, H. S. Fuller of Hartford, G. L. Porter of Bridgeport, J. B. Kent of Putnam, and L. B. Almy of Norwich were nominated as medical examiners. Dr. Porter declined to serve and Dr. J. W. Wright of Bridgeport was nominated by your president in accordance with the provisions of the medical act, and these gentlemen were appointed by the Board of Health as the board of examiners of your society. Dr. Almy was appointed for one year and his term of service consequently expires December 31st, 1894. It will be necessary for the society to nominate his successor at the present meeting. Dr. Mailhouse, the secretary of the examining committee, will report to you what they have done.

The law provides that "the secretary of each of said medical societies shall file with the secretary of the State Board of Health a list of medical colleges or institutions recognized as legal and reputable by his society, or all such secretaries may agree upon a simple list and such list or lists may be corrected from time to time as may be necessary." The Secretary and the Fellows at this meeting construed the law to mean the secretary instructed by the Fellows of the society, and this meeting adopted the list of medical colleges prepared by the Board of Health of the State of Illinois, as the list for our society to file with the Board of Health in compliance with the statute. This list has been compiled with the greatest care and at great expense, with the closest scrutiny and represents an amount of labor and expense which would severely tax our society. It has also required a great amount of time to accomplish the result.

The Secretary of the Board of Health after October 15th, had applications from graduates of several extinct medical colleges not on the adopted list. Your President, Secretary and Treasurer were appointed at this meeting a committee to decide upon the status of such colleges and advise the Board of Health. There have been about fifteen hundred certificates of registration issued under the act, a very large proportion to persons having no diploma.

It is astonishing how few of the unqualified have failed to register. All have been forewarned and sought cover. It is best that it should be so, for nobody expected the immediate result of the law to accomplish more than the stopping of the practice of peripatetic quacks and there will be less opposition to the law in consequence. If the three societies set up a high standard of examination there will eventually be a marked improvement in the education of the mass of those practicing as physicians in the state. It will require almost a whole generation to accomplish the best results attainable under such a law, but meanwhile the education of the people as to its merits will have been accomplished. It is to be hoped that each of the chartered societies will be desirous that the public shall consider its standard the highest and through such emulation that only thoroughly competent men shall be registered.

Forty-two states have some law similiar to our Medical Practice Act in its purpose. Seven states have no law regarding registration of practitioners of medicine. Simple registration of the doctor's degree is required in thirty-one. Eleven states require an examination by a State Board before a legal qualification can be obtained. We are among the latest and the result of our law and the defects of its practical working are not yet so apparent. There are some things which will require change but while so little experience has been acquired it is best that we wait and study the practical defects of its working. Our Medical Practice Act fails to ensure a uniform standard of examination from the committees of the several societies. The New York law provides for three boards of seven members each. Each member of the three boards prepares sixty questions, making 1,260 questions, which are forwarded to a Question

Committee consisting of two members from each board, from which are selected fifteen questions for each of seven departments and these questions are the same, except for that of "Therapeutics, Practice and Materia Medica." Each board selects such questions as it thinks suitable in this department. Such a law necessitates a supervising head, which the State of New York has in the regents of the university. We have no similar body and the only way under our present law by which a uniform standard could be attained would be by the voluntary agreement of the several boards to select by some arrangement among themselves the same questions for their examinations in "anatomy, physiology, medical chemistry, obstetrics, hygiene, surgery, pathology and diagnosis while for therapeutics including practice and materia medica" questions suited to the views of the several systems would be framed. This would be possible even under the phraseology of the present law. The only other method of effecting the same standard would be by a mixed board, which is practically impossible, owing to the difficulty of reaching an agreement between the three chartered societies as to its personnel.

The only examinations under the law, thus far, have been those of your examining committee. The committees of the State Homeopathic Medical society and the State Eclectic Medical Association have recommended no one for registration to the Board of Health.

There has been only one prosecution, so far as I have knowledge, under the law. This was in the City court of Waterbury. I will relate it somewhat in detail and mostly in the language of one of the Waterbury newspapers to which I am indebted for the facts.

Mrs. Helen Ashland Kean, aged about fifty, the wife of a Methodist clergyman, was arrested in Waterbury, April 17, 1894, for violating its provisions. It would seem from the newspaper report that the State's attorney had called her attention to the law, and she had continued her practice for some time afterward. She was brought to trial April 19th, and put to plea on the charge of practicing medicine without a certificate of registration. Mrs. Kean said: "I plead guilty to practicing

medicine without a license. I plead guilty to the charge. I practiced clairvoyance under the advice of Prosecuting Attorney O'Neil." The court, however, ordered the plea changed to not guilty, thinking Mrs. Kean did not understand her position. Whereupon Mrs. Kean took her seat at the lawyers' table and proceeded to conduct her own defense.

"Edgar P. Corbet, a young man from New Haven, testified that Mrs. Kean attended him twice for catarrh. She had given him the medicine which he produced in court and told him her first charge for medicine would be $2." James Brown of Waterville, testified that the prisoner "gave his wife medicines, charging two dollars for the first visit and fifty cents to one dollar for subsequent visits, calling nearly every day for five or six weeks."

Mrs. Kean then took the stand and testified in her own defense: "That she had practiced medicine more or less in Waterbury for six months under the advice of Mr. O'Neil, who told her that she could practice clairvoyance." "No clairvoyant, she said, presumed to practice without some remedies." "Mr. O'Neil did not say anything to her about her right to use drugs and herbs." "She used her own remedies for which she had applied for a patent and also prescribed proprietary remedies which she claimed she had a right to do." She did not deny the truth of the testimony of Messrs. Corbet and Brown.

"Prosecuting Attorney O'Neil claimed a conviction; said he did not tell the woman she could use drugs, but that she could practice under the following section of the statute: "This act shall not apply to * * * the use of proprietary medicine sold under trade mark used by the United States Government; nor to any chiropodist or clairvoyant who does not use in his practice any drugs, medicines or poisons, etc." Mr. O'Neil said: "He was inclined to think the woman intended to do what was right, although she insisted on practicing after he had written her several letters."—Judge Root reserved his decision until Saturday, April 21, when he imposed a fine of one hundred dollars. Mrs. Kean appealed.

I believe those members of our society who have been most interested in the enactment of our law and in its execution are

agreed that as so little time has elapsed it would be inadvisable to seek any change or further legislation at present. But as others may seek legislation in this direction, I would advise that we continue our committee on legislation and would remind you that those gentlemen who have familiarized themselves with the subject in the past are better prepared to act in such capacity than others.

The following Committees were then announced by the President:

On Credentials.

N. E. Wordin, I. W. Lyon.

On Unfinished Business.

F. B. Look, C. C. Godfrey,
F. E. Coudert.

On County Resolves.

F. G. Sawtelle, M. J. Coholan,
F. H. Dart.

On Business.

N. E. Wordin, W. S. Watson,
G. F. Lewis.

On Honorary Members and Degrees.

C. H. Bill, F. N. Braman,
F. K. Hallock.

Auditing.

E. H. Welch, I. W. Fiske.

To Nominate Reporters on the Progress of Medicine and Surgery.

C. R. Hexamer, W. K. Tingley,
O. T. Osborne.

On Reception of Delegates and Invited Guests.

H. E. Smith, W. W. Hawkes,
J. H. Townsend.

Dr. Mailhouse, Secretary of the Committee on Medical Examination, then presented his report.

THE EXAMINING COMMITTEE

of the Connecticut Medical Society, appointed by the State Board of Health in conformity with the law passed by the General Assembly in 1893, namely: An Act concerning the Practice of Medicine, Surgery, etc., met at the office of Dr. H. S. Fuller, 95 Trumbull St., Hartford, on Friday, January 19th, 1894. There were present, Drs. H. S. Fuller, of Hartford, Max Mailhouse of New Haven, John B. Kent of Putnam, and Leonard B. Almy of Norwich. Dr. J. W. Wright of Bridgeport, the fifth member, appointed to fill the vacancy caused by the resignation of Dr. Geo. L. Porter, (originally appointed), was not present, not yet having received his credentials.

The committee was organized with the election of Dr. H. S. Fuller for President, and Dr. Max Mailhouse for Secretary and Treasurer.

The State Board of Health made the following time appointments:

To serve for one year, Dr. Leonard B. Almy; to serve for two years, Dr. John B. Kent; to serve for three years, Dr. J. W. Wright; to serve for four years, Dr. H. S. Fuller, and to serve for five years, Dr. M. Mailhouse.

A blank form of certificate of examination was adopted.

Notice was received from the State Board of Health that an examination of candidates for the practice of medicine and surgery and for the practice of midwifery would be held on Friday, January 26th, and it was voted, in accordance therewith, that the same take place at 10 A. M., at the Yale Medical School in New Haven.

A series of questions for examination of the applicants for the practice of midwifery only, was adopted and ordered printed in both the English and German languages. For the other class of candidates it was voted that the questions in anatomy, physiology and medical chemistry be prepared by Dr. J. B. Kent: in therapeutics, practice and materia medica by Dr. H. S. Fuller; in surgery and pathology by Dr. L. B. Almy; in hygiene and diagnosis by Dr. J. W. Wright, and in obstetrics by Dr. M. Mailhouse. This arrangement has been continued for all subsequent examinations, and thus far, has worked satisfactorily.

At 10 A. M. on Friday, January 26th, the committee held its first session for the examination of applicants to practice. All the members of the committee were present. Preliminary to the examinations it was unanimously voted that applicants for a certificate of qualification in midwifery be required to attain a standard of fifty per cent. in order to obtain such certificate; and that certificates for surgery, practice of medicine, and obstetrics be granted only to such applicants as obtain an average of sixty per cent. The standard of seventy-five per cent. as laid down in the law in the State of New York, was considered by the committee as rather high for this state at present, although we propose to gradually increase our standard until it attains that of New York.

Six applicants were on hand for examination, while four others who had applied, failed to appear. Of the six, there were two males who desired certificates for general practice and four females who wished to be examined in midwifery.

Among the midwives was one who was unable to write, scarcely able to read, and, upon a preliminary oral examination, found so deficient in knowledge upon the subject of midwifery that the committee deemed it unwise to put her through the ceremony of an examination, and advised her to withdraw; this she did. This woman was also aged and almost infirm. The other midwives, three in number, were all German by birth and education and all showed a practical knowledge of the subject. One of these, but four months in America, showed herself better equipped to practice midwifery than the large majority of graduating M.D's. of the day. These midwives were not systematically marked, but were acted upon rather as their general knowledge of the subject warranted.

Of the two physicians examined, one a graduate of the Baltimore University School of Medicine, failed to obtain a rating of sixty per cent. by any one of the committee, and so a certificate was denied him.

The following obtained certificates of qualification: in midwifery, Rosina Hirsch, of Danbury; Fredericke Singerhof, of New Haven; and Magdalena Perlitz, of Hartford; the latter is referred to above as extraordinarily well prepared for her work.

A certificate of qualification in surgery, practice and obstetrics, was granted to Julian T. Miller, M.D., of Elizabeth, N. J., a graduate of the University of Virginia.

The session lasted from 10 A. M. to 5:30 P. M., with one hour's intermission for lunch.

After examination by all the members of the committee, the questions and answers were, in accordance with the law, transmitted to the Secretary of the State Board of Health for filing.

Those found qualified received the signatures of all the members of the committee.

We found ourselves pressed for time and were compelled to eliminate some of the questions originally prepared, in order to complete the examinations in one day, although there were no more than ten questions upon any one subject, and, upon most subjects, but six.

Our next meeting was held on March 9th, at the office of Dr. H. S. Fuller in Hartford, and was called for the accommodation of a single individual, a woman who desired to practice midwifery. In accordance with the law the State Board of Health were compelled to call the committee together within thirty days of the date of her request for examination. There being but one candidate it was considered sufficient for the purpose that the President and Secretary of the committee attend, and the papers were then mailed to the other members of the committee for examination and marking.

The applicant was unable to write English or German, she being Polish. The committee decided in this particular case, for various reasons, to examine this candidate orally and through an interpreter, in part, and it was so done. This was not considered as establishing a precedent, for the law distinctly states that the examination shall be conducted in writing. She was, however, found incompetent and a certificate was denied her.

Our next and last meeting, up to date, was held on April 10th, 1894, at the office of the secretary, in New Haven. Three physicians had applied for examination. One of these failed to appear, owing to illness, and one was found to be a graduate of a college whose name appears upon our list of reputable colleges,

and hence an examination was not found necessary. The only one then examined was a physician who stated that he was a graduate of the Royal University of Ireland.

Beside the secretary, there were present Drs. J. B. Kent and J. W. Wright. At the conclusion of the examination, it having appeared that the applicant failed to receive the required percentage from any one of the three members of the committee present, the same being a majority, a certificate was denied him.

This comprises the work thus far done by your committee, of which the following is a brief summary:

Three meetings in as many months have been held for the examination of applicants, at which eight have presented themselves, five of whom were candidates for certificates in Midwifery and three for certificates in Surgery, Medicine and Obstetrics. Of the former, three, or 60 per cent., passed the examinations and received certificates of qualification. Of the latter, but one, $33\frac{1}{3}$ per cent., was found qualified. These results, taken in connection with the names of the institutions represented as being the sources of knowledge of the applicants, tend to justify the clause of the law concerning lists of reputable medical colleges, together with the action of our society in not accepting trans-atlantic diplomas. For the one applicant who had a trans-atlantic diploma was found poorly qualified to practice medicine. The same is to be remarked of the other rejected candidate, who is a graduate of the Baltimore University School of Medicine—a two-courses-of-lecture college, not upon the list of the reputable colleges. The two midwives who were rejected had neither of them been educated in midwifery, or anything else, and were totally unfit for such work. The results of our labors thus far and the practical knowledge we have acquired that so much incompetency still seeks food to thrive upon, confirm us in the belief that examining boards in Connecticut have a good raison d'être and are proper watch-guards of the health-treasury of the state.

Our experience has, to our minds, confirmed the wisdom of electing a committee of five members; this is a good working number, enough and yet not too many.

We have found it necessary to fix the examination fee at ten

dollars in order to defray traveliug expenses together with postage, stationery, etc. In fact, if all the members of the committee had been able to be present at all the sessions, the fees of the candidates would not have sufficed. The total amouut paid iu by candidates has beeu sixty-five dollars, oue haviug paid but five dollars, and oue having withdrawn upon the advice of the committee. Of this amount there has been paid out by the treasurer, for traveling expenses of members, fifty-seven dollars, and for postage, statiouery, etc., three dollars aud forty-five cents, leaving on hand a balance of four dollars aud fifty-five cents, which cau be used for siuilar expenses.

Our experiences have drawn our attention to a few poiuts iu the law which it might be well to keep in view as a possible basis for future legislation at the discretiou of the committee iu charge of such matters. As the law stauds at present, the committee must hold sessious as often as every thirty days, provided a single candidate requests it of the State Board of Health. Stated dates for examiuation, either quarterly or semi-annually, would be preferable in our opinion.

The question has also arisen in our miuds as to the advisability of taking two days for the examination, inasmuch as seven hours, or thereabout, which is as much time as can be made use of in one day, have seemed inadequate for the purpose of examining a candidate properly in all the branches laid down in the law. The New York law gives three days and a half to the examinations. However, although such a change in the law may be advisable, we see, at present, no urgent necessity therefor, aud hence would not urge action on this point.

The law as it stands provides that "An applicant, after having been rejected by any of said examining committees, shall not be eligible to examiuation by another committee of examiuation uutil after the expiration of twelve months."

Although not originally intended, this permits of a candidate, rejected by oue committee, being again examined by the same committee withiu a period of thirty days, provided he so petitions to the State Board of Health, in the same manner as a new applicant. The clause is ambiguous and the law should bo such

that an applicant once rejected by one committee cannot be re-examined by the same committee until the expiration of six months, nor by any other committee until the expiration of twelve months. From the best information obtainable we learn that thus far all applicants with a single exception have elected to appear before the committee of the Connecticut Medical Society.

The character of the papers presented by applicants desirous of practicing midwifery and the increasingly large number of people in the state who find it necessary to employ midwives, owing to their financial condition or otherwise, has rendered it boldly apparent to us that properly educated midwives are becoming a great necessity to the community, and the question of a school for midwives, a problem of the immediate future if not of the present. We desire to commend this subject to your earnest consideration.

The term of Dr. L. B. Almy of this committee, who was appointed to serve for one year, expires with the present year, and his successor, to serve for five years, must be nominated by you at this time.

His associates upon the committee desire to express to the society and to Dr. Almy their appreciation of his sincere and earnest efforts in this field and their hearty endorsement of the selection which placed him upon this committee.

In conclusion we desire to express our thanks for the confidence which the society has placed in us and which we have endeavored to justify by our official doings in that, while acting judicially and also liberally toward those who came under review by us, we have refrained from endorsing with the name of the Connecticut Medical Society such individuals as could not be looked upon as your peers.

Respectfully submitted,

MAX MAILHOUSE, Secretary.

The subject was discussed by Doctors Coudert, Lindsley, Edgerton and Osborne.

As section 10 of the Medical Practice Act provides that changes may be made from time to time in the list of medical colleges, a committee of three was appointed, with power dele-

gated by the Society, to make such changes in the accepted list of colleges as they might deem proper. Doctors H. E. Smith, N. E. Wordin and F. W. Wright, were elected members of this committee.

The Secretary read letters from Doctors W. V. McDonald, of New York and J. R. Topping, of Bridgeport, requesting that certain medical colleges be put upon the list. They were referred to the committee, with power to act.

A letter was also read from the Ohio State Board of Health, Secretary Probst, asking that medical colleges be requested to place in their curriculum, a certain amount of study in hygiene, so that health officers, who are mostly physicians, may be better qualified for their work. This communication was referred to the same committee.

THE PUBLICATION COMMITTEE

found sixteen papers awaiting its disposal, besides the regular addresses and reports. This is not a very large number; of these there were printed seven medical and six surgical, for the society met in sections.

Of especial interest was the report of the Committee on Matters of Professional Interest, The Menace to Public Health from Bovine Tuberculosis, a subject which is continued in our work to-day.

There were fourteen obituary notices of active members and six of honorary members who had passed away some years previously, unknown and unnoticed by us.

An unusual feature in the Proceedings last year was the printing of the Medical Practice Act, with the addresses delivered by Dr. Porter, and Messrs. Gross and Charles Dudley Warner, before the joint Judiciary Committee of the Assembly. Two hundred extra copies of these were also printed for any future use which might arise. They are now at the service of the Society. The book comprises 333 pages and as all know is bound in cloth.

By way of exchange for our annual volume is the Annual of the Universal Medical Science by Dr. Sajous. The last series is now in the hands of your Secretary and forms a portion of our reference library.

We recommend the publication of at least seven hundred copies of our Proceedings.

The recommendation of the committee was adopted and it was voted that the Proceedings be bound in cloth.

The Medical Society of the District of Columbia extended, last September, an invitation to this Society to be present at its seventy-fifth anniversary. Dr. Thomas H. Russell, of New Haven, was present as a delegate. In response, the following letter was received and read by the secretary:

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

WASHINGTON, D. C., March 10, 1894.

DEAR SIR:

We have the honor of transmitting the following preamble and resolution adopted by the Medical Society with the request that they be presented to the Connecticut Medical Society:

"WHEREAS, The eleven senior Medical Societies in this country did accept the invitation to attend, by representation, the celebration of the 75th anniversary of the Medical Society of the District of Columbia, on the 16th ultimo, and many of them were present by representatives; therefore be it

Resolved, That the Medical Society of the District of Columbia, in acknowledgement of such cordiality of good will and fraternal comity on the part of said societies, does hereby direct the proper officers to convey to each of said societies and to each representative present, its grateful appreciation of the high compliment thereby bestowed, and to give expression to the sincere wish that the fraternity and friendship thereby established may continue without interruption through the years to come."

Very respectfully,

S. C. BERSEY, M.D., President.

THOMAS C. SMITH, M.D., Corresponding Secretary.

DR. N. E. WORDIN, Secretary of the Connecticut Medical Society, 174 Fairfield Avenue, Bridgeport, Conn.

The meeting was then adjourned until the afternoon session.

The meeting was again called to order at 2:30 P. M., Dr. Edgerton, the President, in the chair.

The committee on Unfinished Business, by its chairman, Dr. F. B. Look, reported favorably on the resolution adopted last year, as on page 32 of the Proceedings, and it was voted that Sec. 8, Chap. 11, of the By-Laws, be amended by inserting the words "one hundred and," before the word fifty; making it read, "and the Secretary one hundred and fifty dollars per annum."

The Treasurer presented his report, which showed a balance of $319.44 on hand and all the indebtedness of the Society paid.

REPORT OF THE TREASURER.

To the President and Fellows of the Connecticut Medical Society:

As Treasurer, I present the following report of the finances of the Society for the year ended May 23rd, 1894:

RECEIPTS.

Balance from old account,		$ 275 05
Received from County Clerks:		
Hartford County,	$ 321 30	
New Haven "	352 80	
New London "	84 00	
Fairfield "	206 10	
Windham "	114 20	
Litchfield "	163 20	
Middlesex "	54 00	
Tolland "	33 30	
		$ 1328 90
Total receipts,		$ 1603 95

EXPENSES.

Printing Proceedings,	$ 540 95
Binding "	140 00
Stationery and printing,	31 25
Postage,	90 53
Printing Centennial Index,	330 55
Expenses Com. Matters of Prof. Int.	24 50
Engrossing Resolutions,	35 00
Expenses of Legislative Committee,	3 40

Expenses of Secretary,	13 10	
Salary of Secretary,	50 00	
Salary of Treasurer,	25 00	
Total expenses,		$ 1284 51
Cash in treasury, May 23d, 1894,		319 44
		$ 1603 95

DUE ON TAX OF 1893.

Hartford County,	00 00
New Haven "	90 00
New London "	12 00
Fairfield "	75 00
Windham "	18 00
Litchfield "	18 00
Middlesex "	00 00
Tolland, "	3 00
Total taxes in arrears,	$ 216 00
Decrease from taxes in arrears last year,	8 00

It is very gratifying to note that, although the tax was larger this year, there was an absolute decrease in the amount of taxes in arrears. This year there are seventy-two members who have not paid their tax; last year there were one hundred and twelve delinquents. Whether this improvement is the result of an increasing carefulness regarding small money matters among our members or whether it was caused by the increased activity of the County Clerks may be a question difficult to decide.

Moreover there has been more than the usual amount of taxes in arrears collected. This has enabled the Treasurer to pay, in addition to the current expenses, all the unpaid bills left over from last year and to start a new year with a small balance in the treasury.

This balance is too small to pay for printing the Proceedings and it will be necessary to continue the $3.00 tax for another year at least.

Respectfully presented,
W. W. KNIGHT, Treasurer.

The report was referred to the Auditing committee.

Tho New London County Association, having reported a list of members which they recommended for exemption from taxation, it was voted that their taxes be abated. They are:

Exempt from age, John C. Bolles, Montville; Albert T. Chapman, Mystic. For removal, James L. Terry, Lyme; Earl Matthewson, Montville; John B. Cunningham, New London; William Fairbanks, Norwich. For withdrawal, Merritt S. Ferguson, New London.

THE REPORT OF THE NOMINATING COMMITTEE

was called for and was given by Dr. Mayer. Following is the list of Officers and Delegates:

For President.

Francis N. Braman.

For Vice President.

Seth Hill.

For Assistant Secretary.

Julian LaPierre.

For Treasurer.

W. W. Knight.

Committee on Matters of Professional Interest in the State.

Irving W. Lyon, Frederick H. Wiggin,
Charles B. Graves.

Nominating Physician to Retreat for the Insane.

Francis L. Dickinson, G. L Porter,
Oliver J. D. Hughes, J. C. Campbell,
A. W. Nelson.

Committee on Publication.

Sec'y, N. E. Wordin, *ex officio*, Ass't Sec'y, Julian LaPierre,
C. C. Godfrey.

Anniversary Chairman.

P. H. Ingalls.

Committee of Arrangements.

E. J. McKnight, Charles E. Taft.

Dissertator.

F. M. Wilson.

Alternate.

Samuel B. Childs.

For Delegates to the American Medical Association in 1895.

E. J. Parsons,
Nathan Mayer,
O. T. Osborne,
W. S. Watson,
F. B. Look,
G. R. Shephard,
C. S. Rodman,
Robert Lauder,
R. S. Goodwin,
T. F. Rockwell,
Charles J. Fox.

For Delegates to the Maine State Medical Association.

T. M. Hills, T. M. Bull,
M. V. B. Dunham.

For Delegates to the Vermont State Medical Society.

George C. Bailey, O. J. D. Hughes.

For Delegates to the Massachusetts Medical Society.

D. A. Cleaveland, J. J. Morrissey.

For Delegates to the Rhode Island State Medical Society.

C. E. Brayton, H. B. Plunkett.

For Delegates to the New York State Medical Association.

E. H. Welch, F. S. Smith.

For Delegates to the Medical Society of New Jersey.

Max Mailhouse, F. B. Baker,
W. V. Wilson.

To the New Hamphire Medical Society.

T. R. Parker, L. B. Almy.

The Secretary was requested to cast a ballot for the gentlemen named and they were declared elected.

The committee to nominate Reporters on the Progress of Medicine and Surgery reported:

On the Progress of Medicine.

Elbridge W. Pierce, E. J. McKnight.

On the Progress of Surgery.

Charles C. Godfrey, L. W. Bacon, Jr.

The report was accepted.

The Committee on Business reported a program, which was to be modified as circumstances might arise during the exercises of Thursday, and which was changed according to the wishes of some who were to read papers and reports.

This report was accepted.

The committee to nominate Physician for the Retreat for the Insane, reported that they had not found anything to do.

In the absence of Dr. Storrs, the chairman, Dr. Parsons read

THE REPORT OF THE COMMITTEE ON LEGISLATION.

It was not expected that in the non-legislative year any new measure would come up for the consideration of your committee. At the last convention it was deemed judicious to continue this committee, to look after the interest of the Medical Practice Act.

There has been a very general compliance with the law without any marked degree of friction. To such an extent has this been true, that nothing has arisen to make it necessary to call the committee together. But the committee have not been negligent of their trust, conferences have been had with each other, with the Secretaries of the Medical Societies and State Board of Health, and also with the County Health Officers. Facts and suggestions have come to us from all of these various sources.

We therefore would respectfully call your attention to such facts and considerations as have been brought to our minds.

REGISTRATION.

This is the most prominent feature of the Medical Practice Act. The law may be criticised as too lenient in the granting of

licenses, but it is severe in its penalties for those who refuse to register. The law contemplates thorough and accurate registration as necessary in every respect for its efficiency and perpetuity.

There were up to January 1st, 1894, 1,531 certificates of registration issued, classified as follows: Members of the Connecticut Medical Society, 627; of the Connecticut Homeopathic Medical Society, 85; of the Connecticut Eclectic Medical Association, 39; and all other persons 780. Physicians unregistered in the state, 121. Of this unregistered class, 31 are members of this Society, 5 of the Homeopathic and 6 of the Eclectic; leaving 79 unregistered and belonging to no society. This makes an average of 15 unregistered physicians to a county. How this number compares with the probable number of superannuated, disabled, and of those who have relinquished the profession for some other calling, we have no means at hand of knowing. Returns from the towns or counties as by the health officers would readily determine this point. The large number of 780 registerered but not in membership with any society is made up of various kinds of loose or incoherent material. Taking the Connecticut Register and Manual of 1893 as our basis for estimating, we find 391 out of the 780 put down as having or supposed to have diplomas, leaving 389 registered without diplomas—these practice some ism and are known to the community as quacks. This number so unexpectedly large has given rise to the suggestion that many may have fraudulently obtained certificates of registration, but an explanation for this condition is rather to be found in the fact that the law on October 1st, 1893, opened the door to all persons "engaged in any alleged practice of healing."

It has been suggested that a more rigid interpretation of section 2nd., requiring applicants to make fuller and more specific statements, might have lessened the number. There seems to be in sections 2 and 3 some uncertainty as to the meaning to be given to the phrase "kind or branch of practice," which the certificate shall state. The State Board of Health construes this as not meaning any special system of practice and Mr. Gross concurs in this opinion. Hence under section 3 we have a regis-

tration which gives no classifications,—Regulars, Homeopaths, Clairvoyants, etc.,—all go into one common list. Such registration is not sufficiently specific.

However full and accurate the statements may be in the central office, they should be supplemented annually by returns from the local health officers. Then the 389 before mentioned, licensed for some special branch, can be held to the special branch alone. We should have a well described inventory of the medical material of the state in shape for any purpose of investigation or of future legislation.

Section 2 can at some future time be amended by inserting after the words "and if practicing under a license from any of the Medical Societies of the state, stating which Society, and the date when such license was obtained," the words "but if not practicing under such licenses, then stating the school, method, or branch of practice."

There have been 48 persons registered since January 1st, 1894: 12 of these are non-residents in the border towns, and 3 are midwives. Your committee are not informed as to which, if any, Society of Medicine they belong or what kind of practice they follow.

EXAMINATIONS.

In compliance with section 7th, the State Board of Health have appointed the several examining committees. No examinations have been made except by the committee of this Society, whose report has been submitted. We may simply add that the examinations have been made in writing, questions and answers being written and eminently fair and thorough.

Some uncertainty having arisen as to section 6th, relating to the time of making the annual nomination for the member of the examining committee, the matter was referred to Mr. Gross, who decides that the law is complied with, when the name of any person nominated at any meeting is filed with the State Board of Health, in December.

The Secretary of the State Board of Health suggests an amendment to section 8th, so that the committee of examination shall meet every four months, instead of within 30 days after receipt

of application. The committee see no objection to such a change, except that it is thought unwise to go too often to the Legislature, and therefore postponement is advised.

Section 10th, requires that the Secretary of each Society shall file with the Secretary of the State Board of Health, a list of reputable colleges, corrected from time to time. New colleges are being established, and hitherto unrecognized colleges may reach a higher standard, so that a revision is often necessary. It is needed this year in this Society. This need may happen any year. Your committee suggest that this matter be left to some committee to report annually, if necessary.

It has been suggested by one of the county health officers, that the fine of $100 is too large for the poor to pay, that half the amount would be better. This point was well considered by the committee, and Mr. Gross is still of the opinion that the law is more effective for the heavier penalty.

SUCCESS OF THE MEDICAL PRACTICE ACT.

It may be said that sufficient time has not yet elapsed to determine the success or failure of this law. The general compliance with the law, the interest manifested by the community, are favorable indications. In fact the people are stirred as never before in matters of public health. This law came to us on the tidal wave of progress in health legislation.

It had swept over the great states of the Union and struck this little state with irresistible force. It is sweeping onward over New England, and there can be no receding. The state in 1893 gave us almost as much legislation for public health as in all the previous history of the state. It was a memorable year, and shows a deep public interest in health matters.

The State Board of Health has put the Medical Practice law into the Manual of Statutes of Connecticut relating to the Public Health, thus making the state to endorse the measure as for the public health rather than for the profession; and the state, by the county and town officers of health, puts all the health statutes under their supervision, thus securing their enforcement. The medical law will be particularly aided and strengthened thereby.

So far as the committee can ascertain, only one suit has been instituted under the law, and that at Waterbury, and this trial does not involve any principle of the law, but whether in this particular case the person indicted should be held responsible, having acted under legal advice. But as appeared on trial that advice was obtained by misrepresentation, the person was convicted, and the case was appealed.

In conclusion your committee believe that the law will be sustained, and will have more and more the respect of the people of the state.

All of which is respectfully submitted.

M. Storrs,
E. F. Parsons,
Oliver J. Hughes,
J. W. Wright, M.D.,
E. J. McKnight,
F. N. Braman,
R. S. Goodwin.

A motion was made to accept the report. This was discussed by Doctors Keniston, Tingley and Hexamer, against the construction of the law which had been made; and by Doctors Hughes and Parsons in its defense.

An amendment was made to refer the report to the Committee on Examinations, for consideration, to report to the Society such suggestions as they might find practicable in the working of the bill.

The amendment was discussed and passed.

The report was thereupon accepted.

Doctor Parsons then spoke earnestly of the services of Mr. Gross to the Society, and our relations of obligation to him. Mr. Gross would very much appreciate being made an honorary member. He had refused to accept any emolument. He could be legally made an honorary member. He moved that we suspend the By-Laws and admit Mr. Gross to honorary membership.

The question was divided and the By-Laws were unanimously suspended by a rising vote. The motion was then made to elect the Hon. Charles E. Gross, of Hartford, an honorary member. It was unanimously passed by a rising vote.

Doctors Parsons, Wordin and Wright resigned their positions on the Committee on Legislation. After a discussion, Dr. Parsons withdrew his resignation, Dr. Wordin's was not accepted, and Dr. Wright was requested to remain on the Committee.

The Committee on Honorary Members reported, recommending the election of Doctors Stickney, Webster and Skene, nominated last year. They were elected. They nominated, for election next year, Sir James Grant, of Ottawa, and Dr. Henry O. Marcy, of Boston.

The Auditing Committee reported that the Treasurer's account was correct, and the report of the Treasurer was accepted. As an outcome of the report of the Committee on Business, Dr. Fleischner made a motion :

Resolved, That the report of the Committee on Matters of Professional Interest in the State shall always be presented to the Society in the forenoon of the Annual Convention, immediately after the Reports of Delegates to other Societies.

He spoke in favor of it, but it was lost.

A tax of three dollars on each member was voted.

The meeting of the President and Fellows adjourned.

THE ANNUAL CONVENTION.

THURSDAY, MAY 24TH.

The Mass Meeting was called to order by the President at 9:45 A. M.

The Secretary read his

ANNUAL REPORT.

The thing of most importance in our Society during the year past has been the Medical Practice Act, our preparation for it and its working. The preparation was by a

SPECIAL MEETING,

which was held in the City Mission Rooms, Hartford, October 20th. Section 10 of the Act provides that a list of medical colleges recognized as legal and reputable by this Society shall be filed with the State Board of Health, by your Secretary.

This meeting voted, first, that none but graduates of reputable colleges in the United States should be received on their diplomas; and second, that the Secretary be instructed to send in to the State Board of Health, the names of medical colleges which appear in the list of the Illinois State Board of Health.

There are in the Society a number of graduates of colleges which were reputable during their existence, but which have now ceased to be. To provide for such members a committee of three was appointed to inquire what extinct colleges there were in the United States whose graduates are entitled to registration under the present Act, and to put such upon the list. The President, Secretary and Treasurer of the Society were made the committee.

A letter was read from the Secretary of the Medical Society of the District of Columbia, asking for a Delegate from us to their seventy-fifth annual meeting. Dr. Edgerton, the President, was chosen, with power to appoint a substitute. Dr. Thomas H.

Russell, of New Haven, was thus delegated and he will present his report to us this morning.

An Examining Committee of five was chosen in accordance with Section 6 of the Act. The election resulted in the selection of Doctors Max Mailhouse, of New Haven; H. S. Fuller, of Hartford; G. L. Porter, of Bridgeport; J. B. Kent, of Putnam, and L. B. Almy, of Norwich. Their years of service, as designated by the State Board of Health, are in the order in which they are mentioned. Dr. Porter declined to serve on account of an expected absence from the State, and the President named Dr. J. W. Wright, of Bridgeport, to fill the vacancy. The term of Dr. Almy, which expires next January, was filled yesterday by the selection of himself as his successor.

A new Committee—on Medical Examination—is thus made for us by the statute, and is now among our Standing Committees on the Annual Announcement. The duties of the Nominating Committee are materially increased by the naming, each year, of one member of this important Committee. The report of the Committee on Medical Examinations will be looked forward to with interest every year.

It is proper to say here that the Illinois State Board of Health, in making its list of medical institutions recognized as in good standing, has classified them into three sections:

1. Colleges requiring four or more years of Study and four or more terms of Lectures, as conditions of graduation.

Chicago Medical College, Medical School, Northwestern University, Chicago, Ill.

Harvard University Medical School, Boston, Massachusetts.

Boston University School of Medicine, Boston.

Department of Medicine and Surgery, University of Michigan.

Homeopathic Medical College, University of Michigan, Ann Arbor.

Leonard Medical School, Raleigh, North Carolina.

2. Colleges requiring four or more years of Study and three terms of Lectures, as conditions of graduation:

California Medical College, San Francisco.

Los Angeles College of Medicine, University of Southern California, Los Angeles, Cal.

Rush Medical College, Chicago.
Hahnemann Medical College and Hospital, Chicago.
Bennett College of Eclectic Medicine and Surgery, Chicago.
Woman's Medical College, Chicago.
Chicago Homeopathic Medical College, Chicago.
College of Physicians and Surgeons, Chicago.
Medical College of Indiana, Indianapolis.
Central College of Physicians and Surgeons, Indianapolis.
Medical Department, State University of Iowa, Iowa City.
College of Physicians and Surgeons, Keokuk, Ia.
Iowa Eclectic Medical College, Des Moines, Ia.
Hospital College of Medicine, Louisville, Ky.
College of Medicine and Surgery, Minneapolis, Minn.
Homeopathic Medical College of Missouri, St. Louis, Mo.
American Medical College, St. Louis, Mo.
University Medical College, Kansas City, Mo.
Eclectic Medical College of the City of New York, New York.
Medical College of Ohio, Cincinnati.
Eclectic Medical Institute, Cincinnati.
Cincinnati College of Medicine and Surgery, Cincinnati.
Miami Medical College, Cincinnati.
Women's Medical College, Cincinnati.
Medical Department, Willamette University, Portland, Or.
University of the State of Oregon, Medical Department, Portland.
Dartmouth Medical College, Hanover, N. H.

3. Colleges requiring three or more years of Study and three terms of Lectures as conditions of graduation:

Cooper Medical College, San Francisco, Cal.
Medical Department, University of California, San Francisco.
Hahnemann Hospital College, San Francisco.
University of Denver, Medical Department, Denver, Col.
Medical Department, University of Colorado, Boulder, Col.
Gross Medical College, Denver, Col.
Yale University, Department of Medicine, New Haven.
National Medical College, Washington, D. C.
University of Georgetown, Medical Department, Washington, D. C.

Howard University, Medical Department, Washington, D. C.
Medical Department, National University, Washington, D. C.
Fort Wayne College of Medicine, Fort Wayne, Ind.
Iowa College of Physicians and Surgeons, Des Moines, Ia.
Homeopathic Medical Department, State University of Iowa, Iowa City, Ia.
Medical School of Maine at Bowdoin, Brunswick, Me.
University of Maryland, School of Medicine, Baltimore, Md.
College of Physicians and Surgeons, Baltimore, Md.
Baltimore Medical College, Baltimore, Md.
Women's Medical College, Baltimore, Md.
Detroit College of Medicine, Detroit, Mich.
Minneapolis College of Physicians and Surgeons, Minneapolis, Minn.
College of Homeopathic Medicine and Surgery, Minneapolis, Minn.
Missouri Medical College, St. Louis, Mo.
St. Louis Medical College, St. Louis, Mo.
Medical Department, University of Missouri, Columbia, Mo.
Kansas City Medical College, Kansas City, Mo.
St. Louis Hygienic College of Physicians and Surgeons, St. Louis, Mo.
Omaha Medical College, Omaha, Neb.
Medical Department, Cotner University, Lincoln, Neb.
Albany Medical College, Albany, N. Y.
University of the City of New York, Medical Department, N. Y.
Medical Department of the University of Buffalo, Buffalo, N. Y.
Long Island College Hospital, Brooklyn, N. Y.
New York Homeopathic Medical College in New York City.
College of Physicians and Surgeons, New York.
Bellevue Hospital Medical College, New York.
New York Medical College and Hospital for Women, New York.
Women's Medical College of the New York Infirmary, New York.
College of Medicine of Syracuse University, Syracuse, N. Y.
Medical Department, Niagara University, Buffalo, N. Y.
Western Reserve University, Medical Department, Cleveland, O.
Starling Medical College, Columbus, O.
Homeopathic Hospital Medical College, Cleveland, O.

Medical Department, University of Wooster, Cleveland, O.
Pulte Medical College, Cincinnati, O.
University of Pennsylvania, Department of Medicine, Philadelphia, Pa.
Jefferson Medical College, Philadelphia, Pa.
Hahneman Medical College and Hospital, Philadelphia, Pa.
Womens' Medical College of Pennsylvania, Philadelphia, Pa.
Medico-Chirurgical College, Philadelphia, Pa.
Western Pennsylvania Medical College, Pittsburgh, Pa.
Medical College of the State of South Carolina, Charleston.
Meharry Medical Department, Central Tennessee College, Nashville, Tenn.
Medical Department, University of Vermont, Burlington, Vt.

Our membership continues to increase. At present it is 570. This is an aggregate gain of nineteen over last year, when the number was 551.

By Counties it is:

Hartford,	129;	a net gain of	3
New Haven,	162;	" gain of	5
New London,	44;	" loss of	1
Fairfield,	102;	" gain of	0
Windham,	30;	" loss of	6
Litchfield,	40;	" gain of	8
Middlesex,	43;	" gain of	8
Tolland,	20;	" gain of	2
	570		19

The most prominent feature of this record is the quite large gain in two of the smaller counties—Litchfield and Middlesex—each gaining eight. More than one half our membership is in the three Counties of Hartford, New Haven and Fairfield, and the larger growth is generally in these. Even Tolland has gained two, but is still quite the smallest. Windham has sadly fallen off, having lost nine from failure to pay their taxes. The movement of the Society is:

Removed from the state,	10
Resigned, . . .	3
Dropped,	12
Died, . . .	8

There are forty-eight new members; strangely enough the same number reported last year. Following is a list of names, with address and Medical College:

George Lyman Woods, Bowdoin, Me., 1879, Collinsville.

Hubert Walter Murlless, Louisville Medical College, 1893, Hartford.

Michael Angelo Bailey, P. & S., Baltimore, 1893, Hartford.

George Newton Bell, Yale, 1892, Hartford.

Frank Lewis Waite, Bellevue, 1888, Hartford.

Charles Seymour Stern, Bellevue, 1891; A.B., College of City of New York, 1888, Hartford.

Oliver Kingsley Isham, Univ. N. Y., 1888, Hartford.

Philo Williams Sweet, Univ. Vermont, 1892, Suffield.

Arthur Nathaniel Alling, P. & S, N. Y., 1891; B.A., Yale, 1886, New Haven.

Edward Charles Beach, Yale, 1888, Milford.

Alexander William Evans, Yale, 1892; Ph.B., Yale, 1890, New Haven.

John Daniel Freney, L. I. Coll. Hosp., 1893, Waterbury.

William Joseph Delaney, McGill Univ., 1887, Naugatuck.

George Clifton Gay, Univ. Mich., 1890, Waterbury.

William Galvin, Univ. Vt., 1892, Meriden.

Charles Allen Hamilton, Univ. Vt., 1886, Waterbury.

Ralph Augustine McDonnell, Yale, 1892, B.A, Yale 1890, New Haven.

Edwin Parker Pitman, Dartmouth, 1891; B.A., Dartmouth, 1886, New Haven.

George Orrin Robbins, Yale, 1879, Waterbury.

Frederick Winchell Pirritte, Univ. Toronto, 1893, New Haven.

George Augustus Peck, P. & S., N. Y., 1891, Meriden.

Patrick Francis Strapp, Bellevue, 1892, Seymour.

Edwin Hine Johnson, Univ. Vt., 1888, Naugatuck.

William Alfred Korn, Yale, 1892, Norwich.

Morton Earl Fox, L. I. Coll. Hosp., 1893, Montville.

Robert James Henderson, Jefferson Med. Coll., 1892, Yantic.

William Henry Gray, P. & S., N. Y, 1889, Mystic.

James Albert Meek, McGill Univ., 1875, Stamford.

Daniel Gilbert, Univ. N. Y., 1890, Westport.

Charles Gordon Bohannan, Univ. N. Y., 1878, So. Norwalk.
Irving Lewis Hamant, L. I. Hosp., 1890, Norfolk.
Frank Herbert Lee, Albany, 1888, Canaan.
Joseph Alexander Livingston, L. I. Hosp. 1890, West Cornwall.
Clarence Wheeler Bassett, Univ. N. Y., 1882, Sharon.
William M. S. Curtiss, P. & S., Baltimore, 1893, Cornwall Bridge.
David Robert Rodger, P. & S., N. Y. 1888, Woodbury.
Ezra Barker Pike, Bowdoin, 1857, Morris.
John William Johnson, P. & S., Baltimore, 1893, Thomaston.
Roger Charles Downey, Univ. Vt., 1892, Portland.
Henry C. Hazen, P. & S., N. Y., 1892, Haddam.
Mary Harley, Womans' College of N. Y. Infirmary, 1892, Middletown.
George W. Lawrence, Yale, 1890, Cromwell.
John E. Loveland, Harvard, 1892, Middletown.
Kate Campbell Mead, Womans' Med. Coll., Phila., 1888, Middletown.
F. L. Smith, Univ. N. Y., 1875, Stafford Springs.
A. L. Hurd, Univ. Vt., 1890, Somers.

Of these, five have taken some Academic or Scientific degree from a college in excellent standing.

There have been eight deaths:

From Hartford	County, .	2
From New Haven	" .	5
From Middlesex	"	1

Of these the oldest was Dr. Henry Bronson of New Haven. He was a graduate of the Yale Medical School, class of 1827. His name appears first as a member of this Society in 1834. It was the same year that Dr. Beaumont visited New Haven and the Connecticut Medical Society with his celebrated patient, Alexis St. Martin. Dr. Bronson was elected President of this Society in 1869, and delivered his Annual Address on the twenty-fifth of May, his subject being: Science as a Helper; Inheritance as a Hindrance; Death as a Conservator.

David Crary, of Hartford, was a graduate of the college at Castleton, Vt., in 1834. He joined this Society from Hartford

in 1840. He was present and assisted at the first surgical operation in Connecticut done under anesthesia.

Rufus Wellington Matthewson graduated from the College of Physicians and Surgeons, New York, in 1835, and joined our Society from Norwich in 1838. He made a valuable addition to the history of this Society in his Biographical Sketches of the Original Members of the Middlesex County Association in 1877. It has been used as a mine by subsequent researchers.

Hervey Ellsworth Way, of Bristol, has belonged to Middlesex, Hartford and New Haven County Associations, his first appearance being in 1850, from Westbrook. He graduated from the University of New York in 1840.

Charles Hitchcock Pinney died on his way to the meeting of the American Medical Association, last year, just before our Annual Meeting in 1893. He always took great interest in the National Association and was its Necrologist for the State of Connecticut, for many years. He graduated from the College of Physicians and Surgeons, N. Y., in 1853.

Alfred North was a graduate of the College of Physicians and Surgeons, N. Y., in 1861, and had lived in Waterbury since his membership in this Society, in 1865.

William Henry Thomson, Yale, 1862, of West Haven, and Jacob M. Falk, Albany Medical College, 1884, of New Haven, complete the list of our dead, whose obituaries, carefully prepared, will appear in proper place in the Proceedings.

In my Centennial report, I gave a list of thirteen who had been members of the Society for fifty years. My next report recorded the death of one of those: Dr. W. W. Welch. This year there are three—Doctors Bronson, Crary and Matthewson.

I wish to call attention to the fact that, aside from one paper contributed by Litchfield County, all the papers on the Announcement are from the counties of Hartford, New Haven and Fairfield. Some method should be adopted to bring out more work from the remote portions of the State.

I wish to commend the County Clerks for the early date at which their reports have been sent in and their correctness, enabling me to issue my Annual Announcement much earlier

than before. Upon these County Clerks depends the correctness of detail of the Society.

Dr. Lindsley stated, in addition to the Secretary's report, that the Eclectic Association had sent in a list only of their own colleges, the Homeopaths, our own colleges and those from Canada as well as their own.

Delegates from other colleges were called upon and introduced. Dr. S J. Bassford, of Maine, extended the good feeling to this Society which existed in Maine. He is a Connecticut man by birth. It gives him pleasure to meet with this Society. The delightful associations he has formed will be remembered. He extends an invitation to one and all to come to his State.

Dr. Charles H. Cook, of Massachusetts, extended the congratulations of the Massachusetts Medical Society. Massachusetts owes much to Connecticut. She gave us Intermittent Fever. It has been an advantage to us. It has added to the income of our physicians, enabled them to hold meetings and to write papers. From an economic stand-point Massachusetts might bring a bill of damages. He is happy to say that Massachusetts is a close second in a Medical Bill. It is a disgrace to his State that she has been the haven of quacks and charlatans for years. The daily papers of the State have opposed this bill. It is a weak one but better than none. It has been engineered through the Legislature by Dr. Hawley, against an adverse report from the Committee. It is the strongest Bill which could be gotten through, but it is the entering wedge. Heretofore any one was qualified to take care of any part of the body, excepting the teeth. We precede you in age. Next June we have our one hundred and thirteenth meeting. We give you all a hearty welcome at that time.

Dr. Robert T. Morris, of New York, responded with a few words at the call of his name.

Dr. Lindsley asked the privilege of a personal explanation in reply to some things which he had heard were said yesterday, in connection with the Medical Practice Act. He was absent at the time. The question of privilege was granted him. As he

had heard of the discussion, the opinions expressed were widely astray from the facts, and betrayed a misunderstanding of the law. He read extracts from the law:

Section 2. Any person * * * * may fill duplicate statements subscribed and sworn to by him, * * * * and he shall also state whether he has been engaged in general practice, or only in some special branch of Medicine or Surgery, and, if so, what branch. Upon the receipt of such statements, as aforesaid, the State Board of Health shall issue * * * * to the person filing the same a Certificate of Registration which shall state the kind or branch of practice in which the person named therein is engaged.

I was criticised yesterday because in the certificates which I issued, the branch of practice was specified. That is in accordance with the law, which distinctly states that the "kind or branch of practice" *must* be stated in the certificate. I have been asked to change the certificates of certain gentlemen, so as to make them read that they were in general practice. My reply is, that to do so would be contrary to their statement, made under oath. Besides, it would do them no good. For the law further says:

Section 9. The State Board of Health shall transmit one of said duplicate statements together with a duplicate of the certificate of registration in each case, to the town clerk * * * * and said town clerk shall record the same.

It is then a matter of public record. It is the town clerk's record, and not the physician's certificate, to which people will go for information. When a matter has become a subject of public record, I cannot change it. The principal complaint yesterday came from a gentleman who is connected with one of our public institutions. In reply to the question: Are you in general practice? upon his application, he answered: No. What kind of practice? was answered, Mental and nervous diseases and Assistant in Hospital. I could not change such a record. The only relief in such a case is for the person to make a new statement. A physician may want to change his status; one in special practice may want to go into general practice,

and vice versa. I am compelled to do as the law says. If I make another record, I must account to the Comptroller for it. I am willing to do what I can to remedy the difficulty. I will ask the Comptroller if I may make another registration without a fee being charged. I was accused of interpreting the law. I do not interpret it. The law is distinct and clear. It says that certificates must be made in duplicates. I am to send one and keep one. Any certificate sent contrary to the statement made, is improper. Can a person who has registered as engaged in Special Practice, engage in General Practice? That is a matter of law, which only the courts can decide. The duties of the State Board are only clerical. If applicants make mistakes it is not the fault of the Board. I am glad to be able to make this statement; it is due to me and to the Society.

Reports of Delegates from our Society to other meetings, having been called for, Dr. Day, Delegate to the American Medical Association, reported, by letter, that he attended the meeting in Milwaukee and was pleased to find about ten Connecticut men there. The General Sessions were largely attended and particularly interesting.

At one of the General Sessions Mr. Ernest Hart, of London, Editor of the British Medical Journal, gave an Address on Cholera, which was one of the finest things I ever listened to in a medical line. The Medical Section was the one I attended, mostly.

Dr. Max Eichorn, of New York, gave a very interesting demonstration of what he calls Gastro-Diaphany, viz.:—Lighting the stomach by means of the electric lights. This is done in a dark room by means of a small electric light placed on the end of an Esophageal Bougie, the stomach having previously been emptied and a pint of water swallowed.

By this means you can, in the healthy subject, see the stomach distinctly outlined. He claims to be able to diagnosticate tumors of the stomach by this method.

The hospitality of the citizens of Milwaukee was all that could be desired. A number of private individuals gave princely receptions to the members of the Association. I should say the meeting was a success, both from a scientific and a social standpoint.

Dr. Colebnrn, Delegate to the International Medical Congress at Rome, reported as follows:

Mr. President, and Members of the Connecticut Medical Society:

As your delegate, I had the honor of attending the International Medical Congress at Rome last month, and of meeting some of the most noted professors of our art. You will all have read before this, fuller and better accounts of the proceedings than can be given at this time, and know that the Congress was the largest and one of the most successful, in many respects, ever held.

The immense size of the Congress, exceeding so much the expectations of the management, rendered some of the arrangements almost farcical and in some ways was a drawback to the success of the Congress.

Easter occurring so shortly before, Rome was full of tourists and lodgings were at a premium for a fortnight previous to the opening.

The Congress was formally opened at the Constanzi Theatre, Thursday morning, March 29th, by the King of Italy. The Queen and members of the Court were present, in addition to the officers of the Congress, the official delegates from all over the world, and a large assembly of members and guests; nearly seven thousand in all.

The delegates were welcomed in addresses by Prime Minister Crispi, Prof. Bacelli, Minister of Public Instruction, and The Syndic of Rome, all examples of superb oratory.

Responses were made by the Chairmen of the various National Committees.

The American Chairman, unfortunately, did not arrive until two days later, and owing to lack of knowledge of his whereabouts, the United States had no representative ready to respond to the welcome.

The general meetings of the Congress were held in the Eldorado Amphitheatre. Some of the brightest minds in medicine delivered addresses there and the attendance was only limited by the size of the hall. Most of you have already read abstracts at least, of the addresses delivered by Virchow, Michael Foster, Jacobi, Nothnagel and others, and can form an

adequate idea of the earnest sentiment and lofty eloquence that characterized the whole Congress.

The Policlinico Muberto First, in which the meetings of the nineteen sections of the Congress were held, is a magnificent structure, admirably adapted to the purposes of the Congress, and when completed will be one of the most perfect hospital buildings in the world. It is a mostly two-story edifice, of stone, on the pavilion plan, and afforded abundant room for the Congress.

The general governmental and department offices, the press rooms with telephones and messengers, the editorial offices of the Official Journal and a restaurant were established on the ground floors, while the sessions of the sections were held mostly on the upper floors of the various pavilions. The Policlinico was the rallying point for the whole Congress, and celebrities from all over the world met there in earnest discussion.

The attendance from America was not as large as at the last Congress at Berlin. Two hundred were registered, but this included those from Canada, Mexico and Central and South America.

Of the various sections it seemed to be in Surgery that America was best represented, and here earnest and almost heated discussions occurred over papers by our fellow countrymen.

In nearly all the other sections there was such a predominance of other tongues that a paper in English was a rarity. Over half the members present were Italians and naturally most of the papers read were in that language. Of the other official languages, papers in German predominated, although many of the essayists from Spanish and Portugese countries read their papers in French.

The Medico-Hygienical Exhibition was rather smaller than had been expected, and the display of modern Surgical Instruments and Appliances was somewhat meager. On the other hand the Sanitary exhibit was very complete and interesting, and included models of the work now under construction at Rome to drain and raise the lands on either side the Tiber and other examples of Sanitary engineering.

The villas along the river were low in situation and liable to be overflowed. An abutment eighteen feet high is being built so that Rome from being an unhealthy is being made a healthy city.

The social side of the Congress was quite as fully developed as the scientific, and Rome extended her hospitalities generously. The public galleries were thrown open to the Congressionists and receptions at the Capitol and elsewhere, the Queen's Garden party and the fêtes and illuminations in honor of the Congress served to profitably occupy the intervals between the sessions.

The various Hospitals and Asylums of Rome were also visited and everywhere the guests were cordially welcomed.

On the whole the Congress, if disappointing in some details, was in most respects an eminent success and will live a vivid and pleasant memory in the minds of its members, contributing, in the words of Professor Virchow, "to strengthen knowledge of truth, to enhance the intensity of the moral aspirations and to tighten the band of fraternity between the colleagues of all countries."

Dr. Hazen had the pleasure of attending the meeting of the Maine Medical Association, at Portland. They have a session of three days and one evening, Wednesday. The papers read and discussed, on Appendicitis, were very interesting. He did not attend the reception and so lost a very pleasant part of the occasion. He was impressed with the scientific aspect of the meeting—the brainy men they raise in Maine, which has her full proportion. Dr. Bassford said he was born in Connecticut. It was a happy thing. He himself is humiliated to have to acknowledge that he was born in Massachusetts. Dr. Cook was born in Vermont. None of us need glory.

Dr. Flint had the pleasure of attending the annual meeting of the Massachusetts Medical Society, as a Delegate. The meeting was held in Boston on the the thirteenth and fourteenth of June, 1893. There were present Delegates from Maine, New Hampshire, Rhode Island, New Jersey, and New York, besides Connecticut. We were cordially welcomed by the Society through its officers, as well as by individual members. The papers were interesting and profitable.

Dr. Osler, of Baltimore, was present and participated in the discussion on the Treatment of Pneumonia. He also delivered the annual Shattuck lecture, in the evening following the first day's session.

In the discussion on Diphtheria Dr. Councilman, of Boston, gave in describing the Pathological Anatomy, a truly scientific and exact exposition of the differential diagnosis of the various pseudo membranous throat affections.

Dr. Thorndike, of Boston, exhibited a collection of the modern instruments used in Genito-Urinary Surgery, pointing out with wise discrimination the faults and advantages of each.

The annual discourse by Dr. Nichols, of Cambridge, on the "Misuse of Drugs in Modern Practice," was an eloquent and elegant literary production, full of wholesome thought, though perhaps rather too conservative in tone to fit the regular practice of the present day. He said: "The relation of the physician to his patient is a sacred one. The sick man puts his life in our hands. He follows our directions without question. We have no more right to experiment on him with doubtful drugs without his knowledge than the surgeon has to perform an operation without his consent. The law protects him from the operation he does not consent to; the moral law alone guards him from the drug which may be more dangerous than the surgeon's knife. The first great law in therapeutics is, to do no hurt."

The absence of legislation regulating Medical Practice in the State was severely commented upon by members of the Society in conversation, and agitation of the subject has recently resulted in the passage by the Senate of a Registration law.

Dr. Fleischner then read the report of the Committee on Matters of Professional Interest in the State. It was devoted principally to the subject of Appendicitis.

After an intermission of fifteen minutes the time had come for the President's Address, which Dr. Edgerton read, the subject being, Standard Dietaries applied to the Nutrition of Acute Diseases. At the close of this address the meeting adjourned for the afternoon session.

THE AFTERNOON SESSION

began at 2 P.M.

The first paper read was "La Grippe" and its Pathology by Dr. O. T. Osborne.

Dr. Seth Hill followed with Progressive Medicine and Disease.

Appendicitis and its Treatment, by Dr. Topping, was followed by some remarks by Dr. Morris, who referred to Dr. Fleischner's statistics in his morning report. Statistics are valuable. We want them in the interest of science, not of ourselves as individuals. In these facts given was a long list of deaths. Why did these people die? Because they carried about with them affected appendices. If they had never had any of these parts there would have been no deaths, no suffering from appendicitis. The next thing to having no appendix is having it removed before it becomes much diseased; before the disease has made much demonstration. If it could be removed early in the attack, thanks to the method of to-day, the patient would be safe. A small incision leaves the patient in good condition. If there is difficulty of diagnosis at the safe time to save the danger, the patient has to spend days in bed. The symptoms leading to diagnosis are readily discovered by most of us who have given attention to the subject. The subject is new. We have had to throw out much testimony, good, bad and indifferent. We know that Appendicitis is marked by a sudden visitation, that it is attended with general abdominal pain, vomiting, usually bilious, repeated, then ceasing, rigidity of the abdominal muscles, a rebounding of the abdominal muscles when struck, something like a clonic spasm. Fluctuation at McBirney's point is usually present. We must not make much pressure here, because the exudates become liquified after bruising, and this liquifying process is serious. The examination must, therefore, be incomplete. The onset is sudden, with general abdominal tenderness, pain in the right iliac fossa; later, vomiting. Hardly another acute condition gives such symptoms. The methods of different operators have been published and are within the reach of all. The essential point is, we are not interested in the patients who will recover. Our interest is for those who are going to die.

We cannot tell at first. We cannot tell the sheep from the goats in the dark. But as soon as we can separate them, we have so many cases for prompt surgical interference.

There being no further discussion, Dr. Ring read a paper, An Appeal for a State law to Prevent Blindness. At its conclusion, Dr Ring offered the following resolution:

WHEREAS, There are in the United States several thousand persons who have become blind because of ophthalmia neonatorum, and

WHEREAS, This unfortunate result is largely preventable, being due to the neglect of midwives and nurses, therefore

Resolved, That it is the sense of the Connecticut Medical Society, that the following law should be enacted:

The People of the State of Connecticut, represented in Senate and Assembly, do enact as follows:

Section 1. Should one or both eyes of an infant become inflamed or swollen or reddened at any time within two weeks after its birth, it shall be the duty of the midwife or nurse having charge of such infant to report, in writing, within six hours, to the Health Officer, or some legally qualified practitioner of the city, town or district in which the parents of the infant reside, the fact that such inflammation or swelling or redness of the eyes exists.

Section 2. Any failure to comply with the provisions of this Act shall be punished by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

Section 3. This Act shall take effect on the day of , 189

It was seconded by Dr. Wilson, who said that the matter was stated in a practical way. It had been tried and found good. There is a large number of blind who need not have become blind. If this law saves some it will be a good thing.

Dr. Fleischner moved that the subject be referred to the Committee on Legislation, which was done.

Dr. Eliot next presented a paper on the Gravity of Hysteria. In discussing it, Dr. White remarked: We have very many

cases of obscure nervous diseases; some are called hysteria, hystero-epilepsy, spinal meniugitis, and other names. We seldom obtain a post-mortem. After a long practice he had never examined one who had died of hysteria pure and simple. Some of these cases were interesting to refer to. One came to the Hospital with hystero-epilepsy. There was some epilepsy, some signs of hysteria and depressed nervous symptoms generally. Both ovaries were removed, and I was requested to make an examination of them. Nothing was found that might not be found in any case. Yet a cross section of the ovary showed that nine tenths of its substance was taken up with enormously enlarged Graafian follicles. Wherever it was cut the same condition was found. The other one was in the same condition. This patient recovered so that she could walk well and was apparently well for six months, when the symptoms returned.

Another patient was said to have hystero-epilepsy. Her mind was somewhat wandering; she could not remember events. She died with a diagnosis of multiple neuritis. The post-mortem showed the ovaries iu the same condition as in the other case. The medulla oblongata, crus cerebri and cerebelli, showed degeneration of the nervous system—colloid bodies, closely connected with the blood vessels. He has made post-mortems in other cases of nervous diseases and has found the same thing. This kind of degeneration is not confined to epilepsy or hystero-epilepsy.

In another case the ovaries were removed. Their appearance as seen by the naked eye, before removal, was healthy. On removal, a similar degeneration was found, but not so extensive. Amylaceous degeneration of the spinal cord is found in other conditions. In a case of myelitis the cord was shriveled and atrophied; in the cervical and lumbar regions it was not much more than one half its normal area. There were colloid and amyloid bodies, which took the stain of aniline and methyl violet. His conclusion is that this condition of epilepsy and hystero-epilepsy is related to myelitis. But the number of examinations has been so small that the condition can not be determined as positive. Examinations should be continued. The members of this Society should do it whenever they get a chance. If they

will put the specimen in alcohol and send it to him, he will make the microscopic examination.

The regularly appointed Dissertation, The Etiology of Malaria, with Remarks upon the Diagnosis, was read by Dr. LaPierre, in the absence of Dr. C. B. Graves, the Dissertator.

Dr. A. G. Cook presented a very interesting paper on Fixation in the Treatment of Fractures in Joints.

The Report on the Progress of Medicine was offered by Dr. D. Chester Brown. It was carefully prepared and treated principally of Inflammation of the Pancreas, citing interesting cases.

Some New Remedies used in Dermatology, was the title of the next paper, which was read by Dr. Fleischner.

Two other papers closed the literary exercises of the day—A Case of Gunshot Wound of the Subclavian Artery and Vein, by Dr. Swasey, and The Influence of our Great Industrial Establishments on the People, from a Sanitary Standpoint, read by Dr. E. P. Flint, for Dr. Doutteil, who was suffering from a pharyngitis and was not able to read.

The papers which had been read were referred to the Committee on Publication. The others on the program were read by title and similarly disposed of.

A resolution of thanks was voted to Dr. Fleischner for the care and labor he had taken in the preparation of his Report on Matters of Professional Interest in the State.

The Convention adjourned at 5:45.

Two very pleasant social features of the occasion and connected with the meeting were

THE RECEPTION

given by Prof. Leonard J. Sanford who most delightfully greeted the members at his residence, on Wednesday evening.

THE BANQUET

also furnished a most happy time to all who participated therein. There was a fine representation of the Society present.

The speaking was able, entertaining and ennobling. Toasts responded to were:

Our Society.—President Edgerton.

Science and Tact.—Prof. Geo. P. Fisher.

The Minister and the Doctor.—Rev. Dr. Newman Smythe.

Our Friend, the Press.—Hon. Norris G. Osborn.

Law.—Morris F. Tyler, Esq.

Political Economists and Doctors.—Prof. Arthur T. Hadley.

Dr. Robert T. Morris, of New York, also happily responded when called upon.

PRESIDENT'S ADDRESS.

STANDARD DIETARIES

APPLIED TO

THE NUTRITION OF

ACUTE DISEASES.

PRESIDENT'S ADDRESS.

STANDARD DIETARIES APPLIED TO THE NUTRITION OF ACUTE DISEASES.

Gentlemen—Members of the Connecticut Medical Society:

The late Sir Andrew Clark began one of his addresses by saying: "The first observation I make to you, is a curious but an important one: it is that the laws of health are not suspended because a person is sick." Later on he remarks, "it is not so much the big things of life; it is the little things, that make and unmake health."

The great advantages of Medical Societies to the profession is not only that new thoughts and facts may be announced and discussed, but that through such discussion and study the every day practical management of patients, may be reduced to the best method and that a general consensus of professional judgment may produce a uniformity of treatment based on the soundest physiological and therapeutical principles.

I have proposed to call your attention to the proper diet for acute diseases, accompanied with fever. There is no subject of so much practical importance, in the treatment of acute febrile disease, both to patient and physician, as what nourishment shall be given. The quality and quantity may diminish or increase the intensity, and shorten or prolong its continuance. Nutrition is regarded by the patient and his friends as of little importance because of want of appetite and the patient is often permitted to become exhausted, so that various complications not necessarily a part of the symptomatology ensue. Many patients are so violently ill that nothing will avert a fatal termination, others so mildly attacked, that neglect of nutrition will not produce a fatal result, but there are a very large number where from the long duration and moderate intensity, neglect of sufficient nutrition will cause a fatal result, because of such neglect, while continued and thorough sustentation would support the exhausted

vital forces till the disease has run its course and recovery takes place as the sequence.

The process of digestion is both mechanical and chemical. By the teeth the food is torn, crushed and prepared for the action of the various digestive fluids. The water of the saliva softens the food and aids in its deglutition. The ptyalin of the saliva changes a small amount of the starch foods into dextrine and sugar, but neither the water or ptyalin could act upon the grain of wheat with an unbroken envelope. So with other cereals and the seeds of fruits and vegetables, which cannot be readily acted upon by the digestive fluids. The solid foods need to be finely divided and this is brought about by the teeth and again further aided by the mechanical action of the stomach, so that they are reduced to a form in which they may be acted upon by the gastric juices, the pancreatic secretion and the bile.

Physiologists have divided all nutrients into four classes: (1) Proteids. (2) Fats. (3) Carbohydrates. (4) Mineral Ash.

The *Proteids* are varied and complex in their physiological chemistry but contribute no small part in the construction and repair of our bodies. They constitute the chief nutrient portions of lean meat, white of eggs, cheese, which, in a general way, represents the casein of milk, gluten from wheat and gelatinoids from bones and tendons. The essential chemistry of the gastric juice consists of a combination of pepsin and hydrochloric acid. While the primary acid is hydrochloric, during digestion other acids are developed, especially lactic, butyric and acetic together with free vegetable acids, such as malic; the result of the decomposition of the salts contained in the food. Lactic acid is probably a constant physiological constituent of the gastric juice. The proteids are digested in the stomach, the hydrochloric acid causes them to swell and the presence of pepsin produces a rapid solution.

The physical condition in which the food reaches the stomach contributes materially to the rapidity and ease of the process, therefore the more finely divided and the more free from fat, flesh is, when it reaches the stomach, the more quickly is it prepared for absorption. The retention of food in the stomach causes the development of butyric acid, which is irritating to

the gastric and contiguous mucous membranes. The albuminoids are converted into albumoses and peptones, and the peptones are still further split up, before absorption, for they do not appear in the blood as peptones.

Fats are derived from the fats of animals and fish, meat, milk, wheat, corn, olives and other plants. They are digested in the intestines Fats may be absorbed moderately as soaps, though emulsion is the usual form in which fat is absorbed. The neutral fats and fatty acids are emulsified in the intestines if there in large quantity, and through the agency of the bile become absorbed. Fat is also "actually formed in the animal body and the fat present at any moment in the body is not exclusively, if at all, fat merely stored up from the fat of food." (Foster's Physiology, 5th American edition, page 620).

"The carbon elements of the newly formed fat may be supplied either from carbohydrate food or from the carbon surplus of proteid food or from fats taken as food which are not natural constituents of the body fat." (Foster, page 620, Am. ed).

The Carbohydrates enter the body chiefly as starch, cane sugar, grape sugar, with sugar and cellulose. They are as fuel in the formation of heat and potential energy. They may be converted into fat and stored up as such for future use. The digestion of the carbohydrates is accomplished mainly by the pancreatic and intestinal juices in the small intestine.

The Mineral Ash is represented by what remains after incineration and consists of various chemical salts, mostly those which give firmness to the osseous structure of the body, phosphate of lime being the principal salt, and it is present in all tissues.

In addition to these nutritive principles *water* forms a large proportion of the food which we take into our stomach.

The sum of the proteids, fats, carbohydrates and mineral ash constitutes what is known as *water-free food*, and their value as food is estimated by the amount of potential energy which they produce, and is measured by calories or foot-tons. One gram of fat produces nine and three tenths calories; that is, when a gram of fat is consumed in the body and converted into heat, it will produce enough heat to raise the temperature of nine and

three tenths kilograms of water one degree centigrade, or if it be changed into mechanical energy it would furnish as much as would raise one ton, fourteen and two tenths feet.

The following estimate, made by Prof. Rubner and taken from the "Report of Storrs' Agricultural Experiment Station for 1892," has been thus tabulated by Prof. Atwater:

"POTENTIAL ENERGY IN NUTRIENTS OF FOOD."

	Calories.	Foot-Tons.
In one gram of protein,	4.1	6.3
In one gram of fats,	9.3	14.2
In one gram of carbohydrates,	4.1	6.3

Prof. Atwater says, (Page 163, Report of Storrs' Agricultural Experiment Station for 1892): "A pound of lean beef and a quart of whole milk contain about the same amounts of nutritive material."

Pavy in his work on "Food and Dietetics," (London, 1870), gives the following analysis for "Lean Beef after having been cooked and no dripping having been lost," made by Dr. Letheby. (page 92):

Nitrogenous matter,	19.3
Fat,	3.6
Saline matter,	5.1
Water,	72.0
Total,	100.0

This analysis makes the total amount of water-free nutritive principles twenty-eight per cent.

The following table shows the composition of cow's milk according to Dr. Letheby's analysis and is also taken from Pavy's "Food and Dietetics" (page 117):

Nitrogenous matter,	4.1
Fatty matter,	3.9
Lactine matter,	5.2
Saline matter,	0.8
Water,	86.0
	100.0

This gives fourteen per cent. of solids and would give the same amount of water-free nutritive principles for a quart of milk or a pound of cooked lean beef.

Dr. Pavy (page 117) says: "One pint of milk of the above composition reckoned at a specific gravity of 1.030, which will give 9012 grains as its weight, will contain the following amounts of solid constituents:

Nitrogenous matter,	369	grains	0.843	ozs.
Fatty matter,	351	"	0.802	"
Lactine,	468	"	1.069	"
Saline matter,	72	"	0.164	"
	1260	=	2.878	"

Dr. Parker, (Practical Hygiene, 5th edition, page 193), gives sixteen ounces as the amount of water-free food required as the average daily diet of men in quietude. Sixteen divided by 2.878 = 5.55 + pints of milk, which would be required to sustain a man in quietude. This estimate is for imperial pints, which reduced to United States measure would give (about) 360 calories as the value of a pint of milk of the specific gravity of 1.030. Applying the value of a pint of milk to the following diet standard from Hammarsten (Physiological Chemistry, Am. ed., pages 479 and 480):

	Calories.		Pints of Milk.
Persons not working,	1667—Schuster—	requires,	4.63
Persons not working,	1709—Voit,—	"	4.74
Men in poor house,	1985—Forster,—	"	5.50
Women in poor house,	1735—Forster,—	"	4.79
Swedish soldiers in peace,	2900—Almen,—	"	8.00
Swedish soldiers in war,	3250—Almen,—	"	9.00

The various diet cures of corpulency are based on the relative increased value of proteids over the fats and carbohydrates, but the potential energy of the food given is greatly diminished as a whole. The Banting cure is represented by 1066 calories; the Ebstein by 1391. Oertel's by from 1124 minimum to 1557 maximum, hence they are in reality starvation cures. The contrast can be seen when compared with the daily average for

adults given by Voit, 2810 calories for men and 2240 for women, (Hammarsten, page 475, Am. ed.) or Forster's daily average required by a physician, 2500 calories. Of course all estimates will vary, for no two experiments show exactly the same result and no two analyses of the same food give the same figures, therefore the figures employed are approximate only.

So far as I have studied the dietary standards, which are by no means so very numerous, they have been those for persons in good health and the observations, upon which they were based, were made on those not sick.

Playfair and Moleschott have formed their dietary standards by estimating the total amount of food consumed by large bodies of men. Voit and others have estimated the daily amount of food required by the amount of carbon and nitrogen in the excreta. Voit represents the German, Payen the French, Playfair the English, Hammarsten the Swedish, Moleschott the dietary standard of the Italian. Prof. Atwater of the Wesleyan University has studied the subject extensively and established dietaries of his own for men engaged in various employments, and has published his tables. He compares his own standards with the European and finds they exceed by far those of Europe in potential energy. Food in the United States is cheaper and better in quality and he thinks the American eats too much though he is of the opinion that the American requires more because of his greater activity.

There is a large field before the scientific physician for good practical work, in the study of the food requirements of persons ill from various diseases, to study the effects of fever of different temperatures and other conditions in the consumption of the various nutritive principles, and establish data for the guidance of the physician in the feeding of his patients. The subject is intricate, difficult and complex, one to which few only of the general body of practitioners have given study and thought. I have called your attention to this subject in order to emphasize the relative value of milk as a food and to establish the probable quantity which would be required daily to nourish a patient whose disease would not permit him to eat solid food. In endeavoring to get some physiological data as to how much milk

would be required to snstain the nntritive equilibrium of the human body, I have considered the minimum quantity required for existence. Of course the capacity to digest a sufficient quantity may be wanting, bnt we can improve the digestive capacity better with a milk diet, than with anything else. I have demonstrated by means of food analysis and established dietary standards, that from two and a half to four and a half quarts of milk are required to maintain the human body, depending upon the state of activity of the individual, and have chosen rather the minimum dietary standards as those representing the requirements of a person confined to bed by disease, and as being in all probability in quantity all that the weakened digestion of disease would be able to assimilate. Besides, do all we can by means of diet, we scarcely expect to prevent a patient with acute disease, from consuming some of his stored-up fat in a long continued illness. Nature withstands disease better in the well nourished, the convalescence is quicker and there is less danger of the development of other diseases, as very many of them are incidents of exhaustion and debility.

The study of the physiology of gastric digestion has occupied the attention of physicians since the time of Hippocrates, who regarded it as a process effected by heat and named it Coction. Asclepiades and Celsus entertained similar views. Van Helmont introduced the fomentation theory. Descartes and Borelli of the introchemical school of medicine, considered digestion accomplished by a strong acid. I quote somewhat at length from Van Sweiten, (Commentaries on Boerhaave's Aphorisms, Vol. 1, Page 55, Edinburgh Edition, 1776).

"The first cause mentioned of the too great weakness of the fibres, was the imperfect assimilation of the crnde aliment into the snbstance of the last concocted matter, which is the most subtle of all others and runs in the smallest vessels. Now to make the fibres strong, there is required a snbstance proper to be applied to them: bnt this is such a snbstance as, having undergone the action of the viscera and vessels according to the laws of a healthful body, has acqnired the last and most finished degree of perfection; but as the fibres are now supposed to be too weak, and the aetion of all the vessels on their contained

fluid depends on the due strength of the fibres, the several functions employed in changing the crude aliment into our nature will be less able to discharge their office, and consequently the less concocted matter subservient to nourishment in such a body will not be duly prepared. For this reason it is that physicians often wonder why very good food given to a man in this weak state does not procure proper nourishment; but as this food only supplies the remote matter out of which the vital functions are to form nourishment, when these functions are injured, let the food be ever so good, it is in vain."

"While the tender embryo lies in the mother's womb it is nourished by the humours which have been prepared by the mother; for so weak a little body could not draw its nourishment from any other body less assimilated."

"When it is born, the milk supplies it with humours prepared in the body of its mother. And thus the medicinal art, in imitation of the method pursued by nature, appoints such nourishment for weak bodies, as is already prepared in the body of some healthful animal of which the principal is milk." Van Sweiten affirms that milk is nearest to the chyle and therefore in all diseases of excessive debility it will become absorbed when other food will not. He also urges frequency of administration and small quantities: "Errors are very often committed here, by making too much haste to repair these weak bodies. The giving too much at once will oppress rather than relieve. If this rule be not observed, everything else though otherwise the most proper, will avail nothing." Sydenham (Sydenham's Works, by John Swan, London, 1749), says: "But what is most surprizing" (spelling quoted), "in the method of cure is that milk which yeilds only a crude and cold nourishment should nevertheless by use strengthen the spirits, and yet this will not seem at all repugnant to reason if it be considered that milk affording only a simple aliment, does not give nature so much trouble in digesting it, as food and liquors of a more heterogeneous kind do." The translator of Sydenham's work, (John Swan) in a foot-note says: "Milk is so far from being a crude and slender aliment that it is in general a very proper and wholesome medicine and diet for weakly, consumptive or gouty persons whose digestive faculty is

impaired because it is easy of digestion and affords a copious nourishment, but in order to make it effectual for the purpose it is given, it should be drank freely and the use of it continued for a considerable time."

The translator also quotes the following from a cotemporary work on the Practice of Medicine: "Milk, says Dr. Langrish, is universally esteemed the best restorative, it being chyle already prepared and most easily assimilated into the blood and converted into nourishment. All milk is of a soft, cooling, nourishing nature, putting the least stress upon the several organs of the body to digest it, and affording as few excrementitious particles as can be." (Modern Theory and Practice of Physic, Note 123, Sydenham's Works, by John Swan, London, 1749).

The remarks on the management of the diet by John Huxham, whose name is so closely associated with Peruvian Bark, are also very interesting.

He says: "It is obvious that we should always begin with small or very moderate Doses of all kinds and that not only the Physic but the Drink and Diet of the Sick also should be prudently regulated; for surely what we use by Ounces and Pounds cannot but considerably affect us as well as what we take by grains and scruples." (Huxham on Fever, Page 45, 4th edition, London, 1764).

Again he says concerning the treatment of slow nervous Fever: "The temperate, cordial diaphoretic medicines are certainly most proper in these fevers and a well regulated, supporting, diluting diet is necessary. The latter of itself judiciously managed will go a very great way in the Cure." (page 13). "As to the manner of Dilution I think the sick should be allowed to drink as freely and as often as they please but not forced to load their stomachs with too large Draughts at a Time, which creates Nausea, Indigestion and Wind with great Anxiety and Restlessness and in the Event Vomiting or Purging. * * * I think smaller Draughts frequently given, the best way of Dilution: For the same Quantities of Liquor drunk in a certain Time more is like to be imbibed by the absorbing Vessels planted thick from the Mouth to the Stomach, by frequently sipping it down, than if swallowed at once in a full Draught. * * * Besides

when swallowed the action of the Stomach and Intestines, is more effectual in squeezing it into the Lacteals and Mesaraic Vessels when in small Quantities than when they are, as it were, deluged with Liquor." (The capital letters as in the original).

Cow's milk consists of an emulsion of very finely divided fat suspended in a solution of albuminoids, milk sugar and mineral salts. It contains the representatives of all the substances, which make up the animal body and is therefore a complete substance for nutrition. It is non-transparent and white in color and of faintly sweet taste. The reaction is usually slightly alkaline, though it may have an acid reaction. When exposed to the air it gradually changes and the milk sugar forms lactic acid. It does not coagulate when boiled while it remains fresh, and when sterilized by heating and kept from the micro-organisms of the atmosphere the formation of lactic acid is prevented. When kept at freezing point for a considerable period it remains sweet for a much longer time. It may be coagulated with rennet and still have an alkaline reaction. Hence this coagulation is not an acid coagulation which is dependent on the formation of lactic acid. Milk has all the elements of nutrition; the proteid (lacto-globulin, lact-albumin and casein) carbohydrate (milk-sugar), the fat (the milk-globules) and the mineral salts held in solution in the milk plasma. Concerning the digestibility of milk Prof. Atwater says that all the proteids are digested, ninety-six per cent. of the fat, and the whole of the carbohydrates, altogether twelve and three tenths per cent. of the whole weight, to say nothing of the mineral salts or the water. The composition of cow's milk is different from human milk in that the casein is relatively in greater quantity, the sugar less and the fat less, therefore by taking the top third of the cow's milk after it has stood long enough for the fat globules to rise to the upper portion and adding water to equalize the proportion of casein, also adding sugar (preferably milk sugar) to increase the proportion of lactose, we have a liquid very much like human milk. Many physicians add some carbohydrate to the cow's milk, sugar, starch or some food prepared from some of the starch giving preparations. This is the theory of very nearly all the infant food preparations sold. The objections are

that it is not an animal food, that the grains of starch require some digestion before they are absorbable and that this extra labor thrown upon the weakened digestive function often proves enough to destroy the digestive power altogether and the stomach rejects it by emesis.

There is another class of foods brought forward by the pharmacists for the use of the physician, called pre-digested foods.

When the process of artificial digestion is applied to animal substances other than milk, there is probably no change that offends very greatly the stomach and these are in a state finely divided, so that the digestive fluids can more rapidly dissolve them.

The various digestive principles chiefly used are pepsin, lactic acid and pancreatin. When those are applied to the digestion of milk outside of the stomach, they produce an acid coagulation, and form a hard, solid mass of the casein of the milk which does not facilitate its digestion. None of these preparations of themselves are sufficient to afford the required nutriment and all of them contemplate the addition of milk. Their projectors do not claim their real value to be nutrients in themselves, but that they contain enzyms to further the various digestive processes. They are apt practically to derange the digestion whatever may be the reason. The coagulation of casein in the human stomach is not an acid coagulation, but brought about by the rennet enzym and takes place when the gastric juice is neutral, or when neutral rennet is used for the purpose.

The coagulating agent is neither pepsin nor acid, for it has no effect on the digestion of proteids, neither does it act as a ferment in the production of lactic acid whenever the chemist undertakes to extract this ferment and apply it to his artificially digested food. Clinical observation shows that they are apt to generate an acid fermentation in the milk which must always be the major part of the food product and derange the stomach so as to cause vomiting.

I know that many physicans will disagree with me and that too from their clinical experience, but what I believe is that milk in its unchanged state will afford a larger nutritive result than when modified by any products of the chemist. The first change

when milk is ingested is this curdling and it is essential to its easy digestion that it should be normal and not an acid condition and just here is probably the starting point of stomach derangement from milk digestion. It may be an essential fault of the stomach itself and whenever this is the case is to be treated as such. It may be the result of exhaustion and debility of the system from other diseases. Whatever may be its cause it will not be benefited by foods that cause additional fermentation or throw extra labor upon the digestive functions.

This coagulating principle which Foster calls rennin, (Text Book of Physiology, 5th Am. ed., page 316), is largely dependent on temperature and is destroyed by boiling. Hence any pre-digested food made of starch, must be previously cooked, before the pepsins and pancreatin are added.

"If milk is sterilized by heating and contact with micro-organisms prevented, the formation of lactic acid may be entirely stopped." * * * Hammarsten says: "If freshly-milked amphoteric milk is treated with rennet, it coagulates quickly, especially at the temperature of the body, to a solid mass, (cheese) from which a yellowish fluid (sweet whey) is gradually pressed out. This coagulation of milk occurs without any change in its reaction; it may also take place with the very faintest alkaline reaction; therefore it is distinct from the acid coagulation." (Hammarsten's Physiological Chemistry, 1st Am. ed., by John A. Mandel, page 302.)

Whenever coagulation is modified by acid from any source it requires correction by lime water, soda, carbolic acid, or salicylic acid. The mineral acids do not seem to interfere with it while the vegetable acids are very apt to cause disturbance even in those who are in perfect health.

It is just here that our subject affords a study of the practical management of a milk diet. It is important that the milk should be fresh and that every care should be taken to prevent micro-organisms from coming in contact with it. Sterilize it, if you wish, but be sure that you get it night and morning fresh from the cow, particularly when you have a sensitive stomach to feed. In hot weather, it is almost impossible to take the milk as it is delivered by the milk-man and keep it twenty-four hours

without some process of sterilization. Whenever, from the effects of electrical showers or from extreme weather or any other cause, there may be the slightest lactic acid fermentation, do not use it. The milk-man ordinarily delivers in the morning the milk of the milking of the night before mixed with that of the morning, so that a portion becomes thirty-six hours old before the supply is exhausted the following morning, and any change of the older milk affects the whole. It has started well on with a lactic acid development, prevents the normal coagulation, and when it reaches the stomach it takes at once the acid coagulation. This produces a caseous mass which is tough and non-friable and sets up a continuous acid fermentation which only a complete absence of milk in the stomach will end. This causes pain, restlessness, eructation of acid gas—perhaps vomiting—exhausts the vital forces and increases the temperature of a febrile disease. It is important that all other nourishment, drinks and medicines, should be such as not to disturb the normal digestion of milk. Many patients are given lemonade and acid wines, juices of fruits as a drink at the same time. Other articles of food that cause indigestion unfit the stomach to digest the milk or anything else. So medicines, such as may change the character of the milk should be avoided and studious care should be taken to correct any functional derangement which may prevent a proper digestion of the milk. It is interesting to observe that where practice has established a useful fact, physiological chemistry at some later period explains the reason. Since water has very long been used to assist the digestion of milk Hammarsten says, (Text Book of Physiological Chemistry, page 305): "The property which is the most characteristic of casein is that it coagulates with rennet in the presence of a sufficiently great amount of lime salts. In solutions free from lime salts casein does not coagulate."

As an example of acute disease let us consider the diet suitable for a patient having typhoid fever. This is a disease where the temperature may run high; where there is often a sudden invasion which may cause vomiting and produces a weak state of the system which may almost completely arrest gastric digestion. It has its lesion also in the intestines and therefore a diet

would be the more suitable in proportion, as there was little nndigested material to pass over the diseased, perhaps ulcerated glands of Payer and by that irritation cause increased fever or intestinal hemorrhage. Milk is the ideal diet for such a patient. It is almost wholly digested in proper quantities. Of course the ordinary articles of food with a large amount of undigested waste are nnfit. All solids are also unfit becanse of the amount of labor thrown upon the digestive functions to prepare them for the absorption of their nutrient principles. Therefore all food given such a patient must be liquid and such as may be most easily assimilated. The disease being at best somewhat protracted, the diet must be a food and not a mere stimulant. As the general tendency of the disease is toward diarrhea as a symptom, it must be of such a character as not to cause too frequent dejections.

Beef-tea and the liquid meat foods are merely stimulants and they cause diarrhea when long continued, therefore they are worse than useless. Dr. H. C. Wood says, (Therapentics, Its Principles and Practice, page 29): "The cooked concentrated liquid forms of meat extracts are beef-tea and beef-essence. Neither of these can be considered to have distinct nutritive value. It is very rare for them to contain more than one per cent. of albnminous substances." Again, page 27, Dr. Wood says, concerning liquid meat foods: "It must be remembered that all articles of the present class are stimulants rather than nutrients. * * * * At one time these liquid preparations of meat were supposed to represent the whole nutritive value of the meat, but recently all nutritive power has been denied to them. * * * The experiments of Kemmerich also indicate very strongly that they are not nntrients, for he found that animals fed exclusively npon these preparations died even more quickly than those left to starve." *The Extracts of Beef* represent only a very small qnantity of the nntrient principles of beef. They are prepared from lean beef from which fat and tendons have been thoroughly separated and contain the mineral salts, creatin, creatinin and other organic substances. They are variable in their strength and those prepared by the later methods of expression by powerful hydraulic pressure probably contain more

of the proteids than those prepared by the older methods. Extract of beef has had the reputation of being a strong stimnlant and has been used in states of collapse and exhaustion from excessive fatigne. The introgenous products are not albuminons and according to Dr. Parker do not represent a true nutritive albuminate. Liebeg considered it a condiment which increased the power of the stomach to digest vegetable food. Probably it derives its stimulating power from the creatin, which resembles very closely theine and caffein. When taken in large quantities it causes heaviness and dullness. It is of no use as a tissue builder and as an article of food for continued nse has no valne. It is fearfnl to contemplate the number of human sacrifices which, with the best wishes of the attending physicians, have been made through professional ignorance of the true value of beef-tea, beef-essence, beef-extracts, mutton broth, chicken-tea and the whole class of liquid meat extractives. While an interne of Bellevue Hospital thirty years ago I made the following experiment: The beef-teas as ordered from the kitchen were known as ordinary, extra strong and double extra strong beef-tea. Having ordered a pint of the strongest, I evaporated so much of it as to leave scarcely enough to fill a teaspoon. That simple experiment satisfied me, on the principle that something can never come from nothing, that the nutritive value of beef-tea was very small. Repeat the experiment for yourselves and then by a process of mental arithmctic calcnlate how many gallons of beef-tea will be required to produce sixteen ounces of water-free food, the minimum quantity required to maintain the nutritive equilibrium of a man at rest. At that time many practitioners were antagonistic to the milk diet and would tell you that many patients could not digest it. I believe that with sufficient care every one can take a milk diet advantageously—I have yet to find a patient who from idiosyncrasy could not. Only a few days ago, one of my most respected confrères suggested beef-extract instead of milk at a consultation. I said: "Doctor, why did you inject milk into the vein of your patient instead of beef-tea?" His reply was prompt and based on the best physiological reasoning: "Because milk was the fluid nearest in composition to the blood itself."

The Methods of Milk Diet. How shall it be given. This is a question which requires careful study for each patient. I am accustomed to order two ounces or less every half hour, from early morning till late at night and through the night four ounces every two hours in order that the patient's sleep may be disturbed as little as possible. If the stomach is weak give less and never sufficient to cause great disturbance, such as vomiting, gastrodynia, acid eructations and those well known phenomena by which the stomach gives evidence of too much. I had occasion to advise a milk diet a few weeks ago for a patient whose stomach was daily washed out by the esophageal tube. An ounce every half hour was given at first. The first irrigation following brought out a very large quantity of strongly acid chyme mostly casein. Three days later scarcely any milk out of three pints per diem came with the water. That is, the milk given in such small amounts, at short intervals, was so completely and quickly digested that there was very little in the stomach at any time. I endeavor to have my patients consume from two and a half to three quarts a day and as I have already shown by the use of dietary standards, so practical experience teaches that this is approximately required for protracted disease. For the last six months I have nourished a patient almost exclusively on milk. She is very much emaciated and has consumed a very large amount of her stored up fat. She has averaged about two quarts of milk daily. It has not been enough, though all that could be accomplished because of weak digestion.

Several years ago I limited a patient's diet wholly to milk for about eighteen months. When she first began with it her weight was eighty pounds. It required a month to get her stomach into such condition as to digest a quart per diem; gradually she was able to digest more, until she was able to digest three quarts daily. After she began to store up fat and develop the other tissues, she gained regularly for several weeks a pound a week. During the eighteen months she gained sixty pounds and her weight increased to one hundred and forty pounds. She was then twenty-nine years of age and now at

forty-three weighs one hundred and twenty pounds and enjoys perfect health.

The emaciation of the body beyond a certain fraction of its whole weight causes death. Hammarsten says (Physiological Chemistry, Am. ed., page 443): "This fraction varies with the condition of the body at the beginning of the starvation period. Fat animals succumb when the weight of the body has sunk to one half of the original weight. Otherwise according to Chossat, animals die as a rule, when the body has sunk to two fifths of the original weight."

We are justified in formulating the following conclusions :

(1) That milk has all the elements of a complete diet.

(2) That it is the only diet suitable for febrile diseases or diseased conditions accompanied with a failure of digestion.

(3) That two quarts per diem is sufficient to maintain the equilibrium of nutrition in the human adult body and while individuals may require more, three quarts approximates the amount desirable to give a patient, who from any cause may require a milk diet.

(4) That the value of Beef tea, Beef essence and Beef extract is nothing as nutrient and that whatever value they possess is only evanescent and stimulant, and therefore they are entitled to a very small place in the diet of patients sick with febrile and exhausting disease.

DISSERTATION.

THE ETIOLOGY OF MALARIA,

WITH

REMARKS UPON THE DIAGNOSIS.

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C. B. GRAVES, M.D., NEW LONDON, CT.

The year 1880 may be said to mark the beginning of our knowledge of the specific cause of Malaria. In that year Laveran, a French military surgeon, announced his discovery of what is now universally regarded as the Malarial Parasite.

There were not wanting previous attempts in this direction, but they are of interest only from a historical point of view, and need not detain us now.

Laveran found constantly present in the blood of malaria patients, certain hitherto undescribed micro-organisms in the form of minute, polymorphous, usually pigmented masses of protoplasm, sometimes within red corpuscles; at other times floating free in the blood. This very important announcement at first attracted comparatively little notice, but after a time confirmatory reports appeared from several quarters. Italian investigators have been particularly active in this field; notably, Marchiafava and Celli, who first suggested the name Plasmodium Malariæ and Golgi, and these were foremost in corroborating the statements of Laveran. Since then research has been carried on in almost all countries where malarial diseases exist, as in this country by Sternberg, Councilman, Osler, etc.; in France, Germany, and India, all tending, in the main, to strengthen the conclusions of the original investigators. As Osler says, "The testimony is now unanimous that these bodies are always present in the malarial fevers. There is no evidence to show that they are ever present in any other disease."

The earlier descriptions of the organism have been somewhat modified and considerably amplified, as certain details in its development have been worked out. The different forms of this

polymorphous parasite may be considered under two broad divisions:

(A) The Plasmodium, strictly speaking, in its various development stages.

(B) A group comprising the so-called crescents and large flagellate cells and the free flagellæ. The differences between these two groups seem to be somewhat fundamental, for generally speaking they characterize different types of malarial disease. Their mutual relationships have not, as yet, been thoroughly worked out.

(A) The Plasmodium proper may be said, in a general way, to be characteristic of the varieties of intermittent fever. The various forms described simply represent different stages in its development. It begins as a minute hyaline protoplasmic mass, showing distinct amœboid movement, and usually contained within a red corpuscle. It grows rapidly at the expense of its host. As a rule it soon begins to change the hæmoglobin of the corpuscle into melarin, which is deposited in the form of granules of black pigment in the body of the parasite. The plasmoid continues to grow larger, the corpuscle becomes paler and more unsubstantial, until finally it is represented by the merest shell enclosing the well-fed parasite. At this stage the plasmodium undergoes what, so far as known, is its only method of reproduction. The pigment grauules collect in the center of the protoplasmic mass, lines radiating from the center soon show themselves, and following this the plasmodium divides into a variable number (4 to 16) of minute hyaline protoplasmic bodies, which are young parasites ready in their turn to infect other corpuscles and so begin another vicious circle. The pigment iu the meantime is discharged into the blood, is later taken up by leucocytes, and finally deposited in various organs, especially the spleen and liver. The segmenting stage of the parasite is always coincident with the patient's chill or ague paroxysm, while the early development of the organism takes place during the quiet apyretic interval. There is considerable ground for the opinion that this plasmodium just described exists in the blood of malarial patients in two distinct varieties whose cycles of development are of unequal length. Golgi is the chief exponent of this

theory. According to his view we have one variety of plasmodium with a developmental period of three days, giving rise to quartan fever; another with a period of two days, causing the tertian type. He regards all other forms of intermittents as due to combinations of these two. Quotidian fever may thus be explained as caused by two successive infections by different broods of the tertian organism.

Marchiafava and Celli have described also what they call the small plasmodium as a distinct species. This is characteristic of remittent and pernicious fevers, and from it they derive the crescents to be mentioned below. The small plasmodium has been identified in this country also by Dr. George Dock, of Ann Arbor.

(B) Coming now to the second of the two main groups into which we divided all the various forms of the parasite, the oft mentioned crescents are usually found within or attached to red corpuscles. They are slender cylindrical masses of protoplasm, as a rule somewhat pigmented, and the name indicates bent in the form of a crescent. A very fine line sometimes connects the two horns. They vary in length, but are frequently a little longer than the diameter of a red corpuscle.

The Flagellate Bodies, which according to some, (Mannaberg, Sakharoff), are changed crescents, are comparatively large cells, spherical, pyriform, or ovoid, usually pigmented, and have attached to them three or four very delicate colorless flagellæ which are capable of very active movement. These same flagellæ are sometimes found free in the blood, maintaining an independent existence. They are to be seen only when in motion, as they lash the corpuscles from side to side, wriggling among them like eels. Their length is three to four times the diameter of a red corpuscle.

These Crescents and Flagellate bodies, though they may occasionally occur in regular intermittent forms, are especially characteristic of the malarial cachexia and of irregular and pernicious types. Ferni and Giardini, out of sixty-two cases of irregular Malarial Fever, and twelve cases of Malarial Cachexia, found only once the tertian organism, but always the crescents. On the other hand they met with the crescents very rarely in

regular forms. Sakharoff had similar results. Mannaberg found the crescents in pernicious cases. According to Hehir, these forms in the second group also end by forming spores, or small hyaline amœboid bodies ready to infect new corpuscles.

The Malarial Parasite is found not only in the blood of infected persons, but also in fatal cases in sections from the hyperæmic organs, especially the brain. Such sections often disclose great numbers of the Hyaline and Pigmented Plasmodia, both inside and outside of corpuscles. In some cases they have been so numerous as almost to displace the blood in many of the capillaries. Abundant evidence of segmentation may also be met with in these sections.

With regard to the affinities of this organism, it is by general agreement placed among the Protozoa, which class includes the lowest types of animal life. Related forms have been met with in the red blood corpuscles of other animals, such as fish, turtles, frogs and birds, and these blood parasites have all been grouped together provisionally under the title Hematozoa. As might be anticipated from its close affinity with the infusoria, the Plasmodium is exceedingly susceptible to the action of quinine. Contact with a drop of a $\frac{1}{1000}$ solution of a quinine salt arrests the activity of the mobile forms at once and permanently. On the other hand the crescents, though not entirely refractory, are yet not affected by quinine to anything like such a degree and this is just what we should expect from their more constant association with the intenser forms of malarial poisoning.

This organism has never yet been found outside the human body, nor have attempts at cultivation, thus far, met with any success.

With regard to the technique of blood examinations, the best results are said to be obtained by drying a thin layer of blood, immersing in a mixture of alcohol and ether for half an hour, and then staining with a strong aqueous solution of methyl blue, with or without a contrast stain of eosine. The preparation is then washed, dried and mounted in balsam. By this method the hematozoa are stained pale blue, the nuclei of the leucocytes deep blue, and the red corpuscles, if eosine has been used, a rose color. Fresh blood may also be examined, but as a rule,

only flagellate bodies and crescents are to be found in that way. It is an indispensable condition for success that the patient have taken no quinine for some time previous.

The accumulated evidence that this organism, in its several forms, is the cause of malarial diseases, is now so strong as to be practically unassailable. Of course there are points in its life history which are still obscure, but the main fact, that it is invariably present in the blood of malarial patients, and is found in no other condition, may be taken as proved beyond question.

From this follows a corollary of great importance; by the detection of the organism in the blood we have a certain method of establishing the diagnosis of malarial infection. As Osler well puts it: "To be able everywhere and under all circumstances to differentiate between malaria and other forms of fever is one of the most important advances which have been made in late years in practical medicine; one which will revolutionize the study of fevers in tropical and subtropical countries and should within a short time bring order out of the chaos, which at present exists regarding the different forms which there prevail."

Of course in regular intermittent forms the diagnosis is, as a rule, easily made by a study of the symptoms and clinical history, yet even here blood examinations may be of considerable value, as for example, in differentiating those fevers of intermittent type dependent upon non-malarial causes. But it is particularly in the remittent fevers, in those of irregular course, in the pernicious forms, and in cases where a malarial complicating element is suspected that examination of the blood should be of the greatest service. It should, therefore, in time enable us to say what proportion of the deaths in our state returned as due to Malarial Fever, Remittent, Typho-Malarial and Pernicious Fevers, are genuine cases of malarial poisoning. Deaths from one or more of those causes are recorded every year in our vital statistics. Assuming, what is most likely, that only a small proportion of them are imported cases, they presuppose a much larger number of non-fatal cases of the same diseases. Altogether they must form a considerable fraction of our annual crop of fevers. As I say, it is an interesting question just how many of these are really Malarial in origin, that is, caused by the Plasmodium

Malariæ. More extended and systematic blood examination will enlighten us some time. In the mean while there are other aud as it seems to me, good grounds for serious doubt regarding the genuineness of mauy of these cases. Personally I have no doubt that a considerable proportion will prove to be simply forms of that protean disease, Typhoid Fever. That this is true of the so-called Typho-Malarial Fever is, I think, pretty generally believed by those who have given most study to the question. Sternberg points out that it "frequently occurs in localities where intermittents aud remitteuts are unknown: that it may prevail during the wiuter months, and in cities which are far removed from malarial influeuces; that its prevalence is often traced to unsanitary conditious of the same nature as those which are concerned—as predisposing causes at least—in the production of epidemics of Typhoid Fever; and finally that in fatal cases which have been diagnosed as Typhomalarial at the outset, the lesions of enteric fever are commonly found at the autopsy." The term Typhomalarial Fever does not represent a distiuct entity, and happily the use of the term is fast dying out.

With the coutinued Malarial or Remittent Fever, the case is differeut. Here the difficulties of diagnosis are sometimes very great. Osler says, "I confess myself uuable to differentiate certaiu cases of Malarial Remittent from Typhoid Fever without the blood examination." Wilson also, and Forscheimer, remark the same difficulties, especially iu children. The former states that: "In a considerable number of cases formal rules for the discrimination are unavailiug. The value of the examination of the blood in these cases is obvious. We have also, of course, the therapeutic test with quinine, always available, but one which we do not always care to apply unnecessarily. Furthermore, iu a doubtful case we may be led to a presumptive diagnosis merely by considering the relative abundance of the different fevers of the neighborhood. It is well known that Remittent Fever is the expression of a more intense or severe iufection than that which causes the intermittent fevers. According to Schauffler, in Wood's "Handbook," "It may indeed be safely asserted that iutermittent fever is the typical form in which malarial infection manifests itself. In any malarial region, or among any

body of men exposed to malarial influences, the number of cases of Intermittent Fever will far exceed those of continued or so-called Remittent Fever, or any other form of malarial affection." The predominance of intermittent fever is even greater in a recently infected district or on the outskirts of a malarial region. These are facts of great importance and cannot be too constantly borne in mind.

It follows therefore, that if in any given locality we are having many cases of suspected remittent fever, and yet meet with regular intermittent forms only rarely or in much fewer numbers, the presumption is that some, at least, of our supposed Remittents are not malarial at all but Typhoid.

Another very interesting question is whether in a malarial region the typhoid fever present is in any way modified by the malarial influence. That such is the fact is stated on good authority and firmly believed by very many observant practitioners, yet it seems to me that the evidence is not conclusive. Other men of equally large experience hold that no such influence is observable, in support of which I may quote Prof. Osler again, who says: "The typhoid fever of Philadelphia and Baltimore presents no essential difference from the disease as it occurs in Montreal, a city practically free from malaria."

We find that men are not agreed as to what indicates the Malarial character of a continued fever, or the Malarial element in it. Some lay greater stress upon one symptom or symptom-complex, others upon another. Among such symptoms may be mentioned chills and sweating; an irregular (or markedly) remittent temperature curve; an inverse type of diurnal variation, with temperature higher in the morning; an unusually short duration, or on the other hand an unduly prolonged and irregular fever; a moist or clean tongue, and the occurrence of vomiting; the absence of the classical symptoms, such as diarrhea and iliac tenderness, gurgling, tympanites, and rose spots. We must not forget, however, that enteric fever is an immensely variable disease, not merely in malarial but also in non-malarial regions. So-called typical cases with temperature curve like that of Wunderlich's diagram and with the well-known facies and all the symptoms, are decidedly exceptional. As Dr. Eliot

has well pointed ont in his article on "The Diagnosis of Enteric Fever," pnblished in last year's Proceedings, the assnmption that all cases of Typhoid should approach near to this model; that unless they do so, either they are not Typhoid or there is something else at work besides the typhoid poison, has been a serions bar to the progress of onr knowledge of the disease, and is responsible for many errors in diagnosis.

Now the stndy of Enteric Fever in regions where there is no possibility of malarial complication teaches ns that any one of the above mentioned phenomena assumed to prove snch complication, may be and not rarely is present in cases of nncomplicated Typhoid. For example, marked remissions in the temperatnre are common in the beginning and toward the end of Typhoid. So frequent is this remittent tendency in the Typhoid of childhood and infancy, that it has given rise, according to Sternberg, to the term "Infantile Remittent." An irregular temperatnre curve is very often seen in cases of Typhoid, and occasionally the nniversal type of daily variation occurs, with temperaturc higher in the morning and lower at night. The abdominal symptoms, as is well known, are very variable, and their absence does not preclnde the existence of Typhoid pure and simple. Vomiting is not rare, especially in the early part of an attack. The tongue is very often moist thronghout the disease, and may be nearly or qnite clean. In some instances the eruption of rose spots does not take place. A febrile stage of less than three weeks does not by any means rule ont Typhoid. This is eminently trne in childhood, where short runs are very common. For instance, Dr. Wilson in the article in Pepper's System, quotes statistics from Henoch to the effect that out of 80 cases of Typhoid in children, 20 ended on or before the 12th day, and 17 more in from 13 to 15 days.

Finally, cases presenting one or more of the aforesaid irregnlarities are not, as a rnle, influenced in any remarkable way by qninine in antiperiodic doses.

While, therefore, the possibility that there may be a complicating malarial elemcnt in some of thcse cases is not to be denicd, yet it seems to me that the burden of proof rests with those who affirm its presence. Blood examinations in these

cases are greatly to be desired. If malaria be present the parasites can be found in the blood.

I may mention here the experience of Dr. James, of New York, who made a large number of microscopic examinations in cases of Fevers, etc. He found that those cases of an intermittent type of fever in which no Plasmodia were found in the blood, turned out later by autopsy or otherwise to be non-malarial; that in those cases in which the parasites were found there was a distinct history of exposure in 98 p. c. In the remittent types they were met with in only a few severe cases, and these had been exposed to infection. In the milder, more irregular cases of remittent character they were not found; nor were they discovered in any of the cases of headache, malaise, neuralgia, etc., of periodic tendency.

As regards "Masked," or "Irregular Intermittent," it is to be said that such cases are considered rare even in intensely malarial regions, and must be more so in newly infected places or in those less subjected to the malarial influence. Strümpell says: "We should be very cautious in making a hasty diagnosis of 'Irregular Intermittent Fever.' 'Our own experience,' (this is still a quotation), 'has taught us that almost invariably the case turns out to be something else.'" We see at once how valuable the blood examination would be in these cases.

It is well known that a great variety of symptoms, more or less vague and incongruous in character, have been in times past attributed to the influence of 'Malaria.' I will not take the time to enumerate them. Suffice it to say that such cases, in the absence of distinct periodicity, have absolutely nothing in their clinical history indicating malarial poisoning. Moreover, they are met with in the same shapes in non-malarial as well as in malarial regions.

In this connection I may say that a person who has once had one or more thorough-going attacks of Ague, may afterward feel in some such vague way what seems to be a reminder of his former trouble, but in these cases there is always a distinct history of previous infection.

I have purposely omitted all reference to the so-called "Simple Continued Fever," because it seems to me that the existence

of such a disease, as distinct both from Typhoid and Malarial Fevers, is still unproved.

I regret that I am unable to contribute toward the solution of some of these vexed questions. I had hoped to be able to present the results of individual work in blood examinations, but circumstances have made it impossible for me to undertake the work. I can only hope that this paper may carry some suggestion of what might be done in this field.

REPORT

OF THE

COMMITTEE ON MATTERS

OF

PROFESSIONAL INTEREST

IN THE STATE.

PART I.

APPENDICITIS.

PART II.

CASES IN GENERAL PRACTICE

CONTRIBUTED BY PHYSICIANS.

REPORT OF THE COMMITTEE

ON MATTERS OF PROFESSIONAL INTEREST IN THE STATE.

From beyond the earliest days of recorded medicine, people have suffered from inflammatory troubles of the right side of the lower abdomen, and various names have been given to these affections, or to the group of symptoms herein included. Some patients have died, some have recovered therefrom, and at odd times a cutting operation was done, with or without a good result. These affections, or if you please, this affection was called by various names, such as circumscribed peritonitis, perityphlitis, simple abseess, and sometimes, perforation of the appendix. It is an undeniable fact that only of late years has the consideration of the appendix, as the sole offending member of these troubles, taken hold of the medical mind, and the conception of inflammatory disease of the right lower abdominal region, the cause of offence, and the treatment therefor has undergone a revolution. To determine the present knowledge of the practitioners of the State of this very serious and apparently increasing disease, their treatment of the same, and the result of such treatment, your Committee has endeavored by collective investigation to gather, and had hopes to reap a harvest of considerable data, worthy of the attention of the Society.

Presenting to-day the result of considerable labor to which your Committee has diligently devoted itself, we do it fully realizing that the sum total of our work is by reason of the meagerness of the returns less satisfactory than it might have been, had the members of the Society shown that interest in the investigation which we feel it deserved, but we do still believe that it will be found of considerable valne to draw practical conclusions from.

It is lamentable that from the more than six hundred practi-

tioners in the State, who have been interrogated as to their knowledge and experience of this disease, only one hundred and twenty-five have replied; many of them in an entirely negative manner, and peculiarly regretable is it that of those that are known to the Committee as having most experience, hardly any returns have been received. Yes, with one or two very praiseworthy exceptions, none whatever. This too in face of the very prominent fact that this disease is almost more than any other one, a newspaper ailment; that operations on the same are so certainly sure of being loudly proclaimed in the daily press, and are so much written about and discussed in Medical Journals, as examples of the triumphant progress of the Surgical Art. What the committee will offer will be simply the collected experience of the every-day physician, and it is possible that more than passing value may attach to it for this very reason, than if it were the exposition of enthusiasts blindly zealous for pet notions of diagnosis and treatment.

One hundred and twenty-five Reports have been received. Of these thirty-four Reporters have seen no cases of appendicitis during the past five years.

24	Reporters have had each	1	case,	24
18	" "	2	cases,	36
19	" "	3	"	57
8	" "	4	"	32
7	" "	5	"	35
1	" "	6	"	6
2	" "	7	"	14
1	" "	8	"	8
3	" "	9	"	27
4	" "	10	"	40
1	" "	12	"	12
1	" "	15	"	15
1	" "	24	"	24
1	" "	41	"	41

Thus in the practice of ninety-one physicians there have occurred within the past five years 371 cases of Appendicitis

diagnosticated as such without doubt. By sections these are classified as follows:

New London, Windham and Tolland counties,	44	cases in the practice of	19	physicians.
Hartford, Middlesex and Litchfield "	46	" "	10	"
Fairfield County,	90	" "	24	"
New Haven County,	191	" "	38	"
	371		91	

Of doubtful cases, suspected to be appendicitis, the report is as follows:

Of	124	Reporters,	56	saw,	0	cases.
"	24	"	1	"	24	"
"	12	"	2	"	24	"
"	8	"	3	"	24	"
"	8	"	4	"	32	"
"	2	"	5	"	10	"
"	2	"	6	"	12	"
"	2	"	7	"	14	"
"	6	"	8	"	48	"
"	1	"	9	"	9	"
"	2	"	15	"	30	"
"	1	"	27	"	27	"

There occurred then, 254 suspected cases in the practice of sixty-eight physicians.

By Counties these are divided as follows:

	Reporters.	Cases.
New Haven and Fairfield,	49	193
New London, Windham and Tolland,	12	24
Hartford, Middlesex and Litchfield,	7	37

Of fatal peritonitis of lower portion of the abdomen, (aside from the above) there are reported:

By	93	Reporters	0	cases,	0
"	6	"	4	"	24
"	8	"	3	"	24
"	9	"	2	"	18
"	8	"	1	"	8
					74 cases,

of which seven occurred post-partum.

Of cases of apparent colic with recurrence of attack, (the pain

in the latter part of the attack being referred to the right iliac region):

89	report,	cases each,	0	0
17	"	"	1	17
4	"	"	2	8
5	"	"	3	15
3	"	"	4	12
4	"	"	5	20
1	"	"	9	9
1	"	"	13	13
Reporters, 124		Total cases,		94

Of these have died from peritonitis after several attacks, only four cases.

REMARKS ON THIS PARTICULAR HAVE BEEN MADE BY

Reporter 1. Some years ago I attended a young man with colic. At first it seemed only a plain case of spasm of the bowel, but after twenty-four hours he sank into a state of collapse and died apparently of peritonitis due to perforation. There was no post-mortem. This, in all probability, was appendicitis with perforation of appendix.

Reporter 2. In my opinion we may have appendicitis without the pain being referred to the right iliac region.

It seems profitable to study the relative frequency of the disease in each of the five preceding years which the inquiry covers. They have occurred in almost even ratio in each year.

As to the element of age, sex, occupation, habits, nativity, etc., of these various patients, including herein all the diseases mentioned, namely:

Undoubted cases of appendicitis,	371
Doubtful " " "	250
Fatal " " peritonitis,	74
Recurrent cases of apparent colic with right iliac pain,	94

The sum total of which amounts to 793 cases, occurring in the practice of ninety-five physicians, no very definite statement can be made, excepting by percentage estimation.

Tables are offered showing the percentage in the total returns of age:

Under 6 years	6 to 10	10 to 20	20 to 30	30 to 40	50	60	70
0.2	0.8	0.16	0.53	0.12	0.6	0.2	0.1

Sex—Male, 79; Female, 71.

HABITS.

Temperate.	Regular.	Good.	Bad.	Dyspeptic.	Constipated.	Active.
0.15	0.15	0.13	0.8	0.10	0.10	0.8

Excessive work.	Sedentary.	Irregular.	Athlete.	Life of ease.
0.4	0.8	0.2	0.6	0.1

OCCUPATION.

Farmer.	Laborer.	Teamster.	Students.	Athlete.	Mechanic.	Physician.
0.11	0.9	0.1	0.8	0.14	0.3	0.2

Gentlemen of leisure.	Housewife.	Seamstress.	No Occupation.
0.4	0.4	0.4	0.1

Seamen.	Nightworkers.	Scholars.	Clerks.	Horsemen.
0.5	0.9	0.4	0.7	0.4

NATIVITY.

American.	Canadian.	Foreign.
0.74	0.7	0.16

Of the difficulty in making a diagnosis between Appendicitis, Typhlitis, Perityphlitis, Obstruction, Colic, Typhoid fever, etc.

Fifty-one Reporters state that there is none whatever; thirty-seven Reporters state that there is no difficulty to differentiate between the last two diseases and Appendicitis, but very great difficulty to distinguish Appendicitis from Typhlitis, Perityphlitis, and Obstruction.

One says that the difficulty is "great;" one finds "lots."

It is remarked: I. No difficulty whatever; the symptoms are always well-marked, i. e.: colic pain, vomiting, slight fever, right abdominal muscles tense, McBurney point tender. The diagnosis involves the exclusion of perioöphoritis.

II. *An anonymous Reporter:* In the early stages there are many difficulties, but as soon as pus is formed the case is clear.—It is not clear to the Committee that this reporter is competent to make a reliable diagnosis.

III. *An anonymous Reporter* · Cannot say that I try to make any fine distinction in diagnosis. If I make up my mind that occasion demands it I try to go in and find the trouble.— He does not say into what he goes; happily this reporter has seen only one case during the five years.

IV. Thinks renal and biliary colic enter into the diagnosis. Can never make definite distinction between the mentioned diseases. He depends on facts, character of vomit and bowel movements, not at all on the point of tenderness.

V. Finds an early diagnosis almost impossible; depends on rectal examination for the demonstration of ulcer formation.

VI. Finds in children great difficulty to distinguish between Appendicitis and impacted feces which cannot be felt, the symptoms in such cases subsiding but slowly even after the bowels have been moved.

A great diversity is found in the reports of the number of primary attacks, and single and repeated recurrences. Only fifty-seven Reporters treat of the subject.

Of these, twenty-one have seen no repetition of the disease in the same individual.

14	have seeen	1	single recurrence generally after a year.		
10	"	3	recurrences generally after over a year.		
6	"	4	"	"	4 years.
3	"	5	"	"	15 years.
1	"	6	"	"	8 years.
1	"	40	"	in 10 cases reported.	

It is remarked that one patient had three attacks, all subsisting without operation. These have rapidly supervened one on the other. Since the last recurrence five years have gone by without any trouble. One patient has been operated upon. The appendix was not removed, a second attack followed. One case is related of a coachman in the family of the physician reporting the same, who died from Typhoid Fever. He had been treated for Typhoid several years before this time, but six months before his death had been continually suffering from attack of frequently recurring Intestinal Colic.

Upon causes predisposing to recurrence of attacks there are four statements in our returns.

It is generally held that in those of active life there has been more frequent recurrence than in the sedentary. Only twenty-seven report on this phase of the disease, of which seven think that habits of life have no bearing on the subject.

Twenty report as follows:

Immoderate Eating,	1
Indigestible Food,	1
Sudden Violence,	1
Cold,	2
Traumatism,	1
Sustained Bodily Strain,	2
Prolonged Exposure,	1
Previous Attacks,	7
Constipation,	7
Male Sex,	2
Cough,	1

Dr. Seaver, speaking with official knowledge of the Clinical History of Yale University, and with authority on the influence of athletics on young men, does not think that the athletic class suffers more than the very sedentary, and if the cases due to direct violence are excepted, finds that the "digs" suffer more frequently from this disease.

The following table shows the opinion of observers of the general etiology of appendicitis:

CAUSES.

Reporters.	Catarrh. Yes.	Catarrh. No.	Violence. Yes.	Violence. No.	Foreign Bodies Yes.	Foreign Bodies No.	Unknown Cause.	Indifferent.
91	37	17	54	16	12	38	14	30

Microbic?	Pressure from Fecal Concretion.	Typhoid Fever.	Cold.
11	17	4	10

Predisposition.	Overeating.	Enterolithe.	Adjacent Inflammation.	Improper Mastication.
30	4	6	4	1

MORE IN DETAIL, REPORTERS STATE:

I. Do not think any one known cause is very active.

II. Violent muscular efforts may force a certain amount of colon contents into the appendix, causing rupture and

absorption of offensive matter into the cellular tissue, leading to abscess, etc.

III. Does not believe in foreign bodies. Believes slight intestinal catarrh is very common. This does no harm in the small intestine but is likely to produce strangulation of appendical tissue and necrosis.

IV. Believes that Typhoid Fever ulcerations may occur in the appendix with adhesion which may finally lead to appendicitis.

V. Have been in active practice twenty-nine years and have seen no case of appendicitis. Have seen cases simulating appendicitis as described by others, but autopsies did not sustain the theories. That appendicitis does occur de novo once in an age I do not deny, but I believe that one hundred people are struck by lightning where one has appendicitis; excepting when it occurs as a sequel of inflammation of the bowels and peritonitis (?). Otherwise I believe it is a fad and take no stock in it.

VI. My opinion in regard to appendicitis is that at the present time it is the fashionable disease. My opinion is that in ten years from now the operation for the removal of the appendix will be seldom performed. My opinion is that the subject is being pushed by men who expect to gain prominence by so doing. During the present year Drs. A., B. and C. of———, have repeatedly had themselves interviewed by reporters of the public press in regard to the matter and have been termed Specialists in this trouble. In many states such action would be considered sufficient reason for expulsion from the Society. I have nothing to say as to the pathology of the disease, excepting this: The whole matter is being over discussed for the benefit of those who wish to be known as "Surgeons."

Seventeen Reporters express no opinion as to the Pathology of the disease.

Ninety-five Reporters give opinions as follows;

A special microbe.	No microbe.	Catarrhal inflammation	Cellulitis.
4	67	59	8

REMARKS.

I. By catarrhal appendicitis the entire tube is thickened, small adhesions may form so as to produce a slight peritonitis, the lumen of the tube contracts, particularly at the cæcal end by ulceration, the appendix becomes adherent, perforation and abscess follow.

II. Does not believe that the disease can ever be prevented by the inoculation of an antitoxin.

III. That the inflammation of the mucosa appendicis in obliterating the lumen of the tube causes a retention of its secretion, subsequent decomposition and formation of enteroliths.

IV. While the light of modern bacteriology has been turned on and the exudate of appendicular inflammation critically examined, this subject is still in doubt, as the observations of different bacteriologists are not in accord. Many fail to find the Baccillus Coli Communis which Richardson declares to be the cause of the mortality in the disease. Parke declares that it is found in all cases, both mild and mortal and attaches no importance to them.

"The recent investigations of Clado of Paris, (reported in Davis' Annual for 1893), and others, establish almost conclusively, the glandular nature of the appendix, and render it probable that many cases of appendicitis are purely of catarrhal origin.

The acceptance of this theory is in accordance with the idea that many cases supposed to be instances of mistaken diagnosis have been in reality cases of genuine appendicitis which recovered with few or no recurrences and often with little treatment except rest with or without opiates.

The fact that in many cases treated by operation there are found foreign bodies, (fruit seeds, fecal concretions, etc.), does not militate against this, while the frequent cases of stricture are confirmative, being directly in line with the history of other canals lined with mucous membrane and subject to catarrhal inflammation.

Again, it seems no more unreasonable to suppose that a catarrhal condition of the lining membrane of that storehouse of fecal accumulations, the cæcum, may extend into the patent ap-

pendix, than that a pharyngeal catarrh may, and as every one knows, does, in numerous cases creep along the eustachian tube to the middle ear and there produce suppurative inflammation with its long train of exasperating and destructive results.

Thus, including the cases of both mild and severe catarrhal inflammation, of slight or extreme stricture, of fecal concretions and other foreign bodies, we find ourselves confronted, as a profession, with a disease often insiduous in its onset, multiform in its developemnt, and too often disastrous and fatal in its results.

Experience, with careful observation and investigation, have placed at our command already, a fair knowledge of the nature and course of the disease, but its multifarious character still demands alert and continued scrutiny, and, (as has been remarked), as each case is "a law unto itself," only the nicest discrimination, coupled with some experience, will suffice to enable us to decide whether any individual case needs rest alone, active medicinal treatment, or the surgeon's knife."

THE CLINICAL HISTORY

of the disease as reported upon can be summarized as follows:

Thirty-four Reporters give no information.

Ninety Reporters make the following returns; their statements express their experience with the disease during the whole time of their practice:

Undoubted cases.	Ended in resolution.	In abscess:		In general peritonitis.	
		Died.	Recovered.	Died.	Recovered.
	0.57	0.11	0.3	0.27	0.2
Doubtful cases.	0.87	0.4	0.0	0.9	0.0

	Recovered by Resolution.	Died.	
		Abscess.	Peritonitis.
After operation,	0.81	0.9	0.10
Without operation,	0.71	0.29	

Recurrent cases,	Recovered with operation,	0.41
	" without "	0.27
	Died with "	0.12
	" without "	0.20

REMARKS.

I. I believe there are walking cases of appendicitis as there are of typhoid fever. Have had such cases come to my of-

fice within the past two years. Have had one case which I called appendicitis which occurred in a puerperal woman, who made a good recovery. Another physician had, during my absence from town after I had delivered her, attributed the inflammatory trouble to the treatment she had received during labor. After my return the case again came into my hands, and I vindicated myself by showing up the ignorance of the other man (?), telling them what the trouble really was, and getting her well upon that basis. However, my diagnosis may have been faulty.

II. Have had two brothers under my care who have had respectively, two and four attacks at varying intervals; both had final attacks, dying after operation. Have reason to think that they had symptoms of the disease continually since date of first attack.

III. There are cases that will go from bad to worse, and finally get better without operation, but these cases are dangerous to the race.

Have now a woman in the seventies, who was taken two months ago with pains in the ileocæcal region, accompanied by fever and some temperature, and for the last month has been passing blood per rectum. She is now sitting up several hours a day; sleeps and eats fairly well, but my prognosis is not good. Have had two cases of typhoid fever with ileocæcal abscess, both terminating fatally.

IV. Was called in consultation to see a full grown well developed negro who had very violent pains in right iliac region. He had eaten a liberal, but unknown quantity of watermelon the day preceding his attack. He became comatose in forty-eight hours and died. The autopsy showed the appendix inflamed and containing three melon seeds. The intestines above were absolutely filled with them. He had received $\frac{3}{4}$ of a grain of morphia before I saw him. It was a question whether his death was not due to this overdose (?).

V. A clinical point of importance is the difference between the oral and rectal temperature. Have observed the latter to

be three degrees higher than the former. Believe it indicates abscess formation.

VI. A young man suffering from right inguinal pain and tenderness with elevation of the temperature, anxious countenance, thin rapid pulse, history of habitual constipation and in present state obstipation for one week, was treated by salines and local heat for two days, resulting in movement of bowels, relief of local signs but apparent extension of tenderness and pain with supervention of abdominal tympanitis, indicating general diffuse peritonitis. Had recurrent chill. Within two days developed repeated diarrheal movements, necessitating the employment of opium; operation advised, declined. After three more days nausea, followed by fecal but not stercoraceous vomiting. General condition remained unchanged. Consultation determined that an operation was imperative, but the patient refused and the attending physician was of opinion that no injustice was being done the patient by refraining from the same, but that treatment with opium gave him a fair chance to recover by prospective abatement of the inflammatory process. Fecal vomitings were becoming stercoraceous; lasted for three days, then the euphoria of patient became greatly disturbed, extremities cold, wet, pulse weak, thin, rapid, temperature low, regurgitant vomiting, impending collapse. The operation was done as a last resort. The patient died. The autopsy revealed erosion of appendix amounting to almost complete obliteration of the same, subperitoneal adhesion of cæcal gut structure with perforation due to ulceration of adjacent part, including lumbar wall of abdominal cavity. It was plain that an early operation would most likely have saved this life. There was found an enterolith.

VII. A man was taken with violent pains in lower right abdominal region, chill, elevation of temperature, anorexia and vomiting, required very large dose of morphia subcutaneously to render existence bearable: straining at stool was a persistent and particularly distressing symptom. He passed neither wind nor feces for one week. He was

treated with morphia subcutaneously in doses to relieve him, did not get either a high injection of saline or other cathartics. At the end of a week he was removed to the hospital for laparotomy. The operation was not done as his condition was considered too grave to warrant interference. After several days treatment at the hospital with poultices, injections, salines and opiates when demanded, also stimulants, the man improved. At no time during his more than three weeks illness did he pass a day without recurring chills. His temperature ranged from 100° to 104.5°: there was no periodicity in his chill and fever. A tumor could be distinctly felt in the right iliac region at all times. Finally he recovered without any operation and has enjoyed the best of health for the past five years.

VIII. I was called in consultation to this case, which has not been reported. The patient was a robust married female, twenty-five, American and housekeeper.

I first saw her during the first week of her illness, which presented every indication of a typical case of appendicitis. An operation was advised and urged, but the husband persistently declined, remarking: "If she dies, she dies whole!" This stand, I am told, he never receded from during the long weeks of his wife's illness, and finally would not permit an autopsy to be made.

The patient was obliged to assume and maintain constantly, the dorsal decubitus, and could not extend completely the right leg. The pus burrowed through the tissues of the back, and finally, after several weeks, formed a fluctuating tumor in the right lumbar region. This was incised, and a quantity of pus, said by those present to have been very dark and fetid, was discharged. The discharge of thin, foul pus continued until the patient's death, which occurred some four months from the inception of the disease, with every indication of exhaustion from septicemia.

If cases have been reported in which the pus took the course indicated in this one, I have never chanced to see

the reports, and have found no plausible explanation except in the "American Journal of Obstetrics," for April, 1894. In that number, Binkley, of Chicago, quotes Ferguson as finding in seventy-seven cases out of two hundred, the appendix 'so placed in the iliac fossa,' that a perforation would take place into the retroperitoneal cellular tissue.

ON THE SUBJECT OF TREATMENT THE FOLLOWING TABLES ARE OFFERED.

There are eighty-one Reporters on the subject who recommend:

Absolute rest,	71
Salines,	47
Opium,	31
Mixed treatment of rest, opium and salines,	74
Never salines,	41
Never opium,	13
Hot applications,	14
Cold appilcations,	7
Irrigation of Colon,	13
Mercurials,	11
Blisters,	4
Leeches,	3
No medical treatment whatever: immediate operation,	8
Special measures in connection with the above,	19

REMARKS ON TREATMENT ARE AS FOLLOWS:

I. With tenderness in the peritoneum, salines to the exclusion of opiates.

II. Lawson Tait is right, no opium by the mouth; would suggest suppositories of Cocaine, Extract Thebaicine, Iodoform, ää 0.05. Tincture of iodine is a useful external application.

III. Tablets of pancreatin and bile have promptly relieved the pain and fullness in the right inguinal region. Remedies to relieve flatulence, which is often the cause of much distress, must be given, Salol, Quinine and Calc. Sulph. during the continuance of the urgent symptoms.

IV. There is no use to delay the operation if the salines do not clear the case.

THE SURGICAL TREATMENT OF THE DISEASE IS COMMENTED UPON IN THE FOLLOWING MANNER.

Ninety-one Reporters discuss the subject who say:

Operate	without delay,	7
"	after persistence of symptoms,	13
"	after subsidence of symptoms,	20
"	in recurrent attacks,	30
"	after recurrent attack,	10
"	when symptoms are indefinite but when there is a history of chronic constipation with occasional twinges of discomfort in right iliac fossa,	4
"	under no circumstances,	7
"	without regard to the patient's general condition—this excludes "operate without delay,"	16
"	only when patient's condition is favorable,	51

THE RESULTS OF OPERATION ARE SUMMARISED AS FOLLOWS.

Patients	died, operated on at time of selection,	0.09
"	" " " " unfavorable period,	0.21
"	recovered without operation at unfavorable period,	0.07
"	recovered with operation at unfavorable period,	0.04
"	" " " " at time of selection,	0.23
"	died without operation,	0.36

REMARKS.

I. Many cases operated upon during first three days would without operation have gone on to unfavorable issue under purely medical treatment. During the interval the operation should be insisted upon.

II. If abscess forms and can be easily opened, it should be done. If fever and other symptoms are high and tend to continue or grow worse, pus formation should be looked for and laparotomy be done. The tendency of surgeons is to operate too freely; of physicians to delay operation too long.

III. Many primary cases call for surgical interference, and life would be lost without it. In the cases that might be term-

ed recurring, when the operation is not imperatively demanded for the immediate saving of life, then the operation should be done during an interval, and the result could not be otherwise thau the best. It is difficult to give any prescriptive rule as to when it is best to operate ; there is a certain something about the patient that tells the tale better than words can describe. Fever up to 101° or 102°, a distinct tumor within the limits of McBurney's tender point with a distinctivc pinched look on the face of the patient means an indication for pretty close watch, and if relief is not pretty close at hand, the surgeon should be sent for.

IV. If by rectal examination considerable swelling is found, great pain and especially fluctuation, the operation should uot be delayed. Without these conditions being present, it is best to wait.

V. The question of operation belongs to the surgeon, who should be called in every case where the tumor does not tend to resolution, and the pulse is rapid and thin. The temperature indicates nothing.

VI. On my own person should desire operation, at least for the second attack. In my practice I reccommend it but do uot urge it, because I consider it a serious and dangerous operation.

VII. We must be guided by the temperature and especially the pulsc. When the temperaturc is over 103° and the pulse over 110, with excessive tenderness and persistent obstipation, vomiting, great thirst, and perhaps rigors, we should fear the formation of pus, and this is an imperative demand for operation.

This to be successful must be done early—bcfore the fifth day. I do not believe it best to operate between the attacks. Should be guided by the condition of the patient during the interval ; if he was well without any symptoms, should not operate. Would not do it simply because the patient had or had had appendicitis.

PROGNOSIS.

Seventy-eight Reporters state their prognosis of the disease;

Favorable under all circumstances. 14	Unfavorable under all circumstances. 27	Good in mild cases. 19	Good in recurrent cases. 7
Bad in recurrent cases. 11	Unfavorable after operation at any time. 7	Favorable with early operation. 37	Favorable with late operation. 10
More favorable without than with operation. 22			

REMARKS.

I. The prognosis is very uncertain under procrastinating medical treatment. Under surgical treatment it is good. The excision of the appendix in cases not complicated with perforation is one of the easiest and least dangerous of abdominal operations.

II. The prognosis depends upon the operation. If done early, the patient's condition does not in the least influence it, the chances of recovery are good. If the operation is not done the patient is very likely to recover his health, but never a healthy appendix. Therefore the operation should by all means be insisted upon. If not during an attack most surely during an interval.

Table, showing deaths from appendicitis and allied diseases, in the state during the past five years. (Typhlitis and perityphlitis not found in the Nosology of the State Board of Health.)

COUNTIES.	1889.	1890.	1891.	1892.	1893.
Hartford,	42	35	32	43	56
New Haven,	50	48	62	65	79
Fairfield,	29	51	47	38	42
Litchfield,	11	14	12	7	16
New London,	15	14	17	15	30
Middlesex,	8	9	11	8	14
Windham,	11	11	9	9	10
Tolland,	5	7	4	7	4
DISEASES.					
Ulceration of Intestine,	16	9	9	8	11
Obstruction of Intestine,	25	25	31	19	39
Strangulation,	1	1	5	5	6
Intussusception,	10	7	7	5	7
Peritonitis, not Puerperal,	115	122	120	136	163
Appendicitis,	..	..	..	.	6

AGES OF DECEDENTS.

	—X	X	XX	XXX	XL	L	LX
Ulceration of Intestines,	10	4	10	4	7	4	14
Strangulation,	6	2	1	2	3	1	2
Intussusception, . .	14	2	2	2	5	5	4
Obstruction,	28	10	15	15	13	24	34
Rupture,		2	4	4	2	3	1
Peritonitis, not Puerperal,	72	70	90	132	111	111	70
Appendicitis, .	1	2	2	1	.	..	

The conclusion which the Committee drew from the summarized returns may be stated thus: Appendicitis is not a new disease. Dating its advent from recent days, it is a very prevalent ailment and by the light of recently acquired knowledge has become clinically demonstrable. In the days preceding those of modern researches on this subject, the disease was often mistaken for typhlitis, perityphlitis, localized or general peritonitis and intestinal disease in general. There are mild and severe cases, and many cases occur that simulate the disease, but are nothing more than colic, either of toxic or neurotic nature, and there are many cases of supposed diffuse peritonitis that are in reality appendicitis pure and simple. The disease has a tendency to recovery in primary attacks, the inflammatory process ending in resolution; but a predisposition to recurrence is established, which is bound, sooner or later, to manifest itself. As the disease is by greater familiarity with its symptomatology more securely recognized than formerly, the allied diseases, such as typhlitis, perityphlitis, obstruction, ulceration, invagination, etc., of the bowels, are more rarely met with. This holds good with particular force in regard to peritonitis, so that the latter terms are becoming obsolete, and suspected cases less frequent. We have then to deal with a pronounced and well established entity—appendicitis.

Of the general causes influencing the disease it seems that age and sex are important factors. It is a disease of young life, preponderately of the male sex. This may be determined by habit and occupation, it being shown that the age at which the disease predominates is the most active and reckless period of life, and its occurrence in men shows that the quiet and tranquil life of females is a protection against it, as are the more tem-

TABLE SHOWING THE VIEWS OF REPORTERS.

Reporters.	Cases.	Suspected Cases.	Peritonitis Simple.	Sex, Occupation, Etc., Etc	Recurrent Cases	Number of Recurrences.	Appendicitis. Results.	Medical Treatment.	Surgical Treatment.	Prognosis.	Remarks.
Barbant't, A. O.	2			27 years, Blacksmith, good habits. 24 years, Student, good habits.	All Recurrent.	Frequent.	Both cases resulted in abscess. (Typhlitis). Laparotomy and Excision of appendix were performed.	Believe that many cases recover under laxative treatment.	Advise operation early. Do not think the operation as dangerous as ovariotomy. If possible would do the operation during interval.	Good with surgical treatment.	I consider the prognosis good only under surgical treatment, under procrastinating medical treatment very uncertain. The Excision of the appendix, in cases not complicated with perforation, is one of the least dangerous of operations
Brayton, C. E.	2	1		8 years, Male, American. 22 years. Female, American. 48 years, Laborer, Irish.	0		Recovery without operation.	Mixed treatment. Salines freely, opium sparingly.	I should incline to surgical aid in bad cases	Good.	I think violence with constipated habit is the chief cause of the disease.
Browne, W. T.	1	2		36 years, Physician. 40 years, Superintendent Both good habits, American.	1	Several, one or two a year.	Abscess opened through abdomen. Recovery.	Pancreatin and Bile.	Can lay down no rule, but advise operation if abscess can be demonstrated.	Guarded, but favorable.	Sedentary habit with sudden violent exertion seems to produce the disease. Violent muscular action may force colon contents into the appendix producing cystic condition and causing absorption of confined secretion.
Crane, A. A.		4	2	Mostly males of active but not violent occupation, between twenty and forty years.		About once a year.	Obstruction of intestines from old adhesion due to appendicitis	Salines. Moist heat.	I recommend the operation, consider it a serious and dangerous operation.	Fair for first attack, bad for recurrence	I believe slight intestinal catarrh produces the disease, do not believe in foreign bodies.
Dowling, J. F.	5	8		28 years, American, Mechanic. 18 years, American, Mechanic 16 years American, School. 10 years, American, School. 38 years, American, Housewife.	One case.	One recurrence in six months.	All my cases ended in resolution, excepting one which was operated on and died.	Leeches, Opium, Salines, Enemata, Blisters.	I believe the operation to be a good measure of treatment. We must be guided by the condition of the patient. If the pulse is fast, the temperature high and other bad symptoms, operate.	Fairly favorable.	As in all inflammatory conditions there must be, first, an irritant, then congestion and exudation ending in resolution or in suppuration. In the catarrhal variety when resolution occurs there no doubt is a thickening of the appendix with occlusion or there may be partial resolution and sub acute inflammation ready to light up at any time.
Foster, J. P. C.	10	?	0	9 males, active, strong healthy, American.	All Recurrent.	From 4 to 40.	Abscess in 3 cases Resolution in 4 " Operation in 3 " without abscess. The operations were intercurrent.	Salines early, will clear matters up. Resolution will occur as well as with poultice, if the case is clear there is no use to delay the operation.	Leave that to the surgeon, but I expect him to operate when I find the tumor does not tend to resolution and the pulse is rapid and thin. I don't care for the temperature.	Excellent if time is not wasted with poultices and talk.	I do not believe in the distinctions between Appendicitis, Typhlitis, Perityphlitis, Circumscribed Peritonitis, etc., etc.
French, W. F.		3	4	Young active males.	" 3	One had four. " " three. " " two. One attack seems to predispose to another.	Two cases resulted in abscess. Both recovered	Hypodermatic morphia to control pain, irrigation of Colon. Calomel, Salts, Hot applications and recumbent position.	Impending perforation demands an immediate surgical exploration. If the symptoms indicate the above event, would operate at once.	Good.	Have had 13 cases of apparent colic, the pain referred to the right inguinal region, all recurrent, no deaths. As to nature of the disease I think that pathogenic germs are taken with drink and food and they find lodgment in the cæcum.
Graves, C. B.	9	8		8 males, 9 females, ages varied from 6 to 60 years, most of them were American.	1	In one year.	Out of 17 cases (including suspects) there were 3 abscesses all of which recovered, there were 4 deaths from general peritonitis, 2 died very suddenly.	Should not dare to use salines, except at the very outset. I advise absolute rest, opiates sufficient to control pain and external heat.	No opinion.	Serious.	I think that irritation caused by the pressure of foreign bodies, especially fecal concretions, plays an important part in the disease.
Howe, H. G.	15	None.	None.					A well defined tumor during a primary attack calls for an operation, otherwise Salines, opiates and external heat.	Always operate during an interval or after the first attack.	Fair.	It is very doubtful that a microbe enters into the disease.
Jennings, Geo. H.	5	None.	None.	5 yrs. male, American. 30 yrs. male, American farmer. 17 yrs. male, German, farmer. 44 yrs. female, American, housekeeper. 28 yrs. male, German, teamster, all active.	1	5 recurrences	2 abscess. 3 resolution.	Enemata, opiates.	Operation if possible.	Very guarded.	
Johnson, M. M.	12, all within the past 15 months.			5, 45, 30, 19, 28, 41, 44 and 21 years. 7 males, 2 females, all Americans. 8 temperate. 1 intemperate.	8		3 abscess.	Salines are of value to remove undue pressure of overloaded bowels. Counter-irritants are of no value: opiates are harmful.	A clear diagnosis is sufficient to call for operation immediately at earliest possible moment either in primary or recurrent attack. If possible, operate during interval.	Exceedingly good after operation.	Statistics. Cases without extensive adhesions, exudate masses or pus. No. 5. Recoveries 5. Deaths 0. Cases with extensive adhesions, without exudate masses or pus. No. 1. Recoveries 1. Deaths 0. Cases with exudate masses or pus, No. 3. Recoveries 3. Deaths 0.
Mailhouse, M.	10	4	0	7 years 1. 10 " " 1. 20 to 30 years. 3, 30 to 40 " 2, 40 years, 1, 45 " " 3. All but two males, all active, healthy, temperate.	2	One had three. One had two.	Six in abscess. One after operation was found to have ulceration.	Purgatives to begin with, opium only for pains. Ice or where impracticable poultices, milk diet, remedies for flatulence.	I believe in operating when pus is known to be present. I do not believe in operating during the interval. I am much perplexed on this point.	Generally favorable.	I recollect a case where pus was confidently believed to be present, but there was not found any thing but a thickened appendix. The patient died from shock. I think the greatest predisposing cause of the disease and its recurrence is constipation and labor involving strain of thigh muscles and abdominal parietes.
May, A. E.	5	2	1	All between 18 and 30, all males of good habits.	1	Three attacks at intervals of four weeks and two months operation and recovery.	It is an infectious, exudative inflammation tending towards destruction of the appendix.	No Salines. Opium is indispensable.	If a surgeon is available, death is quite unnecessary.	Good after operation.	Violence is the common cause of the disease.
Pendleton, C. H.		1		Male, farmer, American, temperate, dyspeptic.			Recovery after abscess.	Salines and Opiates.	No opinion	Grave.	
Seaver, Jay W.	4	3		All between 18 and 32 years. All males excepting 2. All Students or teachers excepting 2, all sedentary excepting 2, all Americans.	3	Attacks recur once a year.	Resolution of the disease.	Complete rest, Salines, Opiates and constant application of dry heat.	During interval the operation should be done.		
Thomson, E. S.	3	1		Males under 30, healthy Americans of active habit.	1	Two attacks in three months.	Two-thirds of the cases terminate in resolution, one-third in abscess.	Poultices, Salines rapidly repeated. I think that opium obscures the symptoms.	No operation until there is reasonable certainty that pus is present, nor if the patient had had several previous attacks.	Good.	I think that those of active habits are most likely to take the disease. Most of the cases are due to catarrh; not a few to fecal concretions. In most cases a pathogenic microbe is found.
Wilson, Wm. V.				Male adults, active.			Resolution without abscess.	Salines and Opiates.	Early operative interference.	Good.	
Wright, J. W.	2		1	1 male, 1 female, both young, temperate.	1	Two attacks.	1 case resolution 1 case death after operation, following suppuration.	Rest in bed, Hot moist applications, Castor Oil, Stimulating Enemata, Hypodermic Morphia.	Consider recurrent attacks less dangerous than primary. If life was made miserable by frequent recurrence, or was endangered by any attack, would operate.	Fairly good.	I think the disease is due ordinarily to a retrograde metamorphosis of mucous membrane, but may be due to extension of septic condition in cæcum.
Anonymous.	10	15	1	From 12 to 30 years principally males, active Americans.			All but one case recovered, this one died from general peritonitis without demonstrable suppuration.	Opium as a basis, Salines only if clearly needed. Rest in bed, and moist heat.	Do not advise hasty operation. The presence of a tumor does not indicate pus. It is a seropastic exudate, which will disappear itself.	Favorable.	I believe that foreign bodies act as a cause in some but not in all cases.
Anonymous.	2	3	0	Mostly young, children or youths. One was a woman of 35 years.	0	All primary.	Two terminated in abscess discharging per rectum—one died, the others recovered by resolution.	First, Morphia subcutaneously, then Salines. Flush the bowels with high injections.	I favor operation in primary cases, but do think that the interval is the period of selection.	Good.	I believe that the majority of cases are catarrhal, but realise that traumatism is an etiological factor.
Anonymous.	10	4	1	8 males from 15 to 30 years, 2 females 19 and 29 years.	0	All primary.	All my cases were operated upon. One died from general peritonitis.	Opium is my sheet anchor. I think that catharsis does harm. Hot external application I value highly. I use tobacco poultices	In every case where a well defined tumor is made out with history of previous attack, operate.	Good after operation.	I regard over-eating constipation and indigestible food as active causative agents, as also traumatism, previous attack and male sex.

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perate and undisturbing habits of the sex. Nativity seems to be of no influence. That there is a special predisposing cause inherent to the victim, seems not well sustained. Of special causes, such as habitual constipation, violence, and adjacent inflammation of catarrhal nature, the former seems the most potent, and indeed of paramount importance, but traumatic and inflammatory results to the appendix are not ineffective causative agents. A special microbe as initiating the disease is not at this day established. There seems to be little difficulty in making a diagnosis of the disease. The difficulty lies in the determination at its onset as to whether it is going to be a severe or a mild case, and a mild case ending in resolution is always likely to be looked on as a doubtful case. A severe case of abdominal inflammatory disease, particularly of the right lower abdomen, is at this day never regarded as cellulitis, peritonitis or as a special form of enteritis, to the exclusion of the consideration of the appendix. At least, it has been found safe to follow this plan and the histories of cases have justified this view. As mentioned, the disease has a tendency to recurrence. This is a salient feature of it. The interval between attacks may be extremely long so that a patient may be never seen again, or more likely re establishment of the diseased condition may be prompt and of frequent repetition. There is thus formed a habit for the disease which is most likely influenced by mild traumatism from within as well as from without, which does not render the sufferer more tolerant of his state of the blind gut, but rather increases his chances of attack and endangers his life the longer he lives from the date of the primary attack. The legendary opprobrium attaching to the appendix as a trap for the death-dealing grape-seed and its morphologous kindred is slowly fading to nothingness as it is more and more demonstrated that with an appendix free of such a foreign body, intact as regards its walls, fatal appendicitis is entirely possible, is rather the rule than the exception, that there need be no seed or if a hard body does start the pathological process it may be, yes, most likely is, a fecal concretion, an enterolith, a choleostearate calculus. But catarrhal inflammation with destruction of the mucosa, with ulceration of the submucosa, and dyalisis of the serosa may be

sufficient for the evil thereof without any foreign body. This is now universally accepted, and just so is it accepted that death is the final bad outcome of the disease, but the constant liability to recurrence is an evil only one degree removed in seriousness from vital extinction.

Briefly, three varying pathological conditions may obtain in the disease.

The disease ends in resolution with the integrity of the appendical tissue unimpaired, or it ends in resolution with thickened gut wall, the mucosa tumefied, hard, leathery, the cellular tissue infiltrated, indurated, the vascular spaces choked out, the serosa swollen, lymph plastered, adherent, or the process ends in sloughing, perforation, abscess formation either with adherent tissue surrounding, acting as a protective against pus absorption, or without. In the latter event shock, pyemia, or general suppurative peritonitis ends the drama. In the former the pus may find its way out in a quick, direct, and benign way or may burrow along devious paths moving tardily to a point of exit rarely reached without accompanying exitus lethalis of the patient.

The clinical picture of the disease in marked cases is possessed of sharply defined unmistakable features. A prodromic feeling of weight in the right iliac region, vague discomfort, anorexia, lassitude, constipation, a sudden chill, generally solitary pulse, temperature and respiration not much influenced at the outset, the focalised pain becomes more pronounced and nausea with vomiting may supervene. The patient is of necessity confined to his bed; his general symptoms, as above enumerated, become intensified, the pulse becomes weak, thin, rapid; the temperature rarely mounts to the hyperpyrexic point, the respiration becomes short, the countenance pinched and anxious, denoting suffering, the abdomen board-like or doughy, a tumor or resisting area at the cæcal site. If the disease is to terminate fatally hiccough becomes a prominent symptom, a fall in the temperature, coldness and clamminess of the hands and other signs of collapse supervene. Under favorable circumstances there is abatement of symptoms and slow convalescence.

Of the treatment of appendicitis it may be said that the disease is of right and should in all cases be regarded as surgical.

It makes no difference that cases get well without an operation, the patients do not get well, they live in abeyance of the disease and at no time are they safe from an attack with all its dangers. The medical treatment is indeed no treatment. It is a matter of indifference whether opium or salines are given or nothing. Cases will resolve themselves pro tempore, uninfluenced by any purely medical measure; the operation removes the offending element without which there is no appendicitis. There is a time of selection of the operation, not always wisely chosen. There are operations done which at the time of their performance are most necessary but the operation in any case is demanded at some time and at no time is it a wasteful and improper proceeding. Those most familiar with the disease are mostly in favor of it, but conservative surgeons will always in this, as in everything else pertaining to their calling, use judgement and discrimination and it is a duty of those who have a right to speak on the subject to educate the medical world on this important point, that the prognosis of appendicitis is not, per se, bad in a primary attack, that one attack is the forerunner of others, that the disease may at any time terminate unfavorably and that life may be saved by timely interference, and that interference by medicines is a simulacrum and not a reality and the true reality of treatment consists in one thing only, and that is the removal of the obnoxious, superfluous and dangerous appendix vermiformis.

Appended to the foregoing is the contribution of Dr. W. H. Carmalt, which, on account of its full and exhaustive treatment of the subject, is presented in its entirety under the title of "Appendicitis as Occurring in the Practice of Doct. W. H. Carmalt."

A BRIEF CONSIDERATION OF THE CASES OF APPENDICITIS OCCURRING IN THE PRACTICE OF PROFESSOR WILLIAM H. CARMALT.

My experience in Appendicitis relates to forty-one cases all told —not counting Hospital cases under the care of my colleagues which I saw in consultation;—and while this number is not large enough to justify any positive generalization, it does present a sufficient variety to show that the clinical aspects are of great diversity and should, for that reason, make us extremely careful not to dogmatize or lay down hard and fast rules for diagnosis or treatment. I am less disposed to make positive rules the more cases I see, and I fully appreciate the feeling prompting the statement of my friend, Dr. Richardson of Boston, whose experience probably ten-fold outnumbers mine, who finds that writers are disposed to be positive in inverse ratio to their experience.*

In the cursory remarks I have to make in response to the circular letter of your Committee on Matters of Professional Interest, I shall not try to follow the series of questions they have issued, however admirably devised for the purpose of bringing out the experience of members of the Society, nor shall I confine myself to the cases occurring since 1888 as then suggested, although it goes without saying that by far the greater number have occurred since that time. Indeed the first four cases on my list are diagnoses made by "hind" sight: in thinking over the experiences of more recent years; before indeed the term appendicitis became the household word it now is in medical circles, while we still spoke of Typhlitis, Perityphilitis, and Peritonitis as separate and definite entities. Of these, one recovered after spontaneous evacuation of an abscess into the vagina; one died of a general suppurative peritonitis, from what I now suppose to be the rupture of an appendicecal abscess into the peritoneal cavity; one died of a general peritonitis without rupture, the autopsy first showing the abscess; the other declined operation for intestinal obstruction, but died from general peritonitis; the autopsy here also first revealing an appendicecal abscess as

*American Journal Medical Sciences, January 1894. p. 2.

the origin of the trouble. Leaving out these four cases which were not considered in the light of the most advanced ideas of the present time with regard to the asserted imperative necessity of operating upon every case, and even upon removing the appendix of children as a hygienic precaution against possible future trouble; we have thirty-six cases to consider and I shall take the liberty of considering them entirely from a clinical standpoint.

We can divide them at once, into two main groups, viz.: the suppurative and the non-suppurative, and these may again be considered, practically, surgically or therapeutically, each under two heads: the first or suppurative form into exactly when or when not to operate, (for no sane physician in the light of our present knowledge of abscess formation can for an instant hesitate as to the advisability of opening an abscess rather than waiting for it to open itself—the only reasons for delay being either the uncertainty of diagnosis or a concession to the feelings of the patient or friends). The second or non-suppurative form, into whether or not to advise an operation at all. This same division allows itself to be expressed, according to the clinical features as mild or severe, the former being the non-suppurative, the latter, those which go on to suppuration; and there is here also a further subdivision to be made of the mild cases into single and relapsing cases, while the suppurative may be classified into those pursuing a fairly gradual and uniform course, separating the pus from the peritoneal cavity by firm adhesions, and those in which no or but slight adhesions are found, and the pus is sooner or later discharged into the peritoneal cavity with the almost inevitable result of a fatal suppurative septic peritonitis. These may appropriately be designated the explosive or fulminating variety. At the extremes of these cases, the surgeon's skill does not have much occasion to be exercised. In the first attacks of cases pursuing a mild course, no surgeon with a proper sense of responsibility will advise an operation,—the epigrammatic dictum of "an inch and a half incision and a week and a half in bed" as a summary to justify a surgeon in his advice to a patient for every attack of colic, or to quote, "as soon as the first symptoms of appendicitis occur"* is too absurd to be

* Morris, New York Medical Journal, January 27th, 1894, page 98, second column, first line.

mentioned otherwise than in condemnation—and the condition of a patient with a suppurative septic peritonitis is so hopeless that the technique of the washing out of the abdomen is not a matter of much fineness of detail. On the other hand however, in the fortunately larger number of intermediate cases, the determination of the presence or absence of pus in a tumor of this region, and the exact relation of this tumor and its contained pus, with the details and technique of the opening of the abscess, when it may be that the peritoneal cavity is not firmly closed off from the pus cavity, and the further question of the advice to give with regard to the propriety of operating, and the method thereof in the relapsing non-suppurative cases, are points calling for careful judgment and accurate technical skill.

The non-suppurative cases are usually regarded as catarrhal in character, and like catarrhal inflammations elsewhere are liable to recurrences and it is in this that their danger lies. It has been a matter of observation since the beginning of the study of diseases that certain persons are liable to attacks of so-called colic, followed by a peritonitis of more or less severe character, but it has been reserved to the present generation to bring certain of these cases into a class of surgical disease, capable of being cured by a conservative operation, or of being altogether averted by an operation of a prophylactic character.

In my list of cases appended to this article, fifteen were non-suppurative; of these fifteen, eight were not operated upon, of whom four declined the operation, though advised to have it done, and in four no operation was advised, although the symptoms justified the diagnosis of appendicitis, because they were all first attacks subsiding in a few days; of the remaining eleven, four, as above stated, declined the operation for various reasons, some from dread of any operation, others because they could not be convinced of the dangers of delay, and others put it off to a more convenient time. Of the seven who were operated upon in the interval, all presented pathological changes in their appendices of greater or less extent, and there has been an entire cessation of their more or less frequent attacks of colic. This, furthermore, most ~~frequent~~ pregnant fact is also established in cases Nos. 5, 9, 14, 19, 20, 29, that the abscess for which the operation was perform-

ed, was the culmination of a series of attacks of colic, more or less definitely referable to the cæcal region, showing that the non-suppurative catarrhal form of the disease may, after a time, become suppurative. Indeed this is the legitimate ending of repeated attacks, and is the reason for the operation during the interval between the attacks, when the parts are in a quiescent state, with no infectious material to contend with, and consequently the danger of opening into the peritoneal cavity reduced to a minimum.

Limited as is the number of cases here considered, they include illustrations of all the principal varieties that I have seen described by authors, (except a class described by Dr. Fowler, of Brooklyn, who reports four cases of left-sided appendicitis, the diagnosis having been verified by or made on autopsy). As already stated these may be readily classified into non-suppurative and suppurative classes, and while pathologically this is a chasm of great width, as a matter of clinical distinction the one passes over into the other by almost imperceptible steps. In many cases we are quite unable to point to a single feature that would distinguish the one class from the other, and we are obliged to have recourse to the doctrine of probabilities and take the chances of operating unnecessarily rather than let the patient run the greater risk of some untoward complication of the purulent infection. I have not an over-inclination toward operative interference in any case, but in no case have I regretted operating, while in several I have regretted postponing the operation; in two, Nos. 24 and 38, with unfortunately fatal results. As it is from our ill successes or mistakes that we learn the most, these two cases will hereafter be given in greater detail.

By far the greater number of cases begin as a catarrhal appendicitis; the cases operated upon in which a foreign body of any kind, be it a fecal concretion or a seed, or shot, are rare as compared with those in which nothing is found, and appendices removed "in the interval" show various changes with more or less thickening of all the coats, indicating a state of chronic inflammation and tissue hypertrophy with not infrequent circumscribed collections of mucus or muco-purulent secretions which

have become encysted by the occlusion of the canal of the organ. This condition may and undoubtedly does in many individuals persist for many months or years, as is shown in autopsies of persons dying of diseases unconnected with the appendix ; but it is a condition of uncertainty as to the future, and the histories and the pathological investigation show that a certain number of suppurative cases coming either to operation or post-mortem examination have come about by the development of an abscess from one of these chronically inflamed cases. It is not my purpose here to describe the pathology of the disease or the cause which brings about the transition from mucus to pus. I propose simply to discuss the clinical features of the disease from the point of view of the practitioner as he meets them in the course of general practice, without reference to the bacteriological pathology.

In by far the greater number the onset is apparently a colic of considerable severity, and in many cases it is quite possible that it passes off without any further development, but as we observe further we find that certain of them have more or less frequent repetitions of the attack, until at some one, (or it may be at the first), the pain localizes itself in the course of a few hours in the right iliac fossa. The colic may or may not, but more frequently is accompanied with vomiting; the condition of the lower bowel presents nothing characteristic and is of no value in a diagnostic view; there may be one or two movements, they may respond to the action of a cathartic, they may be inactive, there may be obstinate constipation, amounting to the suspicion of an intestinal obstruction. With the gradual localization of the pain to the right iliac region there is soon felt a sense of resistance to manipulation on the part of the physician, and it becomes a question of importance whether this resistance be due to muscular contraction on the part of the abdominal muscles or to an inflammatory product in or around the appendix, and I have thought there was a difference in the position of the leg in the two conditions. If there be a veritable tumor the patient prefers to keep the leg bent and quiet, while if it be simply a contraction of the abdominal muscles the movements of the leg do not affect the local pain. The situation of the point of great-

est tenderness has its bearing, and while "McBurney's point" is true for a large number of cases of appendicitis, it still is sufficiently often the case that the point of greatest tenderness is not so situated, so that nothing positive can be asserted by its absence. When the point of greatest tenderness is exactly on the line from the anterior superior spinous process of the ilium to the umbilicus, and at the distance of one and one half to two inches from the former, we are reasonably sure that we are having to do with an inflamed appendix in its usual position, but if the inflamed appendix be not in its usual position the point of greatest tenderness is somewhere else, so that this point upon which so much stress as a diagnostic sign has been laid, is only of value as an affirmative—as a negative it is valueless, and the opinion is becoming pretty well established in the minds of surgeons that all inflammations in the right iliac fossa are due to one or the other forms of appendicitis.

If the case is pursuing a mild course under a treatment of rest, gentle catharties, and fomentations, the pain and tenderness subside, the tumor becomes less marked and may entirely disappear in the course of a week or so, to be followed at a variable interval of weeks or months or years by other attacks of similar or perhaps greater severity; one of which, however, goes on to the formation of pus. No one can tell from a clinical standpoint what determines the change. Indeed, evidence accumulates that many people go through life with attack after attack of catarrhal non-suppurative appendicitis, but these people are living over a volcano which is liable at any time to an eruption, and when such a thing occurs we have but an uncertain control over its subsequent course. It may give a surgeon time to open the abscess with safety; it may rupture into the peritoneal cavity almost without warning. In the less explosive class, when the catarrhal form passes over into the suppurative, with the formation of a wall of adhesions around the pus, agglutinating the intestines together and forming a mass which may be felt through the abdominal wall as a fairly firm tumor, we have a condition of things more or less under control; we can, if we choose, wait until adhesions have taken place between the wall of the abscess and the abdominal wall; we may, if we feel sure

of our asepsis, open the peritoneal cavity, and holding the intestines aside open and empty the abscess without contaminating the surrounding tissues. The former method was the universal practice when Typhlitis and Perityphlitis were the terms used to signify the situation of the abscess, and before we felt it was, under any circumstances, permissible or safe to open the peritoneal cavity—but recent surgery has taught us that in a certain number of cases there is a decided danger in waiting for these adhesions to form, and for the containing pus "to point;" that instead of "pointing" to some accessible situation on the external surface, it may "point" into the peritoneal cavity and, discharging its contents there, set up that almost uncontrolable disease, a suppurative peritonitis. If the pointing involves the wall of an intestine, cicatrices are liable to form, giving rise to complications which may lead to disastrous results years after in the way of intestinal obstruction. For these reasons, the treatment of these abscesses by surgeons who may justly be called ed conservative—in that their practice tends to preserve life—is to open them at the earliest moment that pus can be assured to be present. One may be guided somewhat by the course of previous attacks if such have been present, for if such is the case there is more probability that the adhesions have formed and that the course of the disease will be relatively slow as compared with the fulminating variety in which a fecal concretion formed in the appendix is most frequently the cause. Still, we occasionally meet with cases running a rapid course even in recurrent attacks, and one can never feel easy in a given case after pus has formed, until it has been given a safe exit through the external skin.

In the milder cases where the attacks pass off without the formation of pus, but in which a tumor has been present which has to a great measure, or even entirely subsided, the question of operating in the interval comes up. These cases, not infrequently, have been known to recur for years; they have been called various kinds of colic, bilious or otherwise; or localized peritonitis; are ascribed to some error in diet; are treated in various ways to restore the functional activity of the canal, the physician and patient resting in fancied security until one attack de-

velops into a "peritonitis;" and abscess, or death, or both puts an end to the tragedy.

No. 3 in my list is a case in point, and with some modification, also No. 20; in both of whom autopsies first revealed an appendicecal abscess appearing after repeated attacks of so-called idiopathic peritonitis, while Nos. 11, 16, 23, 25, 26, 32 and 41 show the happy results of removing the appendix in the interval between attacks of various degrees of frequency and intensity, but in all of whom the operation has been followed by a complete cessation of the attacks of "peritonitis," or "bilious colic," diagnosticated according to the fancy or pathological acumen of the physician.

The fourth and last class of cases that I have met with are fortunately rare, but as, if properly appreciated in the earlier stages, they are amenable to surgical treatment, within limits, it behooves us to be on the alert to recognize them, and yet it may be that, having the keenest possible sense of the dangers of delay, the symptoms are so uncertain that the true condition is not realized. (Case No. 24). These are the fulminating cases with occlusion of the canal of the appendix by a foreign body, be it a seed or some such thing, or a fecal concretion which has grown large enough to strangulate the circulation of the tissue and gangrene of the part beyond results. In these cases the suppuration takes place so rapidly that nature has not time to build up the wall of adhesions around the pus and it breaks into the general cavity with a minimum of movement, be it of the abdominal wall or of the intestines, and general septic purulent peritonitis breaks out that rapidly leads to a fatal termination,—forty-eight to ninety-six hours being often enough to close the scene. The only safety in these cases is an early operation, and the thorough washing out of the peritoneal cavity with antiseptic or sterilized water, with the use of such other remedies as the general condition demands. Desperate cases have been reported cured under these conditions, but the outlook is of the gravest. The unfortunate circumstance that the early symptoms of these desperate cases do not correspond with their gravity—at the outset are not markedly different from the cases which pursue a mild course—and the danger which lies in delay in this fulminating class is the

excuse and has been the occasion for operating in cases where nothing has been found. The justification of this last statement is not found in published reports, but is based upon personal, verbal statements of surgoons who would not care to have me publish their names, but whose names are guarantees that the operation was not undertaken through carelessness or want of consideration, but because, being unable to make up their minds conclusively, they preferred to err on the side of prudence, and have operated. This may seem like an extravagant way of stating the matter, but when one considers the relative dangers of a cleanly-cut aseptic incision—even though it lay open the peritoneal cavity—with the condition of a patient with a quantity of pus loaded with pyogenic and saprophitic bacteria, it cannot be regarded as such. So far as is possible to formulate the views derived from the consideration of these cases, the rules which should govern us are then, viz:

First.—Attacks of appendicitis of a mild character, may, and should be, treated without operation.

Second.—Recurrence, however, even if of a mild character, should be operated upon in the interval, and the appendix removed as a prophylactic against a possibly dangerous attack in the future.

Third.—Appendicecal abscesses should be opened as soon as the diagnosis can be established.

Fourthly.—"When in doubt, lead trumps;" *it is better in attacks of any severity to operate rather than to procrastinate,* hoping that time will reveal something decisive—on the contrary the lapse of time more frequently obscures than clears up the diagnosis.

Cases Nos. 24 and 38, previously referred to, are cases in point where delay made inevitably fatal results to cases in which an early operation would possibly, nay, probably, have saved life.

No. 24 was a student at college under the immediate care of my friend, Dr. Foster; the initial constitutional symptoms were severe but the local evidences of appendicitis were not marked. He lived at a distance and word was sent that his father was coming on accompanied by his own surgeon. Not wishing to seem precipitate in operating, I deferred insisting until the evi-

dences of serious trouble became so marked that I refused to take the responsibility of delay, and operated before their arrival. Unfortunately, as already stated, the eighteen hours delay was fatal. We found a general septic peritonitis, due to the rupture of a thin walled abscess; the abscess itself covered by a gangrenous appendix in which a fecal concretion had lodged.

The other case was also of a young man, who was admitted into the New Haven Hospital on the third day of his illness with severe colicy pains, some tenderness in the lower part of his abdomen, not localized in his right iliac fossa, but with an indefinite sense of resistance there. Feeling reasonably sure of what I had to deal with, as is the rule of the Hospital, a consultation of the attending staff was called. Drs. Fleischner, Hawkes, and Russell, three other members besides myself attended, and it was decided by the majority that there were not sufficient evidences of localized disease to call for operative interference, but he was regarded as having an idiopathic peritonitis, (a condition that I do not believe exists), and no new symptoms developing, he was transferred to the medical side. After a few days, his condition gradually getting worse, he was re-transferred to the surgical side for operation for general suppurative appendicitis, in the forlorn hope that a thorough washing out of his peritoneal cavity would save his life. An incision in the median line for this purpose, showed no general peritonitis but an extremely congested state of the whole intestinal canal; no fluid in the peritoneal cavity, but there was a large post-cæcal abscess with the gangrenous appendix embedded in it. He died on the operating table. I feel confident that if he had been operated upon in the early period after his admission, his life would have been saved; and in this case, certainly nothing was gained in diagnosis by waiting. The subsequent symptoms served only to obscure the correct opinion first formed as to the origin of the trouble.

THE FOLLOWING IS THE LIST OF CASES.

1. Miss ——, Dr. Nickerson—Abscess, discharged into vagina.
2. Mr. ——, Drs. Nickerson and Bradstreet—General suppurative peritonitis. Laparotomy by Dr. Hartley. Death.

3. Mr. P——, Dr. F. H. Wheeler—General non-suppurative peritonitis; Autopsy, multiple abscesses.
4. Mr. P——, Dr. Gaylord—Diagnosis; intestinal obstruction; refused operation—autopsy; general non-suppurative peritonitis; abscess of appendix found.
5. Mr. V——, Dr. Grannis—Abscess recurrences in Jan., 1891; recovery. Secondary abscess in September following—death from general peritonitis.
6. Miss M——, Dr. Luby—Catarrhal appendicitis, tumor, operation advised by self, Drs. Bacon and Russell; refused—recovery; no history of discharge into internal canals or of recurrences.
7. Miss C——, (60), Drs. Grannis and Bidwell, of Deep River; Abscess, operation, recovery.
8. Master L——, Dr. Grannis,—Catarrhal appendicitis, tumor; advised non-interference; recovery; no recurrences.
9. Master F——, Drs. Grannis and Hubbard, Essex—Following recurrences; abscess; operation; recovery.
10. Laborer, Hospital patient; sent in by Dr. Mailhouse—Catarrhal appendicitis, tumor; no interference; recovery.
11. Mr. B——, Dr. Osborne—Three attacks of catarrhal appendicitis; advised intercurrent operation; performed at Hospital; thickened appendix; recovery.
12. Colored janitor, sent to Hospital by Dr. DeForest—General adhesive peritonitis; great tympanites; incision in median line, opened into intestine; abscess behind cæcum dissecting up to diaphragm; appendix gangrenous, containing fecal concretion.
13. Mr. G——, Dr. C. J. Foote—Abscess; following recurrences, operation; recovery.
14. Russian Jew, Hospital patient; several recurrences followed by abscess; long continued sinus; recovery.
15. ——, Hospital patient; admitted moribund; great tympanites; general suppurative peritonitis; abscess behind cæcum; patient ambulatory until day previous to death.

16. Mr. W——, Dr. Osborne—Catarrhal Appendicitis; intercurrent operation advised; performed by Dr. Lange; necessity of operation reported by attendant.
17. Master K——, Dr. Shelton—Traumatic Appendicitis, abscess; operation; recovery.
18. Miss——, (13), Dr. W. S. Russell—Abscess; no operation; discharge into rectum; recovery.
19. Mr. S——, Drs. Shelton and Richardson—recurrent attacks, abscess; operation; intestinal fistula; recovery.
20. Miss S——, Dr. W. G. Daggett—Repeated attacks of peritonitis of supposed ovarian origin; general adhesive peritonitis; operation; death; autopsy, appendicecal abscess; no Salpingitis.
21. Mr. M——, Dr. J. W. Seaver—Catarrhal Appendicitis; tumor; recovery; recurrences; operation advised; declined.
22. Mr. G——, Dr. J. W. Seaver—Catarrhal Appendicitis; first attack; recovery.
23. Mr. S——, Dr. Foster—Catarrhal Appendicitis; several recurrences; tumor; recovery; intercurrent operation; appendix much hypertrophied; no subsequent attacks.
24. Mr. N——, Dr. Foster—Ulcerative Appendicitis; general septic suppurative peritonitis; operation; fecal concretion; death fifth day.
25. Mr. G——, Dr. Wright—Catarrhal Appendicitis; tumor, recovery—second attack two months, tumor; recovery; intercurrent operation performed, recovery; appendix hypertrophied.
26. Mr. DeB——, Dr. Foster—Catarrhal Appendicitis, frequent attacks; intercurrent operation, recovery; appendix hypertrophied; no subsequent attacks.
27. Mr. R——, Dr. Bellosa—Abscess, operation; recovery.
28. Mr. G——, Dr. Bellosa—Abscess, operation; recovery.
29. Mrs. P——, Drs. Foster and Daggett—Abscesses (multiple), operation, recovery, with long continued sinueses.
30. Mr. G——, Dr. Fleischner—Abscess, operation; recovery.
31. Mr. B——, Dr. Grannis—Abscess, operation; recovery.

32. Mr. D——, Dr. Foster—Recurrent catarrhal appendicitis; intercurrent operation, small fecal concretion, slight ulceration of mucous membrane; recovery.
33. Mrs. B——, (69)—Dr. Tenney—Catarrhal Appendicitis; recurrent, operation advised; declined.
34. Mr. F——, Dr. Foster—Abscess, operation; recovery.
35. Miss D——, Drs. Hubbard and Foster—Recurrent appendicitis, (so-called peritonitis), operation by Dr. Stimson at New York Hospital; recovery; "great necessity for operation," reported.
36. Mr. S——, Dr. Mailhouse—Diffuse tenderness; operation advised and refused; came to hospital under Dr. Bacon's care; recovery.
37. Mr. H——, Dr. Randall—Abscess, operation; recovery.
38. Mr. Z——, Dr. C. P. Lindsley—Catarrhal Appendicitis, tumor; recovery—intercurrent operation declined, (second attack.)
39. Mr. F——, Hospital patient, Drs. Fleischner, Russell and Hawkes in consultation; clinical diagnosis—non-suppurative general peritonitis; operation not advised by consultants; peritonitis treated "medically;" became worse, operation advised as *dernier resort* for suppurative peritonitis; death on table; large abscess behind cæcum with no general peritonitis.
40. Mrs.——, Drs. Fleischner and Mr. Simrow—Recurrent catarrhal appendicitis, intercurrent operation advised; declined.
41. Mr. W——, Dr. L. W. Bacon, Jr.—Catarrhal Appendicitis; mild case; no tumor; tenderness disappeared and tumor found on ninth day; on tenth, operation performed, foreign body, Johannisberry or biliary calculus.

The Reporters of Hartford, Litchfield, Middlesex and Windham Counties have made no report.

Doct. W. H. Donaldson, the Reporter from Fairfield County, has investigated the following: The working of the new Medical Practice law, and the working of the new Health Officers law, but the returns which he has received to his inquiries have been insufficient for the formulation of a report.

Doct. O. T. Osborne, the Reporter from New Haven County, has investigated the subject of "Epidemic Influenza or La Grippe." His report is herewith presented.

Doct. Julian La Pierre, Reporter from New London County, presents reports from his own and Tolland County, of cases of interest which have occurred in that section of the state during the past year.

PART II.

CASES REPORTED BY PHYSICIANS.

STRANGULATED INDIRECT INGUINAL HERNIA, RIGHT SIDE. OPERATION—RECOVERY.

May 19th, 1893.—Was called by Dr. W——, to see Mrs. S——. She had been confined to her bed for some few days with an attack of La Grippe, which was attended with violent attacks of coughing. During one of these attacks while lying down, she was seized with a sharp pain in the right groin This pain continued to increase in severity, and finally she summoned Dr. W——, and he called me.

The right groin was the seat of a large swelling or tumor about as large as a man's fist; which swelling, the patient says, has been in existence since she was nineteen years old, and has never caused any trouble, but has varied in size considerably at different times. She has been married about fifty years, and has raised a large family of children. She says she thinks this swelling came after lifting a large tubful of water. The tumor was over the seat of the external abdominal ring, and extended outward to the right for some distance. It was quite tender, the skin was not edematous nor inflamed, but sensitive. Pressure seemed to have no effect on the size of the tumor, which was diagnosed as Strangulated Hernia.

As her pain was not at this time very severe, we decided to pack the tumor in ice, and gave small doses of opium, enemata, etc.

May 20th.—Was again called; woman in great pain; swelling much more tense; skin of darker color and slightly edematous. Decided to operate.

Was assisted by Drs. Witter, LaPierre and Paddock. Patient went under ether very well. Parts washed and shaved, then

washed with $\frac{1}{1000}$ Bichloride Solution Incision nearly following line of Poupart's Ligament, was continued down to the hernial sac. All bleeding points were ligated. Sac was very closely adherent to surrounding structures. Sac was now opened and found to contain a very large mass of omentum and one or two loops of intestine which were beginning to show the effects of their incarceration.

The Omentum was, in many places, closely adherent to the sac and evidently had been there many years. Most of the Omentum was removed, and after freely incising the neck of the sac, the intestine was returned.

In the sac and closely attached to the Omentum was found a body which was about as large as a walnut and which looked like a gall-stone except that it was smooth. The sac was now closed and closely stitched to the borders of the ring. The wound was closed over a drainage-tube leading to the ring. This tube was, in the aftertreatment, removed gradually, granulations following its removal.

The patient made an uninterrupted convalescence The highest evening temperature was the fifth day after the operation, she having experienced a return of her Bronchitis, possibly encouraged by the ether. Temperature 101.2° She had no tenderness over abdomen; no pain—bowels moved the fourth day. Kept her in bed for about eighteen days, since which time she has been up and around. Says she has no pain; wears no truss and there seems to be no inclination on the part of the cicatrix to give away.

A DESCENDING TESTICLE.

REPORTED BY E. P. DOUGLASS, M.D., GROTON.

December 2, 1893.—L. W——, a well developed country boy, of nineteen years, consulted me regarding a lump in his left groin, in the region of the inguinal canal, just below the internal ring. It was about the size of a walnut; sensitive to touch, much inflamed, and gave acute pain on deep pressure, and decided impulse on coughing.

Found a small undeveloped penis and scrotum drawn up, with both testicles absent.

By much questioning, I found the patient supposed his genital apparatus all right, but as he remembered had never had an erection, nor had there ever been an emission of semen.

About four weeks prior to this he felt a short pain in the region of the internal ring, while lifting a heavy weight, and next morning noticed a small swelling at the internal ring, which would pass back with a little pressure or after exercise. This swelling continued to be present mornings and to disappear during the day-time for two weeks, when the swelling was constant, and would not disappear on pressure, but it gradually passed through the internal ring, and became so enlarged from inflammation he spoke to his father, who thought it was a hernia and wished him fitted with a truss.

Found neither testicle had ever descended into the scrotum, and that after all these years, remaining in abdomen, the left had started upon its journey.

Kept the patient in bed for about two weeks, and applied hot fomentations to the tumor, night and day, and by use of brisk salines, was gratified to see the swelling rapidly disappear and the testicle gradually pass into the scrotum.

Examination two weeks later showed a testicle in the left side of the scrotum, and all pain and tenderness had disappeared.

TETANY.

REPORTED BY C. B. GRAVES, M.D., NEW LONDON.

Inasmuch as well developed cases of tetany in adults are rare, it is thought that the following report of a case may be of interest:

Mrs. M——, aged 33, has had four children, all of which she nursed. The last one, born four months ago, has been a great care to her, and allowed her but little rest at night. During the past two or three months she has felt worried, nervous and tired, but has kept hard at work. For two months has been subject to numbness of the extremities, especially the upper, and to muscular soreness and stiffness in the morning. Her appetite has been good and her other functions normal. About March 10th, she began to notice occasionally a feeling as if she would fall, particularly when she looked sideways. March 14th, had numbness and slight twitching of the lips.

March 16th woke in the night, with a bad headache, and felt dizziness and slight nausea while rising. She got up however, but when she attempted to wash the baby her arms began to draw and she soon lost control of them. She became rapidly worse, with severe cramping pain in the arms and legs which were rigidly contracted, stiffness of the face, general numbness, especially in the arms and back of neck; strabismus and double vision, and profuse perspiration. I did not see this attack, but was told that the spasm and pain were most marked in the arms and hands. After about half an hour of maximum intensity the seizure passed away gradually, leaving the muscles lame and sore and the general surface numb and tingling. Her hands were so anesthetic that she frequently dropped small articles. These symptoms persisted until the next attack, which came on March 21st, in the forenoon. This was much more severe than the previous one, and lasted between five and six hours. The pain and contraction were first noted in the arms, and as before all the symptoms were most marked in the upper extremities.

I found her sitting up in bed rocking back and forth, moan-

ing and complaining bitterly of pain. Her face was flushed and covered with drops of perspiration, the brows raised, the lips somewhat pursed, and the cheeks drawn in. Her mind was perfectly clear, and her speech intelligible, though a little indistinct because of the rigidity of the lips. She could separate the teeth only a very little. There was no strabismus when I saw her but she stated that during the first part of the seizure she had seen double whenever she sat up in bed or looked to the side. She complained of being numb and of tingling all over.

The arms were in the characteristic position, strongly flexed at the elbows, the wrists well pronated, flexed, and turned to the ulnar side. The fingers and thumb were flexed at the metacarpophalangeal joints, but extended at the others, so that the tips of the fingers and thumb were approximated in the position in which a pen should be held. The lower extremities were extended, the feet bent down, the great toe still further flexed, the other toes about in the line of the foot and somewhat spreading. The tonic spasm was distinctly less marked in the lower limbs. The patient had no power of voluntary motion in the contracted parts, but movement at shoulders, hips, and neck was normal, and she could also bend the legs at the knees somewhat.

The spasm was continuous but subject to exacerbations. These could be brought on at any time by attempts to move the limbs, and by striking or otherwise irritating the affected muscles. Such manipulations also increased the subjective numbness. The contraction could be forcibly overcome, but upon letting go, the parts immediately resumed their former position.

There was marked anesthesia in the hands and arms, but very little in the lower limbs. Temperature 98.6°, pulse 132. Later in the attack, having left her for a few moments, I noticed on my return that the left upper extremity was in a wholly different position. It was still flexed at the elbow, but the hand was supinated and bent strongly backward, the thumb turned into the palm, and the fingers flexed strongly over it.

I gave this patient on my arrival Morph. gr. $\frac{1}{4}$ subcutaneously; repeated it in half an hour as the pain was no better.

A little later injected Atropia Sulphate gr. $\frac{1}{60}$. These meas-

ures had very little if any effect upon the pain and spasm, so that after waiting over an hour longer, I gave her, by the mouth, Bromide of Sodium, gr. xl. This seemed to have an immediate effect; the tonic contraction relaxed, the pain disappeared, and the patient soon fell asleep. During the next twenty-four hours she felt, on two occasions, a slight return of the pain and cramp, but each time thirty grain doses of Sodium Bromide checked the attack.

Her convalescence from this time on was rapid. The muscles of the legs and especially the arms, were sore and lame and stiff at first, and for about a week exhibited, with gradually diminishing intensity, the well-known increased mechanical irritability.

The numbness and tingling also persisted for several days afterward, and there was also occasionally a little twitching of the lips and a slight dizziness on suddenly looking to one side. The patient is now upon general tonic treatment, and there is good reason to hope that by building up her general health, the tendency to recurrences may be avoided.

A sister of Mrs. W., now thirty years of age, has had, during the past eight years at long intervals, some sort of spasmodic attacks in which the arms are in tonic contraction, but the patient loses consciousness, so that the affection is probably not tetany. It has some bearing, however, as showing a neurotic family tendency.

A CASE OF SUPERFETATION.

REPORTED BY ANTHONY PECK, M.D., NORWICH.

Early in the morning of July 7th, 1893, I was called to see Mrs. E., primipara, aged twenty-nine years; an uncommonly healthy, robust, young woman.

Flooding began an hour or more before I reached the house; it had been so severe that the patient was quite pale. On examination, the flooding was found to have ceased.

Some time after, on passing my finger to the os, I could feel something like a placenta, and also, a presenting portion of the fetus, which felt like an elbow, though it was no longer than my little finger.

I was at a loss to account for the size of the presenting part, in view of the size of the mother, whose appearance would indicate her to be at least eight months advanced. I ventured the opinion, there was anywhere from twins up. A little later, I was able to grasp an elbow, and delivered a small fetus. The placenta remained. In due time, another fetus was born, and was followed by two placentæ. Each placenta had a cord and a sac.

The first fetus was eight inches long, and weighed eight ounces; the other was fourteen inches long and weighed three and three fourths pounds. Both children were dead when delivered. The smaller placenta was implanted near the os, and its separation was the cause of the flooding; this in turn being the cause of death of each fetus. From the data obtained, the age of the smaller fetus was supposed to be three months; of the larger, seven months.

All of which is respectfully submitted.

HENRY FLEISCHNER,
E. P. FLINT,
E. P. SWASEY.
} Committee on Matters of Professional Interest.

May 24th, 1894.

REPORT

ON THE PROGRESS

OF MEDICINE.

SOME DISEASES OF THE PANCREAS.

D. CHESTER BROWN, M.D., DANBURY.

Mr. President, and Gentlemen of the State Medical Society :—

I have the honor of being assigned to the position of Reporter upon the Progress of Medicine, and it gives me great pleasure to accept this duty; as I fancied, here was opportunity without active cerebration on my part, of requiting in a measure the obligations we all incur when we listen to good papers from others, of at least making an attempt at a return in kind. To metabolise the secretions of others and bring them to your notice was attractive.

It has happened that within the past two years, two or three cases of Pancreatitis have come under my observation, and being struck with the idea that a disease considered so rare, should have come to the notice of one more than oneo in so short a time, I determined to look it up among other things, to report medieal progress upon. But the jade betrayed me, crowded out all other things by attracting my attention, winning my confidenee in her tangibility, and dancing promises of recognition before my eyes like a will o' the wisp, until, betrayed beyond my depth, I have nothing to present to you but a discussion of the progress of medicine in diseases of the pancreas, and know not but I may be presenting the vagaries of a dreamer. However, if I succeed in drawing your attention to this obscure subject, so that you bear it in mind and judge for yourself in regard to it, whether it be more frequent in occurrence than is generally supposed or not, and whether it is possible of reeognition or not, even if your verdict is against both questions, I shall be pleased to have drawn forth discussion on the subject.

The Pancreas has had a checkered career; at the end of the last and during the fore part of the present century, it was the objeet of almost romantie regard to practitioners of medicine, and as the romanee found but little food in the panereatie pathology of those days, the gland and its supposed diseases were gradually removed from their place of prominence, and receded

into what was thought to be harmless obscurity, which culminated only a few years ago and may be seen by a statement in Eichorst's excellent work, when he sums up the knowledge of the pancreas by saying: "Eine Diagnosis Ist Nicht Möglich, Therapie Dennoch Symptomatisch." It is a hard blow to medicine to have such a man as Eichorst say concerning the diseases that are supposed to affect *any* organ, that they are impossible of diagnosis and, therefore, treatment must be symtomatic. Fortunately, the embargo so laid has not been respected, and each year, we note more cases reported of this organ being diseased. The surgeon, unwilling to leave anything beyond his ability of rendering assistance, found that in accidents where there had been a protrusion of the pancreas, he could reduce the whole organ, or a portion injured could be removed and the remainder returned. Next, that if he could only have diagnosis of cysts in the organ, that they were operable. Still more difficult of diagnosis and of operation, he has found that abscess in the pancreas is accessible to him and gratefully responds to his efforts at assistance.

Following in these signs of progress, we find this statement in Osler's recent work on practice, "the literature of the past few years shows that this affection" (acute pancreatitis), "is much more frequent than has been supposed," and again: "A correct diagnosis was made in a case by Fitz, and the possibility of the presence of this condition must be considered in all abdominal cases which come on suddenly, with intense pain in the epigastric region, vomiting, and distension of the abdomen." This is certainly an attempt at progress if we can maintain it.

It is to be expected that an organ difficult of access, which has been placed outside the pale of interest by the clinicians and pathologists, will not receive the attention from anatomists and physiologists that it would were they called upon daily for explanation of contradictory conclusions, obscure functions and the reduction of gymnastic hypotheses to sober reasoning. It is partly the penalty of neglect, then, that leaves us so much in doubt as to the functions of this organ and what may be considered functional disturbances. If functional disturbances of the pancreas can be recognized, there may be a diminution in

frequency of enteritis, gastralgia, gastritis, and even catarrhal jaundice. So too, if we can make our first step, in early diagnosis, we may be able to avoid some of the untoward terminations of diseases of the pancreas, and ultimately find a line of medication that shall be beneficial.

With your leave, I will recall to your mind a few points in the anatomical relations of the pancreas, and what we are supposed to know about its functions:

The pancreas is a racemose gland, located back of the peritoneum, against the abdominal aorta, at the level of the first or second lumbar vertebra. Of course with a bone backing and the abdomen in front, it is a difficult location to get at. We have choice of three ways of access to it from the front: first, and most direct, by going through the anterior wall of the abdomen the stomach is drawn up, the colon drawn down, both layers of peritoneum forming the great omentum are divided and you are then in the lesser peritoneal cavity, the pancreas being directly behind the ascending layer of the mesocolon. This is the most direct, and is found by cystic tumors and abscesses in working toward the front, to be the easiest way of attracting attention. It is of course necessary to have an empty stomach and colon to palpate the organ in anything like its normal state and then, distance, adipose tissue and the resistance of the muscular tension are the great obstacles. A cyst of any size may overcome these sufficiently by working forward, to make itself readily recognizable at the anterior abdominal wall. Secondly it may be gotten at by raising the liver, depressing the stomach, tearing through the gastrohepatic omentum, and then, dividing the same layer, the ascending of the mesocolon as in the first method. Lastly: both stomach and transverse colon being raised along with the great omentum, the descending fold of the meso colon is divided, the duodenum pulled a little down and the pancreas is exposed.

For dimensions, it may according to Gray and McClellan, be considered as weighing from two to three and a half ounces, though it may reach as high as six; from six to eight inches long, one and one half inches wide and from one half to one inch in thickness. That thickness and width in a soft gland

certainly does not give one very much of a sensation in feeling through the abdominal wall. Its long axis lies transversely across the abdomen, with the narrowing tail end lying in front of the vessels and hilum of the left kidney. The right end, clubbed, is turned down and as it is called the head, we may as well accept the figure of speech, and think of it as a head, with the crown in the curve of the duodenum, the face downward and buried in the transverse or third portion of the duodenum. The duct from the liver comes down diagonally across the right temporal region of the, so-called, head and uniting with the duct of Wirsung from the pancreas, enters the duodenum at about the external angle of the right orbit. Across the right ear ascends the Vena Cava and in the fold under the chin, the superior mesenteric vein hastens to join the cava, making the junction at about the level of the ear. The celiac axis is just above the body of the gland and surrounding it the solar plexus.

Out of these relations, we may note the following points of importance: an enlarged gland, cyst or tumor in it, may, by transmitting the pulsation of the aorta, give rise to diagnosis of aneurism. The superior mesenteric vein is in position to be compressed and cause ascites or hemorrhage from the bowels. The Vena Cava being compressed might add edema of the lower extremities to the ascites. Or the common duct might be pressed upon, even without a solid growth being present, simply by enlargement of the head and neck of the gland, and cause all the symptoms of obstructive jaundice. The solar plexus is so near the border of the gland and in such intimate relations with it that any disturbance of an acute nature is liable to cause evidences of depression and shock.

The Pancreas secretes about 300 c. c. (over 9 ounces) per diem. While it is supposed that this secretion is thrown out only during the process of digestion, it is probable that it is being gotten into shape for ready reference when needed, during the period of apparent repose. The gland in a quiescent stage is pale and rather flabby, but well stimulated into activity by the presence of food needing its services, it becomes firmer, its blood vessels turgescent at first, this giving apparent increase in size, but at the end of its stage of activity, the gland is smaller than at

the beginning, owing to the fact that there is in each acinus an interval granular portion and an external clear zone. The granular portion diminishing pari passu with the secretion of the juice, and at the end of the secretion, the clear zone is found occupying nearly the whole acinus, being encroached upon again by the granular portion during the process of reconstruction or storage.

It is preëminently a secretory gland and, so far as known, no material is excreted with the pancreatic juice, whose retention would be harmful to the organism as a whole, or the gland itself: as is shown by the clear juice, escaped into the peritoneal cavity being absorbed and does not cause peritonitis, and if the duct is completely stopped there is not a cystic formation or inflammation in the gland, but the secretion ceases.

The physiology of the pancreas is shrouded in doubt, because it seems impossible to judge from present data, how important the juice is to complete and perfect digestion. Proteids arrive in the stomach and are attacked immediately by the pepsin, and are in a greater or less measure converted into peptone, the work being greatly assisted by the action of the dilute acid on the connective tissue. After the work has been well gotten under way, and it may be a certain amount of peptone absorbed, the mixture is passed along from the stomach, and the pancreatic juice and bile render the reaction alkaline, precipitate the pepsin and the work of completing the proteid digestion is done normally by the pancreatic juice. It was formerly stated that this was not necessary to the completion of digestion and it is now stated, on the other hand, that cases of severe pancreatic diseases have passed masses of undigested proteid material in the stools.

Secondly, the conjoined action of bile and pancreatic juice upon fats to emulsify and split them up, has been stated to be possible of performance by the bile almost unassisted, but at present it seems that the best opinions concede the dual action necessary. Certain it is that fatty stools have been repeatedly noted in pancreatic disease; yet their non-appearance is no proof that there may not be trouble in the organ or even cancer at its head.

Its third function of converting starch into sugar appears to be one of its most important uses. Saliva has so short a time in

which to act before it is overpowered by the gastric juice, that it would seem that this part of digestion must be entirely done by the pancreatic juice or some other means. And as a matter of fact, diabetes is found to be one of the most constant symptoms of atrophy of the gland.

Thus, out of its three functions the physiologists would have led us to believe that none of them were of actual, vital importance. In connection with its property of converting starch into sugar, experiments done recently by Monsieur Hedon, are of great interest. In brief, his method is this: he cuts down on the pancreas and brings up a portion of it to graft on to the subcutaneous tissues of the anterior abdominal wall, and after this portion becomes well nourished, cuts it free from the parent gland. Then when equilibrium is again established, he extirpates the intra-abdominal relict of the gland and thus, all the pancreatic tissue there is left is extra-abdominal and non-secretory, as its connection with the duct entering the intestine has been severed and the gland is entirely extra-abdominal. The animal lives for a time in comparatively good health. Now, if the extra-abdominal remnant is destroyed, the dog soon shows diabetes and dies. This series of experiments is in direct contradiction to the older experiments of Murk and Klebs, who state that the pancreas may be entirely extirpated without causing diabetes, but if the solar plexus is injured, then diabetes occurs. It would seem that this could scarcely stand in the face of Monsieur Hedon's experiments, on account of the long time between the abdominal operation and the final destruction of the extra-abdominal remnant.

Senn's experiments would also tend to fortify Monsieur Hedon's position, as he comes to the conclusion that complete extirpation of the pancreas is invariably followed by death, but gradual atrophy of the organ from nutritive or degenerative changes in the secreting structure may take place without apparently interfering with health.

The pancreas would seem to occupy a correlative position with the stomach. For so soon as food is taken into the latter organ, the pancreas begins to rapidly pour out its secretion into the intestine, long before any particle of the ingested material can have

passed through the pylorus; and again if vomiting occur the secretion of the pancreatic juice is at once stopped.

Taking into consideration the activity of the gland, the amount and complexity of its secretion, it is truly wonderful if we have no disturbances arising from it which may be termed functional, and if some of our cases which seem to be obscure gastric or intestinal indigestion are not due to *this* cause. If we can come to a clear enough understanding of the functions of the organ, to diagnose any departure from the normal, we may then be in position to treat them successfully and avoid the more serious diseases of the gland, which may be classified as follows: pancreatitis, acute, hemorrhagic and chronic, gangrene, cysts, abscesses and new growths.

The symptoms caused by the first class are not such as are ordinarily produced by acute inflammation in other organs, especially the constitutional. Probably, there is no initial chill and even cases that have terminated fatally have run an afebrile course. The pulse is hurried, perhaps, to one hundred or over. The first symptom may be pain, and this is the one given as most permanent and uniform by all observers. Coming on suddenly, located in the epigastrium, it may be most intense, causing a state simulating collapse and shock from accident. It would seem that the pain would be located anywhere along the region of the pancreas and where the inflammation were most severe, but it appears from the statements of observers, that it is located nearly in the median line midway between the navel and the ensiform cartilage; just about where it would most affect the solar plexus. This pain is described at times as radiating downward and upward even into the shoulders. But I think we may look for its more distinctive character as being well localized in the place stated, or the corresponding place in the back. Along with the pain, or soon after, nausea and vomiting are liable to occur. The nature of the vomit does not appear to be distinctive so far as observed, as the contents of the stomach being expelled, it probably becomes bilious in the majority of cases, though this symptom has led to the error in diagnosis, of looking for obstruction of the bowels; the cases reported do not speak of there having been stercoraceous vomiting.

In the severe cases, a collapsed condition is early present, and may be followed by death, even within the hour of the first symptom, or it may continue for two or three days, terminating in death or recovery. The abdomen is generally distended. The bowels may be constipated or there may be diarrhea. This is more particularly a picture of acute hemorrhagic pancreatitis, but as the patients have usually given history of previous attacks of acute indigestion, with nearly the same train of symptoms, though less severe, it is probable that they have been suffering from attacks of acute pancreatitis through a chronically operating cause, and that in these cases the fatal termination is due to hemorrhage resulting from one of these attacks.

As stated, this class of cases, even the hemorrhagic, are not always fatal, and one of great interest is reported by Osler, where obstruction was diagnosed, patient operated upon, fat necrosis of omentum, and mesentery, and small amount of bloody serum found in the peritoneal cavity, with indurated thick mass at the root of the mesentery. The patient recovered.

In this class of cases, there is, usually, enlargement of the pancreas. The interlobular tissue is infiltrated with blood, as well as the cellular tissue surrounding it. You observe that the pathology makes a very brief report of anything irregular in appearance in the gland substance. This neglect is at present receiving more attention. In a case that gave all the symptoms of acute pancreatitis and terminated fatally, we procured an autopsy and sent the pancreas with portions of other organs to a pathologist in New York, and he reported that he found no evidences of pancreatitis, i. e., no fat necrosis, but that there was a fairly well-marked granular kidney. The urine had shown no albumen nor were there any signs of uremia. But the pancreas was greatly increased in size—perhaps more than twice the normal, and at the head there was a bloody exudate into the subcutaneous tissue. It is due to the pathologist, however, to state that he reported the gland as being in such a state of decomposition as to preclude a careful examination.

Fitz, in his article in Pepper, cites a case of fat necrosis in which no pancreatic trouble could be found, so that here we are again confronted with apparently contradictory evidence need-

ing explanation. This article of Fitz, I would recommend particularly to your attention if you are interested in the subject and have not already read it, as it embodies more progress in the subject than any other article I have seen.

A very interesting and peculiar feature of some of the cases of pancreatitis is the fat necrosis of mesentery, mesocolon and omentum, as well as of the pancreas itself, and in fact, the fat tissue in other parts of the body. This gives an appearance in some places of miliary tubercle, while in others they may have been larger or coalesced even to the size of a hen's egg. This was the condition in one of the cases that came under my observation and in this case there had been a purulent degeneration in the necrosed tissue, giving abscess formations, that were in many places coalesced and invaded the peritoneum and gave rise to the diagnosis of appendicitis, "a belly full of pus,"—operation. It is needless to state that neither appendix nor any quantity of pus were removed but some of these necrotic pieces *were*, and were sent for examination so that we had the satisfaction of a diagnosis ante-mortem. Post-mortem, we found masses of these abscesses in the root of the mesentery and near the pancreas. While such a case might be called suppurated pancreatitis, the condition for which this term is accepted is abscess of the pancreas itself, primarily either multiple, single or coalesced.

With chronic pancreatitis, or what may be called chronic interstitial pancreatitis, the train of symptoms would appear to be different. It is doubtful if it ever gives rise to the active, acute disturbance of the other; it is more of a cirrhosis and gradual destruction of the gland tissue, by the encroachment of connective tissue, and this may, as in cirrhotic liver, give rise to actual increase in size of the gland even though the gland tissue may be diminished. Practically, there is an atrophy of the gland itself, and it is in this class of cases that diabetes is observed.

That ascites, edema of the lower limbs and hemorrhage from the bowels may result from pressure against the mesenteric veins and inferior cava; that there may be diabetes and fatty stools in certain conditions of the pancreas, there is no doubt, but it is questionable how important a rôle they are to play in a diagnosis. When found, the same as undigested masses of mus-

cle-fiber or large amount of tyrosin in the stools, they point to the pancreas being in trouble, but they are not necessarily pathognomonic.

In conclusion, let me state in a word what has been my object in this report. It was not to give a complete description of any one disease or of all the diseases of the pancreas, but to draw your attention to the progress made in the *knowledge* of certain *recognized* diseases of the organ, and to ask you to bear in mind the *possibility* of its being subject to functional disturbances.

LA GRIPPE AND ITS PATHOLOGY.

OLIVER T. OSBORNE, ASST. PROF. MATERIA MEDICA AND THERAPEUTICS, YALE.

A few weeks ago I issued, to the physicians of New Haven and vicinity, blanks with a series of questions concerning this very interesting disease. While I did not receive as large a percentage of returned answers as I had hoped, still the ensemble of the thirty that I did receive cannot but furnish some interesting facts and observations.

First—What shall we call this disease? While very many names have been, from time to time, used to designate this malady, only the two names, "Influenza" and "La Grippe," seem to be prominent enough to require a choice.

The term Influenza is, by some authorities, traced to an English birthplace, with Huxham for its father, but the best authorities, it seems to me, show that it is of Italian origin, and first used in 1733. If the Italian origin of Influenza is accepted it overthrows the argument for the use of that name, "because it is English," which was offered by many of my correspondents.

La Grippe, on the other hand, may be from the French "agripper"—to seize, or from the Polish, "grypka"—hoarse, first used in 1732, and even this name has been Anglicized, or Americanized, into plain "Grip."

The best reason offered by those who prefer the name La Grippe is that the term Influenza has been, and yet is, so frequently applied to a simple condition of profuse coryza, Pharyngitis and Laryngitis, that the real Influenza, which often occurs entirely without catarrhal symptoms, should be separated from the former condition by another distinct name. In fact, to me the term Influenza always carries with it the idea of catarrh, while the word La Grippe leaves no doubt as to the disease intended to be named. The majority of my correspondents prefer the name Influenza, but the majority was not large.

Before taking up the data furnished by the blanks, it may not be uninteresting to refresh our memory concerning the history of this disease.

Some historians believe La Grippe, as we now understand it, was in existence before Christ, even in the time of Hippocrates: but certainly in the latter part of the sixth century an epidemic prevailed which was La Grippe. Several epidemics occurred during the following centuries, but a careful description of this disease did not appear until that by Wilson, of the epidemic of 1510, "which attacked almost every man, woman and child of the British Isles." The first epidemic to cross the Atlantic to America was, probably, that of 1557. "During the last four hundred years there have been about seventy epidemics of La Grippe, one half of which, from their widespread prevalence, deserve to be called pandemic."—(Conklin).

The last epidemic, previous to the one of 1889–90, occurred in 1847.

The course of the latest epidemics was from east to west, most of them originating in Eastern Asia, where the disease is said to be endemic. These epidemics traveled westward across Russia, Europe, the British Isles, over the Atlantic to America, thence over the Pacific to Australia and the East Indies.

The last epidemic, 1889–90, followed this course, the first cases occurring in Bokhara, Central Asia, in May, 1889, says one writer. Another investigator says that this epidemic started in the Kirgheez Steppes, in the autumn of 1889, and spread in all directions, north, south, east and west, along routes of travel and traffic. Dr. Parsons, in his report to the British Medical Association, in July, 1891, writes of this 1889–90 epidemic as follows: "Assuming the epidemic to have started from Russia in October, it took six weeks, or two months, to spread over Europe, and reach North America; rather more than two months to reach the Cape, three months to reach South America, four months to reach India, five months to reach New Zealand and Australia, nine months to reach Iceland, and nearly a year to reach some remote place in Africa and Asia."

During the fall of 1890, La Grippe was reported in a number of places, but the epidemic of 1891, seems to have originated

in New Orleans, and to have spread from that point in all directions.

Etiology—We now naturally come to consider the cause of this most rapid of epidemics. This disease is certainly an infectious nervous fever, as catarrh is certainly not a constant symptom, while more or less severe nervous symptoms are always present. Nothing seems to form a bulwark against it; no age, sex, season or climate is exempt, and one attack does not cause immunity or protection against another. This broad statement of fact can be modified by saying that the germ thrives best in autumn and winter, that young children, at least before the past winter (1894), were but infrequently attacked, and that one attack in a given season seemed to ordinarily protect against a recurrence during that season.

As to the contagiousness, or non-contagiousness of La Grippe, it must be remembered that contagion does not necessarily mean contact, but means that a disease is transmitted from patient to patient by any means, or vehicle, that will carry germs from one person to another. This vehicle may be the air, if that is impregnated with germs, as the air of the house, a public office, or public conveyance, hence the spread of La Grippe is with wonderful rapidity.

That La Grippe is due to a specific germ can scarcely be doubted by any believer in the germ theory of infection diseases. That the specific germ has not yet been positively discovered is a fact, but probably a very small rod-bacillus, discovered by Pfeiffer and Canon, is the true cause of the disease. While the spread of La Grippe is exceedingly rapid, still, as shown by the investigations of the 1889 90 epidemic, it was not more rapid than can be accounted for by the rapidity of travel and transmission of letters. There is no denying the fact that vessels at sea have been attacked by it, showing that the germs can be carried long distances in currents of air. On the other hand repeated investigations have proved that the post-offices in various towns and cities were the places first attacked.

Dr. Clemon, of St. Petersburg, instances a number of cases where La Grippe reached the towns of Central Asia by means of letters; the post-office officials, and the handlers and receivers of

letters being the first attacked, and their physicians being the next affected.

A commission of investigation in England became convinced that La Grippe was contagious.

In America it was the post-office and the ports of New York and Boston which were the first attacked in 1889.

In New Haven, 1889, it was Christmas Eve and Christmas day that showed the first cases, and it is true that cases occurred in all parts of the city almost simultaneously. If La Grippe had reached New Haven at any other season of the year, I do not believe it would have become so rapidly disseminated. But visitors coming from New York and Boston, and all business men whose homes are in New Haven, returning to spend Christmas, the crowded stores, and the crowded public conveyances, were all factors in rapidly spreading a disease so contagious. I also noted at this time that many of the first cases were of visitors, or of men just returned home from out of the city.

At a meeting of the New Haven Medical Association, held in the winter of 1890, after La Grippe had been a few weeks present, one other physician and myself had the temerity to declare that we believed the Grippe to be contagious, and to be spread by contagion, against the opposition of the rest of the members—about thirty being present. I do not think that that gentleman or myself have ever had cause to modify our views. As to the answers to the questions on the blanks, the physicians were about equally divided as to the contagiousness or non-contagiousness of La Grippe.

As to the pathological anatomy of Grippe, there is little other than congestion of mucous membrane; the post-mortem findings are those of the complications which caused the death.

It was interesting to note the answers given to the second question on the blank, viz.. As to the winter which furnished the greatest number of cases of La Grippe. Of course the first winter (1889–90), headed the list, but as to which winter came second and which came third, a great diversity of opinion was shown, showing either that different parts of the same region were variously affected in the different years, or what is more probable that the Grippe, year by year, has gradually diminished, individual observation to the contrary notwithstanding.

It is the almost universal opinion that the gastrointestinal form of La Grippe is the least frequent of the three forms. Most answers placed the catarrhal form as the most frequent, while quite a number of the responders positively declared the nervous variety to lead the list. Eleven physicians found no difference in the ratios of the three forms of La Grippe in the different years, while a number found more of the nervous form in 1894.

Eighteen of the physicians found a difference in the type of the disease in 1894, as contrasted with other years. Outside of the above opinion that it was more nervous, and that it was milder, as far as danger and sharpness were concerned, the other reasons were so manifold and varied that I am constrained to give my own experience, which in many respects agrees with other observers.

I found the Grippe of 1894 less rapid in onset, with less fever, less frequent cough, but when present more persistent, more persistent headache, more general myalgias, more nervous prostration, longer continued anorexia, longer, slower convalescence, more follicular tonsillitis as concomitant, more tendency to congestion and pains in the ears, less nosebleed, more menorrhagias, more frequent, greatly diminished bulk of urine, more tendency to congestion of the kidneys, a tendency to a slow intermittent or malarial type of the fever, a greater tendency to relapses, and fewer lung complications.

The reports show that but few young children under two years of age have been affected, and the opinion is about equally divided as to an increase of La Grippe in such children this last winter. My experience has been in the affirmative, i. e., there were more cases of Grippe in babies this year than formerly, the most important symptom being fever.

The general understanding that there is no pathognomonic sign or symptom of La Grippe is borne out by the testimony received from blanks, but nineteen different symptoms, or conditions, were mentioned, several of which taken together point more or less conclusively to this disease. Fever and prostration out of proportion to the trouble found was frequently mentioned. The backache, the suddenness of the onset, the severe headache,

the soreness and pain of the eyeballs, the injection of the conjunctiva the congestion of the mucous membrane, the brassy cough, the anorexia, the perspiration even with high fever, and the hemorrhagic tendency were all mentioned as important points in making the diagnosis. One physician spoke of the deep-seated pain at the root of the nose, a symptom that I have often noticed this year.

From my experience with this strangest and most bizarre of diseases, I should describe it as ordinarily, especially in epidemic years, occurring with sudden onset, but this year a large number of cases have shown a slow developing stage of several days duration, marked by anorexia, malaise and dull myalgias. There may, or may not be fever, (absence of fever occurring most frequently in the nervous form of the disease), and with the fever the pulse is generally not markedly rapid, and is soft, while the skin is generally perspiring.

Generally there is severe cephalalgia, (this year very persistent and difficult to cure.) This headache is general, may be occipital, especially if the nervous symptoms predominate. There is generally a soreness of the eyeballs, and often a deep-seated pain at the root of the nose. There is almost invariably lumbar backache, partly myalgic, but largely due to congestion of the kidneys, I believe. Almost invariably early in La Grippe cases the urine is greatly diminished in quantity, and this even where there is but little fever. I have often found albumen in small amount; and also frequently smoky urines, with enormous deposit of urates and phosphates.

I believe that had every case of La Grippe been examined for albumen and blood in the urine, the result would astonish us, as to the frequency of such a symptom, over half the physicians reporting have noted albumen or blood in the urine of La Grippe patients. A large number have noted the diminished bulk of the urine, and also the relation of the intensity of the backache to the diminished quantity of urine.

There is rarely diarrhea or vomiting, but often there is epigastric pain. On the other hand in the gastrointestinal variety, the diarrhea is sudden and often severe, with or without vomiting.

The mucous membranes of all of the upper air passages are generally involved, giving rhinitis, pharyngitis, laryngitis and tracheitis. Bronchitis may readily follow. Three fourths of the reporters have noted lobar pneumonia following La Grippe, and more than that number bronchopneumonia.

Tuberculosis of the lungs was noted to follow, or to be superinduced by Grippe, but rarely, and the families, in these cases, were not necessarily tuberculous. Hemoptysis from La Grippe was rarely seen, though it did occasionally occur, but I did not obtain any satisfactory statistics as to the prognosis of such hemorrhage. It certainly is an occurrence that should cause considerable future anxiety, and yet I have known cases to occur during an attack of La Grippe, and the lungs to remain sound, and with no indication of tuberculosis for one and two years, i. e., to the present time.

Epistaxis is generally considered a not frequent symptom, although it often occurs. Streaks, or tinges, of blood in the mucus of the nostrils, throat or larynx are of frequent occurrence, due to the condition of the blood-vessels.

Follicular tonsillitis, or pharyngitis, and rarely patches of membrane have been seen by most physicians in La Grippe. It certainly is a not infrequent complication, and yet the associated symptoms partake more of Grippe than of those ordinarily found with such inflammations, when they are primary. Much to my surprise, the majority of physicians reporting, have but seldom found severe earache occurring with La Grippe. I have found it, during this last winter, of frequent occurrence. Middle ear inflammation was noted, but is reported of infrequent occurrence. The eyes are reported by the majority as showing inflammation, generally a conjunctivitis, although simple serous iritis has several times been noted. Sleeplessness was, of course, reported by the majority as a frequent symptom, but, to my surprise, quite a number had not noticed this condition.

More severe nervous phenomena, as hypochondriasis, hysteria or melancholia, have been seen by the majority reporting. I believe the first two are of frequent occurrence, and that the last may occur, and does occur.

Joint inflammations are an acknowledged complication, and

have been noted by many of the reporters, but the majority have not seen this condition.

Quite a number of those reporting have seen simple urethritis, or cystitis, occur with La Grippe, and while it must always be of doubtful probability as to this being its etiology, still, from the pathology of the disease, there is no reason why it could not occur as well as congestions of other mucous membranes.

I have in two instances seen simple urethritis occur with La Grippe. I was surprised to find so many reporting that they had not seen profuse menstruation occur with or after this disease, for to me it has been a condition frequently found.

A few have seen abortion brought about by Grippe, and I saw one labor precipitated by it.

One third of those reporting have seen eruptions of the skin occur in La Grippe, mostly erythematous, urticaria-like, or herpetic. A point well taken by several of the reporters is, that much of this eruption may be due to the medication.

This year, especially, Grippe has shown to me a malarial type, and a large majority of those reporting have seen it simulate malaria, with chill, fever and sweat. I have found these chills troublesomely irregular.

Pathology—I believe the pathology of this disease has to do with the vasomotor system, i. e., that this disease is a vasomotor depressant.

The small blood-vessels all over the body dilate, producing capillary congestion of all the mucous membranes, hence the rhinitis, pharyngitis, laryngitis, and tracheitis. If the attack is severe and the lungs are involved, we have the "Grippe lung," i. e., irregular dullness, perhaps general dullness, no sharply defined flatness, no auscultatory signs of lobar pneumonia, but with pneumonic expectoration and low fever.

The characteristic, harsh, metallic cough of La Grippe is produced by the congestion of the larynx, a capillary congestion with swelling of the mucous membrane. This swelling irritates the laryngeal nerves, and we have the loud expiratory, dry cough.

The same swelling, due to the dilatation of the blood-vessels, occurs in the trachea and causes the peculiar pain and oppressed

feeling under the sternum. The sneezing is due to the great congestion of the mucous membrane of the nose, caused by the dilated blood-vessels swelling the membrane and thus causing a tickling and irritation of the nerves.

This dilatation of the capillaries shows itself again in the conjunctiva, either as an injection, or a serous conjunctivitis and also causes the painful eye-balls. In the ear we have the frequent pain and congestion of the drum, which generally aborts, especially if treated, but which may go on to serous tympanitis, or may cause the very painful Grippe, hemorrhagic bleb, or vesicle on the drum.

The kidney vessels dilate, hence the diminished urine, and perhaps blood and albumen, and hence also, the intense backache. If this backache is not due to kidney congestion, why is it *always* a myalgia (?) of the lumbar region?

Again, the dilation of the blood-vessels of the mucous membranes gives the tendency to epistaxis, to spitting of blood, and even, in a few cases, to hemoptysis. Also, it accounts for the profuse menorrhagias, and in a few cases, gives the cause for abortion.

With the high fever of the beginning of La Grippe, the skin is moist. Why? Because the vessels of the skin are dilated, and hence the sweating. The pulse does not keep pace with the fever in La Grippe. Why? Because ordinarily, fever, high temperature, is a stimulant to the heart, but in Grippe the dilated blood-vessels of the surface of the body, with the sweating, cause such rapid loss of heat that the heart is not stimulated, and, therefore, is much slower than the temperature would indicate.

This dilatation of the peripheral blood-vessels and consequent sweating is the cause of the short-lived, and often suddenly dropping, fever. Again the generally dilated vessels cause a lowering of the blood-pressure and a consequent weakening of the heart.

With this pathology of the disease, producing heart-weakness, and dilated blood-vessels, and profuse sweating, the careless use of acetanilid, antipyrin, and even phenacetin, all operating exactly in the same way, produced the very serious consequences

so many times seen from their use. In fact, many deaths were undoubtedly caused by these drugs. The cephalalgia is undoubtedly due to the dilated blood-vessels of the meninges of the brain, and quinine in the early stages of La Grippe, cannot but tend to increase the headache. Also, if there is a tendency to functional brain trouble, quinine will increase that tendency, to say nothing of its increasing the tendency to middle-ear congestion, as it dilates all of the blood-vessels of the brain.

This "vasomotor ataxia" (Cohen's suggestion for vasomotor disturbance) gives the cause of the frequent hot flashes, or waves, which pass over the body in La Grippe: or, on the other hand, to the frequent rigors which almost cause the patient to shiver, depending upon whether the surface vessels suddenly dilate, or suddenly contract.

The form which the Grippe will take in any given case depends upon which system is the most susceptible to the vasomotor disturbances, viz., the respiratory system, the alimentary system, or the nervous system.

In the New England region the respiratory system is the most susceptible, and consequently the majority of cases are catarrhal. As we are largely of nervous temperament we also have a large number of cases showing the nervous form of the disease.

In Summer, or in warm climates, I should expect a greater number of gastro-intestinal cases.

Now, what is the condition in the pure nervous form of this disease?

Taking the severest cases, which are fortunately rare, where the patient suddenly falls to the ground, the condition is one of shock, i. e., the impression of the poison on the nervous center and the vasomotor center is so severe as to cause a sudden dilatation of the blood-vessels, and probably especially of the abdominal viscera. The result is sudden anemia of the brain, consequent falling to the ground, and we find a case of shock and collapse to treat, i. e., surface cool and clammy, pulse weak and thready. We have ranging up to this severest of nervous onsets, all degrees of dizziness, weakness, nervous prostration, and exhaustion.

The after condition is a complete lack of nerve-tone, perhaps

a neurasthenia, a hypochondriasis or even a melancholia. All degrees of admixture of nervous and catarrhal forms of La Grippe take place, giving the manifold symptoms as we see them.

The sleeplessness of Grippe is caused by the dilated blood-vessels of the brain having temporarily lost their power to contract at night, and give the necessary anemia for sleep.

This lack of vasomotor tone causes the prolonged prostration which follows this disease, in which every muscular or mental effort causes a feeling of exhaustion, because the necessary changes of the blood-supply to the various active organs does not, and cannot, normally take place. Consequently, everything is done with an effort, until such a time as complete recovery has occurred. Also from this condition of the vascular system, all complications, and even diseases occurring at some later time, assume an asthenic type.

As to the prognosis of La Grippe, there is probably considerable difference of opinion. Grippe itself rarely, if ever, causes death, but the complications which occur in this disease, I believe, are more serious than if they were the primary affection, and this is especially true of pneumonia.

Here again comes in the pathology, for a pneumonia starting out with a weak heart, relaxed blood-vessels and low fever is of much worse prognosis than the ordinary type.

Many old people, many tubercular patients, many sufferers from chronic kidney disease, and many otherwise weakened individuals have died from, or on account of, La Grippe.

I believe that severe attacks of this disease have more or less permanently affected a great many people. It was a severe shock to the nervous and vascular systems, from which recovery was very slow, often taking months, and many people can honestly say to-day that they have never felt as well since having the Grippe.

The power of endurance, the power to withstand disease, the power to surmount trouble, business set-backs, to stand extremes of cold, etc., seems to be below par, below the average.

Acute diseases are more asthenic, cases are slower, and we, as physicians, have more difficulty in getting our patients to say they are "well." So that be the disease what it may, and the

actual death percentage no greater than usual, perhaps, still it seems to me that we have had much more difficulty in thoroughly and absolutely curing our patients since the Grippe, than before.

Now, what shall be said of treatment? The drugs most used are phenacetin, quinine, acetanilid, and morphine, or opium in some form.

The coal-tar products, overlooking the danger to the heart, will undoubtedly give relief to the headache and backache, by dilating regularly, and more permanently, the blood-vessels of the surface of the body, and thus relieving the congested inner organs.

Phenacetin is the safest of these drugs, and, especially if followed by, or given with, camphor, or caffeine, or alcohol in some form, to protect the heart, is often undoubted good treatment in the first stage. Morphine will surely often do good, but while physiologically correct as a heart stimulant, and an analgesic, and in ordinary doses as not tending to depress the circulation, still we must not forget that it is often bad treatment for acute inflammation, or congestion of the brain, and I believe the meninges to be in a condition of congestion in La Grippe.

While I believe that generally phenacetin, protecting the heart by some of the heart stimulants mentioned, is the best treatment during the first high fever of ordinary La Grippe, I think that ergot is good treatment later, and, as a contractor of blood-vessels, is physiologically correct. I have seen a good many of the Grippe headaches, during the last winter, yield to ergot. To cause sleep potassium bromide, contracting the blood-vessels as we believe, is certainly indicated. Hot fomentation for the lumbar pain seems to have done the most good, and later, massage for the myalgias is of benefit.

Quinine, I believe, ought not to be given, except as a tonic during convalescence. Atropia might be used as a vasomotor stimulant. Alcohol in some form but in small doses is almost always indicated.

LA GRIPPE AND ITS RELATION TO OTHER DISEASES.

C. G. RANKIN, M.D., GLASTONBURY.*

In responding to the invitation to write a paper on the subject—"La Grippe and its Relation to other Diseases," I cannot hope to bring anything new to your attention or to add anything to the mass of literature already written upon this subject. If, however, I am able to write something which may lead others to present their views, the object of this paper will have been fulfilled.

The most comprehensive definition of La Grippe that has come under my notice is that of Prof. Wilson, of Philadelphia,—"A continued fever occurring in widely extended epidemics and due to a specific cause; it is characterized by early catarrh of the respiratory mucous membrane, and in many cases, also of the digestive tract; by quickly oncoming debility out of proportion to the intensity of the fever and catarrhal processes and by nervous symptoms."

Passing over the history of the various epidemics, which is undoubtedly more or less familiar to you all, let us look at the Etiology.

There seem to be no predisposing causes; indeed, during an epidemic the great majority are more or less affected. La Grippe appears at all seasons and at all latitudes and seems to be influenced by no atmospheric conditions. Writers at all times have attempted to establish certain relations between this disease and certain atmospheric conditions, as low temperature and sudden changes, but there seems to be no evidence to sustain this view. It occurs with equal severity during the hot, dry season of India as in the cold season of Siberia. The epidemics most often spread from the north and east to the south and west, sometimes traveling with such rapidity as to traverse all Europe in five or six weeks, and again advancing so

*Read before the Hartford County Medical Association.

slowly as to be two years in covering the same territory. Country districts are almost always attacked later than the cities. Prevailing local winds seem to have no effect upon the spread of the disease. That it is contagious there seems to be no doubt, but the theory of the contagion will not account for its spread: for instance, keepers of light-ships and crews of cruising ships have been prostrated during an epidemic without having touched the land or even spoken to a passing ship for weeks.

There is known to be an incubation period of from a few hours to several days without subjective symptoms. Those most in the open air are usually the earliest attacked; inmates of prisons and reformatories are often exempt.

During the last few years bacteriologists have turned their attention to this subject and have succeeded in isolating a bacillus, resembling in some respects the Pneumococcus. Pfeiffer describes a specific bacillus found in the bronchial secretion of uncomplicated La Grippe. By careful control these were not found in Pneumonia, Bronchitis, Bronchial catarrh, etc. They can be cultivated but inoculations with these cultures are without effect. The Bacilli are small, encapsuled, and are usually found in pairs or rows of six or eight.

Werchelbaum agrees essentially with Pfeiffer. Later Pfeiffer and Beck found the specific Bacilli in the pus expressed from the small bronchi from a subject dead of Pneumonia complicating La Grippe.

Canon found the Specific Bacilli in the blood of twenty-four consecutive cases of La Grippe. The blood of rabbits inoculated with the blood of a child having La Grippe showed specific Bacilli and also when inoculated with the sputum.

Other observers, too numerous to mention in this paper, have reported much the same thing. However, none, so far as I am able to learn, claim that this specific Bacillus is the cause of the attacks. Whatever the cause is, it must develop outside of the body as well as within, for personal contagion and living organic germs can in no way account for the rapid spread of the disease. The theory of miasmatic infection seems to be the most tenable,

and the fact that the mucous membrane of the respiratory tract is first affected, would go to show that the poison found entrance to the system through the air-passages.

Symptoms.—La Grippe presents, in individual cases, a great variety of symptoms, varying from a slight indisposition in some, to the gravest illness in others, often ending in death. Usually, the attacks are sudden without premonitory symptoms. First there is a feeling of coldness amounting, in some cases, to a decided chill, accompanied by a sense of depression and a dull pain in the head, back, and limbs. This stage soon gives place to a steady grade of fever characterized by heat and dryness of the skin, redness of the face, increased frequency of the pulse, inactivity of the bowels, diminished quantity of urine but of deeper color, severe pain in the head, especially in the temporal and frontal region. About twenty-four hours after the commencement of the attack the mucous membrane of the respiratory tract becomes congested, causing copious discharge from the nostrils, soreness of the throat, some hoarseness and a distinct sense of oppression in the chest, accompanied by cough and great weakness.

The temperature varies from 101° to 104° F., and the pulse from normal to 120 or higher. If uninfluenced by treatment, the patient continues in this condition from three to five days with gradual subsidence of the symptoms by the seventh or ninth day, terminating, usually, with a profuse sweat or temporary diarrhea.

Our knowledge of the Pathology of La Grippe is very imperfect. The severity of the symptoms and their similarity as occurring in the various epidemics that have occurred during several centuries and under very different degrees of civilization, point, it seems, to the specific and definite character of the cause which gives rise to the disease.

Very little light is thrown on the subject by the changes found after death. Uncomplicated La Grippe is rarely fatal: the essential lesions are congestion and catarrhal swelling of the mucous membrane of the upper air-passages, which may be restricted to the trachea and bronchial tubes, or extend to the finest twigs of

the lungs; more or less congestion of the alimentary tract is also found.

The diagnosis is usually easy. The great numbers attacked, the nervous symptoms and the rapidly developing debility distinguish it from all other epidemics. Occasionally cases are met with which simulate enteric fever, but the course of the disease quickly clears up the doubt.

As to Prognosis, the very young bear it badly and the old still more badly. A great deal seems to depend on the character of the epidemic; though as we said above, uncomplicated cases are not often fatal.

As to Treatment, most everything has been tried but without finding any specific. During the epidemic of 1889 and 1890, the coal-tar preparations were used where attainable almost to the exclusion of everything else, but the pendulum has swung back, and during the more recent epidemics they have been used much less freely, for they were found to be too depressing, and while they might cut short the attack, the convalescence was apt to be much prolonged.

My own treatment has been somewhat as follows: If called early, when the pain is severe, I give a tablet containing $2\frac{1}{2}$ grains of Phenacetin, 1 grain of Monobromate of Camphor and $\frac{1}{2}$ grain of Caffeine. I direct these to be given for six or eight hours, not longer—leaving four to eight tablets. I also give quinine in moderate doses, to be taken either with or between the tablets. With this combination I have never had excessive sweating or any depression which I thought due to the Phenacetin. In addition I usually leave a cathartic especially calculated to act on the liver. The quinine is continued throughout the attack, and on the second day, if necessary, I give something to stimulate the kidneys.

In cases, particularly Rheumatic, I have frequently given the salicylate of Sodium with good effect. For the hard dry cough that is often so distressing, I have found nothing better than a dose or two of Dover's powder. Later, when the secretion is frequently thick and tough, I give ammonium carbonate, or chloride, combined with some mild expectorant syrup.

Complications and Sequels.—The most frequent complications are inflammatory diseases of the lungs. The great hyperemia and bronchitis cannot be considered a complication but as an essential feature of certain severer forms of the disease: but Capillary Bronchitis and Pneumonia occur as complications.

Owing to the masking of the physical signs by the already existing edema, it is often difficult to detect at first the occurrence of capillary bronchitis. This complication is attended by increased dyspnea and greater prostration, with crepitant and subcrepitant râles without signs of consolidation as in Pneumonia.

Catarrhal Pneumonia is a much more frequent complication of La Grippe than Lobar Pneumonia. It comes on with a gradual intensification of the bronchial symptoms; usually without a chill; the respirations but little increased in frequency and none of the characteristic sputa.

Render reported several cases of Pneumonia that began with a distinct hemorrhage, for which no lung lesion could be found. Collapse of the lungs often follows in the aged and debilitated.

Pleurisy is rare except where there is inflammation of the lung. Troublesome Laryngitis and Chronic Bronchitis often follow an attack. Frequently the inflammation extends through the Eustachian tube to the ear where a subacute Otitis is the most frequent result, the disease proving fatal in many cases through extension to the meninges of the brain.

Phthisis may develop in consequence of an attack of La Grippe, but if Phthisis is already established, it is apt to run a more rapidly fatal course. Neuralgias are the most frequent sequels; the trigeminal, intercostal and sciatic being the most frequent nerves affected and in the order named.

Neuritis, especially of the cranial nerves is a very common sequel as is also meningitis and cerebritis. Curtain, of Philadelphia, even goes so far as to say that more deaths occur from meningitis than from heart-failure during the course of an epidemic.

The most common eye troubles manifested during convalescence from La Grippe are conjunctivitis, corneal ulceration and asthenopia.

Persons subject to chronic nephritis are liable to the more severe forms of the disease, and fatal termination of such cases is, by no means, rare.

In cases of diabetes attacked by La Grippe, the sugar usually disappears from the urine but the anorexia and emaciation continue.

A certain irregular Rheumatic condition is frequently seen after an epidemic, often attacking one or more of the small joints.

Such, Gentlemen, is a very brief account of one of our most important epidemic diseases.

SOME NEW REMEDIES USED IN DERMATOLOGY.

HENRY FLEISCHNER, M.D., NEW HAVEN.

It is the object of this brief paper to discuss very concisely some remedies which are not, as yet, so universally employed as to be thoroughly understood, and whose merits are a proper subject for debate. It has been my advantage to have had numerous cases where their employment has seemed rational, and having made a free use of this privilege and carefully noted the obtained results, I am in the position of being able to speak with some authority on my subject.

The substances which I desire to bring to your notice are: Aristol, Dermatol, Eurofen, Trilanin and Losofan.

Aristol, or Dithymoldiiodide contains 46% free Iodine, is an amorphous powder, insoluble in water or glycerine, slightly soluble in alcohol, readily so in ether, chloroform, collodion, traumaticin and oil. Its properties are destroyed by light. It has been on therapeutic trial for the past three years, for the treatment of psoriasis, erysipelas, hyperidrosis, eczema, acne, rosacea, vesicular and pustular diseases generally, and most particularly in the ulcerative diseases, such as lupus, epithelioma, and the late destructive syphilomata.

This is a large variety of dissimilar diseases, and the rose-colored reports of the efficacy of this substance in their treatment must be proven to be deserved ere they can be endorsed.

Theoretically, a substance which is useful in a primary lesion is indicated in the analogous secondary lesion and entirely out of place in the secondary lesion, having a pathological basis opposed to the primary lesion in which it is applicable. Thus a macule and a stain will respond to the same treatment. So will a papule and an infiltration, a vesicle and a scale or a pustule and an ulcer.

It is a matter of experience, however, that skin applications conform in practice less to theory and rationalism than any other remedial measures.

In psoriasis I have used Aristol on the body with hardly any results: on the face with less than can be obtained from NH_4 Hg. and having tried it thoroughly for this disease I am ready to discard it. In erysipelas I have failed to see it limit the spread of the disease, either in depth or surface, and while it does, in mild cases, act as a sedative, it shows no point of advantage over starch or other indifferent substances. In hyperidrosis and bromidrosis it is not the peer of Salol or its synergists. It is not of great value in acne, and of none in rosacea, excepting that when these diseases are pronouncedly pustular, it will limit the suppurative process and hasten good results in this way. As to eczema, I have seen this in the erythematous form. It is useless in the vesicular, it is of some value, but, being a stimulant, it must be diluted to do no harm. But this dilution must be very great, so that if from the preparation used any good results are observed, it becomes pertinent to inquire whether the excepient has not been more efficacious than the base. In the purely papular form it yields the palm to tar; what is said of it in psoriasis can be said of it in squamous eczema, but in pustular eczema it finds a useful, a remarkably useful place. Of all the diseases hitherto mentioned, pustular eczema is the one where aristol does real good, more good, indeed, than any other known remedy. But it is not on account of its great value in this disease that aristol deserves its greatest praise. This it demands for the wonderful effect it has on ulcerating surfaces, and its almost specific action on the destructive syphilides. In lupus and epithelioma, it requires to be used with very little dilution. In syphilis in about 10% strength it approaches closely to an ideal remedy. But no wonders are to be expected from it, if used early in the disease on the initial lesion, for instance, or on the mucous or sero mucous patches—conditions that preclude treatment from their very nature. But, when there is dialysis of tissue, due to breaking down of new form tissue, particularly of the granulous variety, as in the tubercular and open gummata, or in ulcers of very late or transmitted lues, then aristol exerts a most beneficent action and ensures to it a permanent place in our armamentarium. It acts as a pronounced and instant sedative and, in many cases, this is important, for skin syphilis is

oftentimes a most painful disease. It diminishes the secretion of the thick gelatinous pus, limits at once the extension of the breaking down process and promotes the formation of healthy granulations and cicatrisation. It is of common observance that Keloid takes the place of these ulcerations. Such a sequel is not met with after treatment with aristol. In the purely surgical practice I have not had enough experience to formulate an opinion of any worth, but where I have used it for purposes where CHS_3 seemed to be indicated, I have not seen that it has any advantage over the named drug. It does not seem to have any very antimycotic action. In sycosis vera and impetigo I have not had any opportunity of testing it, but should consider it clearly indicated in these diseases. As to its mode of administration I will say that an ointment stronger than 10% is likely to be irritating; half that strength is most acceptable and sufficiently strong for all purposes. In powder it is best used somewhat stronger, and is best mixed up with magnesium, chalk, or some like substance; never with starch. Aristol must be rubbed up with some bland oil before the excipient of the ointment is incorporated with it, otherwise it will become gritty.

Dermatol is a Subgallate of Bismuth, a yellow granular powder of which much has been written, and which has been largely extolled. My experience with it leads me to say this: There are cases of vesicular eczema and herpetic diseases where it acts like a charm. There are few such cases. In the majority of them it is of no earthly use, and it is of use only when there is much secretion which it dries up rapidly. No selection of cases can be made with any approach to certainty of prediction as to whether it will prove useful or a waste of treatment. It is more likely to do good used as a powder than as an ointment. It may be mixed with starch. It will not cake, is non-toxic and if good for little else it makes a clean dressing. Where it does good, it forms with the secretions of the affected parts a crust beneath which healing takes place. In one class of cases it is a valuable remedy, worthy of constant trial and not likely to be disappointing in its effect. I refer to indolent ulcers of the old and varicose. Rarely is there found such an ulcer without eczema, and rarely is one found that yields to treatment in a

manner to cause the physician to feel proud, or the patient gratified. I recommend the use of Dermatol in these cases and feel sure that it will be endorsed. It can be used full strength, or mixed with starch, ten to ninety. As an ointment it ought always to be ten per cent.

Eurofen is a yellow powder containing thirty parts of pure Iodine. It is insoluble in water or glycerine, readily so in ether, $CH Cl_3$ collodion, traumaticine and is miscible with oil. It is in use for about a year.

It is of peculiar therapeutic interest. Chemically it closely resembles Aristol, but it has a narrower range of medicinal applicability, is most decided in its action, and is in very little use outside its proper sphere. It is preëminently an antisyphilitic for all stages of the disease.

Now, the proper differentiation of venereal ulcer and syphilis is not yet common medical property, and the cautery, both chemical and igneous, is still rampant, and neither for the venereal ulcer nor for syphilis will the cautery, with all its cruelty, do what this mildest of applications will do. It is a sedative and this is a worthy trait, (for let it never be forgotten that syphilis is not a painless disease.) It is a protective and is so unfailing that it deserves to be called a specific. In the late lesions requiring local treatment I remember when citrin ointment was the classical remedy. This was followed by the ointment of the oxide, sulphate and iodide, of Mercury. The first was a harsh remedy, the others were dirty if nothing more. All of them were distinctly unreliable. Eurofen is pleasant and I have never been disappointed with its effects. Under its use large serpiginous syphilodermatoses with extensive solution of continuity and offensive secretion would rapidly dry up and undergo quick cicatrisation. While Aristol is very useful in such cases it cannot be so implicitly depended upon and is not so rapid in its action as is Eurofen. It is, moreover, not as applicable in diseases of cavities. Eurofen may be used in ozena, laryngeal, pharyngeal, buccal and oral syphilis It will melt down condylomata and is sufficient in anal and rectal lesions. It exerts, morever, a decided action on periosteal and osteal syphilis, and causes the disappearances of nodes and gummata if injected

subcutaneously over their site. It may be given internally, and thus administered is of value to abate remote, yes, even visceral and neurotic, lesions.

This is expressing strong commendation of this substance, but I think it is well deserved. As to the work of administration, for internal use 0.1 in oil t.i.d. is a proper dose, for subcutaneous use in the same proportion and manner. For an ointment it is not adapted, but may be used as a traumaticine or bassorin paste. It should be used liberally, never less than in the proportion of one to ten, but 5% is better, and when expense is no objection it may be used undiluted. It mixes well with aristol, and the compound is an advantageous mixture. It should never be mixed with starchy substances.

Trilanin is a sulphur cholestorate resulting from the chemical union of three parts of sulphur, with ninety-seven parts lanolin. It is not a simple mechanical mixture, and hence it can not be made extemporaneously. It is a brownish ointment mass, disagreeable to sight, touch and smell. It is recommended in eczemas. It should never be tried in this disease; it is harmful. It is of some use in diseases of the skin when there is sluggish peripheral circulation. Thus in seborrhea, acne, even in rosacea, surely in simple acne and in furunculosis, it is an efficient remedy. It is an obnoxious one, and only for the reason that it does in some cases of the mentioned disease exert a better effect than the older combination, does it deserve our attention. I have prescribed it and found patients that were charmed with it. There is no disputing about tastes; then there were others who declared emphatically, they would rather keep their disease than be cured by this remedy.

Losofan is the last, the most recent of these drugs. It is a teriodide of cresol, soluble in ether, chloroform and heated oil. It contains 80% Iodine. Its merit has not yet been proven. Certainly in eczema it is an irritant and in the papular and pustular forms of this disease it does not seem to be better than tar, and is more objectionable than the more elegant tarry applications; hence, it is excluded in the treatment of this disease. It does not relieve itching and this is against its employment. It is recommended as an antimycotic and I have used it extensively

in the parasitic affections with the following results: It cures scabies, but so does sulphur. It produces no dermatitis, but neither does sulphur, except on very delicate skin and a bland inunction readily overcomes that. It takes longer to produce a cure, hence I prefer sulphur. For head and pubic lice it is no better, and less cleanly than bichloride solutions; hence it will not displace this clean and efficient mode of treatment. I have used it in Tricophytosis of head, beard and body. It is good for these cases, particularly good for the beard, less so for the body, and least for the head; still, I consider it good for all three. But in one case of true sycosis, where I had tried it, it failed utterly—not to my disappointment. In favus, too, it is good but no better than other remedies. Where it is best is in Chromophytosis, often a most intractable disease. Here I have seen it do better than anything else that had been tried. Altogether, losofan is worthy of continued trial, particulary in the vegetable parasitic diseases, and may prove itself worthy of a permanent therapeutic position. It should be prescribed as an ointment from two to, at the most, five per cent. strength.

All these substances have two objectionable features in common. One is their expense. This, however, is gradually being reduced. Eurofen is now sold at $1.80 per ounce. The other objection is that they are patented articles. This may seem lamentable from a purely medico ethical standpoint, but "what are you going to do about it?" These substances were discovered by technical chemists in the employment of manufacturing firms, and these business men have placed this compound at the disposal of medical men. They have been tested therapeutically and proven to be of value. Can we ignore them on the plea that being the exclusive property of their rightful owners, they have for mercenary reasons, put a heavy price on them, and have protected themselves by legal means against any opposition to their stock in trade?

I think we may regret this condition. We have no right to condemn people outside of our profession. Finding the substances good as remedies we ought certainly to use them.

THE MICROSCOPE IN DISEASES OF THE SKIN.

R. A. M^cDONNELL, M.D., NEW HAVEN.

There are abundant illustrations of the principle that men usually want most that which is hardest to get, but in no department does this feature of human nature hold more prominently forth than in the domain of medicine. For instance, calculate the dismal hours spent each year by medical men in fruitless endeavors to grasp the distinction between crepitant and subcrepitant râles, or imagine the wear and tear on valuable gray matter involved in an explanation of the phenomena of the menopause, and then, by way of contrast, consider how few medical men, how *very* few, ever evince the slightest interest in that highly important, wondrously constituted, but too easily accessible organ, the human skin!

There have lived, however, from time to time, some few men, less ambitious than their fellows, who were content not to meddle with things internal, but simply to try, in an humble way, to contribute to the sum of man's happiness by keeping his skin in good order. Of late years these workers have been busy making discoveries, particularly along the lines of pathology and etiology, and it is my purpose in this paper, first, to show how the microscope has been concerned in the evolution of ancient into modern dermatology; second, to point out lines along which progress may be expected, and finally, to suggest how this instrument may really be a time-saver to the busy practitioner, in certain puzzling skin affections.

The pathology of the ancient Latin and Greek dermatologists was striking and picturesque, but decidedly at variance with our present views. For instance, one very noticeable tendency of modern writers is the inclination to refer most cutaneous diseases to local causes, whereas, it seems almost never to have occurred to the ancients that the skin might be diseased by itself, without reference to the general organism.

For example, let me quote from Diodorus Siculus, an author of the time of Cæsar Augustus, the following highly imagina-

tive conception of Phthiriasis Corporis, now universally recognized as a most purely local skin disease.

Writing of a people of Ethiopia, he says: "They are of an active disposition, but rarely live longer than 40 years. Fearful and astonishing is the manner of their death. For as age advances, there arise on their bodies winged beasts of different size and shape, but all horrible. Originating in the belly, they quickly spread over the whole body. The victim at first feels a slight itching. As soon as these animals, which are at first under the skin, reach the surface, there escapes a great quantity of thin, fœtid fluid, and as the victim tears himself more and more with his nails, at length death relieves him of his sufferings."

Plutarch tells of the Dictator Sulla, that "his body was entirely converted into lice, and although many persons were busy day and night removing them, yet they could not take away as many as were produced, so that his clothing, bath utensils, food and wash-basins were filled with them. And although he bathed often by day, yet this did no good, for his body changed so rapidly into lice that every cleansing simply made room for more."

This idea of the origin of lice somewhere within the body, and their gradual progress to the surface, was commonly entertained up to about the middle of the present century, when a magnifying glass revealed the fact that each pediculus was provided with air-breathing apparatus; and further study of the life-history of the insect, taught that it could not possibly subsist without air.

The following is a relic of the old pathology of humors, as applied to the common summer eruption called Prickly Heat. We now know this to be a simple inflammation of the sweat ducts, and consequent retention of sweat. But Willan, the father of English Dermatology, writing in 1806, says: The Prickly Heat is, in general, considered as a salutary eruption, whence we are cautioned not to repel it from the skin by cold or other external applications. A vivid eruption of the Prickly Heat is a proof that the person affected with it is in a good state of health, although its absence does not always indicate the contrary. If it

suddenly disappears, a temporary stimulus applied to the stomach, as by spirits, tea, or other warm liquids, has the power of restoring the eruption. Where people live heated by intemperance, or have a serpiginous humour in their habit, it fixes on the surface of the body in troublesome Ringworms.

The same writer asks us to believe the following about Eczema and Pruritus Ani: "Prurigo Podicis, an itching affection of the anus, may be considered as frequently a preventive of other diseases; a gentleman 68 years of age, who had long labored under a disorder of the chest, attended with a weak and intermittent pulse, was perfectly relieved from these symptoms by the Prurigo Podicis. Vertigo, apoplexy and gout also yield to this Prurigo. A patient affected with it imprudently attempted to allay the troublesome sensation of itching, by a strong saturnine solution; and after using this application for a few days, he suddenly expired in his chair."

Two more quotations, illustrating this omnipresent idea of the central origin of skin troubles will be cited, though instances might be collected ad libitum.

In Shattuck's Prize Essays, Dr. Parsons, writing as late as 1839, says: "The sudden repulsion of a cutaneous disorder ordinarily produces derangement of the stomach, or of the mucous membrane of the lungs. The bladder may, in the form of vesical catarrh, assume the disease when driven from the skin, and the stomach and lungs thereby escape. In respect to those cutaneous diseases that are metastatic, whether so in their origin, as in critical eruptions, abscesses, ulcers, etc., or are likely to become so from their long, and consequently habitual influence upon the constitution, as chronic ulcers, carbuncles, etc., they are salutary in their effects, are real prophylactics, and to be treated with respect: are not to be attacked in front and driven in upon the central organs, but are to be approached through the medium of the circulation, or through other sympathies. When these affections, or those chronic eruptions of local origin, that have by their age become associated with the animal economy, as long protracted itch, etc., are suddenly repelled by accident or injudicious treatment, and internal disorder ensues, a substitute is to be made in the form of blisters

or issues, proportioned in magnitude to the first affection, and to the dangers it threatens within."

Paulus Aegincta says of Psoriasis: "This disorder is characterized by a roughness of the surface, with itching, and a deliquescence of the body, which originates from a melancholic humour." This is about as good a statement of the etiology as many more modern writers have made.

In general, then, it may be said that up to about 1830, all skin diseases, without exception, were looked upon as external manifestations of internal trouble. About this time, however, Bassi and Balamo began a series of investigations which enabled them, in 1835, to announce that they had discovered the cause of muscardine, a prevalent disease of silkworms, to be a certain vegetable fungus, called Botrytis. Remak, two years later, suggested that certain fungi which were to be seen in the crusts of Favus might be the cause of that disease, but it remained for Schönlein, two years after this, to write the classical description of the etiology of Favus, which set the whole dermatological world to buying microscopes. Such was the interest aroused by this paper that within five years the parasites of Herpes Tonsurans, and Pityriasis Versicolor were discovered, and the whole crowd of zealous but unskilled investigators announced alleged discoveries which were most remarkable. One man claimed to have discovered a fungous origin for leg ulcers; another, a parasite for ordinary Sycosis; a third, one for alopecia areata, and so on. But these were not confirmed.

Up to the beginning of the fifties, it was taken for granted that each species of Fungi developed only one particular form, and could have but one form of spores. But Tulasne, in 1851, announced the discovery that not only in certain isolated cases, but in a great family of Fungi (Pyrenomyceten), different forms of the same organism appeared in constant and regular succession. He showed in this way that a number of fungi, hitherto considered separate and distinct, were only transition forms of one and the same plant. It was also shown that this process of development always wound up with a certain special form, and from this finished product the circle of development started once more.

No better summary of the action of Fungi upon the skin exists, than that written by Hebra, which reads in English as follows: "The vegetable parasites are found only in the epidermoid elements of the human skin, that is to say, between the layers of the epidermis, and those of the hairs and nails. The sole effect which the fungi produce is a local and mechanical one. Their single elements, the mycelia, wedge the epidermis cells and layers apart from one another, in proportion as their own growth flourishes. In this way, the single cells are early lifted up from their base of supplies, the papillary layer, and so changed in their nourishment that they dry up before their time, become brittle, and indeed may completely die. But besides this the Fungus is capable of causing reaction in the underlying cutis, Hyperemia, Exudation, (in which case vesicles appear), and Suppuration, (shown by pustules and abscesses). These results are produced, however, only in the same way as they would follow the penetration of any other foreign body, for example, a splinter."

Perhaps the most important original skin work of the last decade has been performed, and is still being done by Saboraud, of France, in clearing up the subject of Tricophytosis. He first noticed that the clinical varieties of ringworm were many, and sought for corresponding differences in the causative agent. He found, first, two large classes of fungi giving rise to ringworm, the one with small spores, but regulation mycelia, and these he called microtrycophyton and the other with large spores, called megalotrycophyton. The latter are much the more important, and are to be divided into those of animal origin (from horse, calf and birds), and those of human origin. The trycophyton of animal origin coming from the horse, is the only variety capable of causing Sycosis.

On the other hand, the superficial ringworm of hairy regions is always caused by a trycophyton of human origin. There is another form of trycophytosis having the form of a disseminated, moist dermatitis. This variety is due to a megalotrycophyton from the calf.

Now, these discoveries are of a vast deal of importance, for some varieties of trycophytosis are much more rebellious to treat-

ment than others. Some grow faster than others, some invade the hair itself and others do not. So that when this author's work is finished we shall have some data for a choice of therapeutics, and some points in the prognosis of individual cases, which is quite far from exact at present.

Leaving now, for a time, the Fungi as causes of cutaneous disorders, let us glance at some other important points in etiology, which have found their solution in the microscope.

Most important of all is Lupus, which passed for a phase of Syphilis, or for a scourge of God, or something equally broad and indefinite until Koch demonstrated in Lupus lesions the presence of the tubercle bacillus. There is only one point about Lupus which calls for special attention in this paper, namely: the exceedingly scant number of bacilli which suffice to produce so destructive a disease. There is scarcely ever found more than one bacillus in a cell, and even these few are generally limited to the extreme border of the patch. From this fact alone there is a probability of some accessory local cause which remains to be discovered.

Another important disease, one of the most ancient known to man, namely, Lepra, remained as regards its etiology quite in the dark until Hansen, in 1874, discovered its cause to be a bacillus. This discovery was practically a far more important one than it seems at first thought to us, who never see a case, for the discovery of a lepra bacillus and a tubercle bacillus in two diseases so very similar in many of their phases to syphilis, that the lesions cannot possibly be told apart, gives very strong presumptive evidence of the existence of a similar bacillus in syphilis. But I shall come to this later.

A different class of cases, more frequent and more satisfactory to treat, now that their cause is known, is the group comprising furuncles, carbuncles, and impetigo contagiosa. If I should state positively that the cause of all three of these is the staphylococcus pyogeneus aureus, the correctness of the observation would probably be called in question, but I *will* say that this is the generally accepted cause. Impetigo is always due to inoculation of contagious pus, independently of its source. Scratching easily leads to purulent lesions in children, hence pediculi

capitis, scabies and urticaria are very frequent as the immediate causes of Impetigo contagiosa. Crocker found the staphylococci in the fluid of the unruptured vesicles and pustules. Barton obtained pure cultures of the staphylococcus aureus from the fluid of the unruptured vesicles, and afterward produced the disease on his own arm by inoculation of the pure cultures.

As for furuncles, Pasteur and Loewenberg have demonstrated the staphylococcus aureus to be the etiological factor, but in this disease the microbe has penetrated more deeply through hair follicles, or sebaceous or sweat glands. The soil must admittedly be suitable for boils to flourish well, that is, there is generally local injury present, caused by blows, friction or pressure. Anything which debilitates undoubtedly favors the peculiar condition of soil necessary for their vigorous growth.

The process in carbunculosis is clearly analogous to that in furunculosis, commencing probably in the same way, but spreading laterally through the lymph channels; finally the whole subcutaneous tissue becomes so densely infiltrated by micrococci that the blood-vessels are pressed upon and occluded, so that the nutrition of the part is shut off and sloughing occurs.

Of course, the first and by far the most important therapeutic moral to this discovery, and indeed the one thing necessary in impetigo contagiosa is local antisepsis. The second moral is, systemic tonics.

I have spoken of vegetable Fungi, of bacilli and of micrococci as causing certain skin diseases. There remains another kind of parasitic agent whose existence is extremely probable, but is not yet universally recognized. I refer to certain minute round or oval, nucleated bodies, first described by Darier as occurring in the human subject, and called Psorosperms. They start with no limiting membrane, but after attaining a certain size, become encased in a firm envelope. They are found in Darier's disease, (i. e., Psorospermosis Follicularis), and in Paget's disease of the nipple. They also occur in the liver of rabbits. It is also only fair to state that they show no signs of life after attaining their growth, and their envelopes resist even the action of the mineral acids. But they are constant in these

diseases. Some consider them only metamorphosed epithelial cells. Altogether, their nature is uncertain.

Similar bodies have been found by very many observers during the past year, in carcinoma of the skin. One of the most careful papers is by J. Galloway, printed in the British Medical Journal of February 4th, 1893. Of more than fifty cases of epithelioma examined by this author, bodies analogous to Psorosperms were found without difficulty in nearly all. But there is trouble in connecting them etiologically with cancer, as the growth of the latter bears apparently no relation to the numbers of the former. The question of the etiology of cancer is, however, I believe, on the point of being settled, and by Dermatologists.

But the most interesting question of all—the etiology of Syphilis, is still before us. Klebs and others have described micrococci and bacilli in various syphilitic lesions, but the organisms were of so diverse a character that they only brought more confusion to a very difficult question. Not until 1884 did a rift appear in the clouds which surrounded the subject. In this year Lustgarten published his discovery of a bacillus, constant in primary, secondary and tertiary lesions, which stains in the same way as the lepra and tubercle bacilli, but unlike them, is decolorized by washing in nitric and hydrochloric acids. His discovery has been confirmed by many observers since, and the Lustgarten bacillus was considered the long-sought germ until Alvarey and Favel, in France, and later Klemperer, asserted that this same bacillus is to be found in smegma and other normal secretions. Finally, in May, 1893, Dr. Klotz read a paper before the New York Academy of Medicine, in which he adduced numerous instances of apparent acquisition of tertiary syphilis, by contact with syphilitics in the tertiary stage of the disease. These observations, he thought, justified him in assuming the existence of *two* microbes for syphilis, an early and a late! As this assumption was purely theoretical, I mention it only as a suggestion for future experiments. At the present date, then, the Lustgarten bacillus has a good many prominent supporters, both here and in Europe, in its candidacy for the doubtful honor of causing syphilis, but its claim is not fully proven.

One other reference, and I am through with this section of my subject. Is not Psoriasis a parasitic disease? I have never read any discussion of this question, but is it not extremely probable? The usual robust health of the patients, the character of the lesions, tending to spread peripherally and clear up in the center, its amenability to purely local treatment, the nature of the remedies—which are all parasiticides, its recurrence in persons with suitable skin, its choice of blondes rather than brunettes, which is common to all parasitic diseases, and its not infrequent appearance after a slight scratch or abrasion, are all points which seem to me to speak for its parasitic nature. The favorable action of arsenic is no argument against its parasitic causation, for arsenic certainly produces changes in the skin, and our hypothetical parasite may not like these changes well enough to stay.

Since writing the above, I read in the Monatshefte für Praktische Dermatologie a discussion of this subject, held by the British Medical Association, where several of the speakers argued strongly for the parasitic nature of Psoriasis.

Finally, having hastily indicated the prevailing ideas of etiology before the microscope came into play, touched on the more important results it has accomplished, and built air-castles for its future usefulness, it remains for me to close this paper with some hints as to how it may really be an aid to diagnosis for busy practitioners. I am far from being so sanguine as to think that doctors whose waiting-rooms are full of patients will care to go through the complicated technique of hardening, staining, and mounting specimens, but I do think that where a simple unstained scraping, or a hair from the affected district, or a small piece of finger-nail placed on a slide and a cover-glass added, can be the means of telling apart two diseases whose treatment is radically different, these things should be done.

Before considering, however, the rough-and-ready method of diagnosis just indicated, I will merely outline the method commonly pursued in obtaining permanent stained specimens, the technique being perfected by Unna of Hamburg. For all scaly or crusting diseases, such as Eczema, Psoriasis, Impetigo, Tricophytosis, Pityriasis Versicolar, Erytheasma, etc., a piece of

sticking-plaster is pressed upon the patch with the warm hand for a few moments, and then raised with the disease products adhering to it. It is then immersed in a beaker of benzine, when the disease products become immediately separated from it. Then the crust or scale is rinsed in absolute alcohol (to which a trifle of H Cl has been added), and then in water. Next it is placed upon the slide, and covered with a few drops of very strong Gentian solution, being allowed to stain for fifteen minutes. Then the staining fluid is removed with blotting-paper, and the object covered with a weak solution of iodine, for two or three minutes. After, in turn, removing the iodine solution by blotting-paper, the object is covered with the counter-stain selected—Picrocarmine or Eosin, for two or three hours, and finally mounted in Farrant's solution. This method suffices, as I have said, for scaly and crustaceous diseases, where microorganisms are sought. But for the examination of the thicker specimens, such as new growths, sweat or sebaceous glandular affections, etc., the method of procedure differs in no wise from the ordinary technique of pathology.

As I have indicated, most of this trouble can be avoided in many cases. Take for instance, sycosis of parasitic origin, or ordinary barber's itch, and that which, while due to a coccus, is ordinarily called non-parasitic sycosis. They are as much alike clinically, in many cases, as two peas. But in the first, the patient does not shave, for fear of transplanting his disease; in the second, he is required to shave frequently in order to hasten a cure. In the former, the most irritating parasiticides are required: in the latter, the blandest and most soothing applications attainable.

Now, in order to tell which disease is before us, all that is necessary is to draw a hair from near the border of the affected area, place it on a slide in a drop of 5% caustic potash solution, and examine with a power of some four hundred diameters. In the tinea sycosis the parasite will ordinarily be discovered either in the hair or root-sheath, or both, appearing like branched and wavy lines of double contour extending lengthwise of the hair, and scattered here and there, with no particular arrangement, will be little round spores of uniform size. These two elements

are so abundant, and so easily seen that they are a very valuable means of diagnosis. But in the so-called non-parasitic form, in addition to the absence of these bodies, which of itself is quite diagnostic, after several hairs have been examined, there is a peculiar appearance due to the enormous thickening of the root-sheath. This appears as a thick envelope around the hair, suggesting the idea of a wall built up of many layers of transparent bricks. This is so characteristic that a person familiar with it could easily decide upon the disease in question after one glance.

In another class of cases a worried mother comes complaining that her child has a breaking out on his head, and on examination we find in the scalp two or three little crusts and nothing more. These may mean syphilis, acne varioliformis, impetigo contagiosa, ringworm or favus. How are we to decide? If it is syphilis, we shall certainly have corroborative evidence elsewhere. If it is acne varioliformis, a rare disease in this country anyway, we shall get a deep pit on removing the crust. But how tell the other three apart? By simply placing a small piece of the crust again in a drop of 5% caustic potash and examining with four hundred diameters. In Impetigo we get no tricophyton or achorion fungus; in the others we readily get the particular parasite we are after. The tricophyton has already been described. The achorion much resembles it, only the mycelium is more rarely branched, is comparatively short and jointed, and the spores are of many sizes and shapes. Having named the disease, the treatment may be found in any book.

Again, a nice old lady comes along with an eruption on her arm which she has had for eight or ten years; gyrate, scaling, elevated above the surface, cleared up in the center and slightly itching, we would fain believe it psoriasis or ringworm, being loath to call it syphilis. But after repeated scrapings we find no trycophyton, so that fails us; and we can with the utmost diligence get no history or ocular evidence of Psoriasis, so we reluctantly call it syphilis, and see it fade before our eyes under Potassium Iodide.

Another time a man comes complaining of intense itching around the anus and scrotum, and we find a bad eczema present.

This, he says, has been treated by various physicians with temporary success, but it always recurs. Some have even laid it to Bright's disease or Diabetes. A little redness in the pubic region suggests the extraction of a few hairs, when the nits of pediculis pubis are easily seen fastened to the shaft, and the treatment is forthwith successful.

Such cases come to everyone, and with such an easy means of diagnosis accessible, should not be mistreated.

In concluding this necessarily fragmentary and incomplete treatment of my allotted subject, let me quote a recent remark made by an old member of this society, which, while it seems to me overdrawn, is nevertheless suggestive: "In ten years from now, a microscope will be as necessary a part of a physician's outfit as a pair of shoes."

THE GRAVITY OF HYSTERIA.

BY GUSTAVUS ELIOT, A.M., M.D., NEW HAVEN, CONN.

Few diseases of the nervous system come under the care of the general practitioner more frequently than hysteria. Few diseases are commonly regarded as more trivial. The immortal Watson in his lectures, more than half a century ago, said: "Hysteria, though it is sufficiently distressing, is attended in nine hundred and ninety-nine cases of a thousand, with no ultimate peril, either to mind or body."

To underestimate the importance of the disease with which a patient is suffering is always exceedingly discreditable to the physician; it is also generally very unfortunate for the patient. It will, therefore, be profitable to consider briefly whether hysteria has not in the past been regarded too lightly; whether there are not certain features of gravity connected with the disease, which have sometimes been overlooked; and also whether the disease has not, since the time of Sir Thomas Watson, acquired new features of gravity.

The more common manifestations of hysteria are usually easily controlled and quickly disappear. The ease with which, in many cases, harsh and unexpected measures restore the patient to an apparently normal condition, seems to justify the common estimate of the disease.

Unfortunately, however, hysteria shares the fate of most common diseases, of not being well understood. In fact, in many cases, of being positively misunderstood.

The facts that practically nothing of importance is known in regard to the pathology of the disease, that its clinical manifestations are often transient, and that they often disappear rapidly under the use of remedial measures, which are of little value in other affections, place it apart from other diseases and explain why it is not strange that it has received so little serious consideration.

In public clinics, in hospitals, prisons, and almshouses, cases of extraordinary character have within comparatively recent years been carefully studied by Charcot, Weir Mitchell, Mills and many younger neurologists. These cases have served a useful purpose, in calling attention to the existence of more serious forms of the disease than had hitherto been generally recognized, although an unfortunate nomenclature has done much to develop erronous ideas in regard to the real nature of these cases. The name hysteroepilepsy has led many to believe that in these cases there is a genuine epileptic element, which does not really exist in them. Fortunately the more striking forms of disease, which have been made the subject of clinical memoirs, are exceedingly rare in private practice in Connecticut.

There are, however, certain phases of the disease, in its less severe forms, which, while their existence is promptly recognized when they are described by some one else, are, nevertheless, not kept constantly in mind when the physician is engaged in making his daily, or more infrequent, visits among his neurotic patients.

When your rough-and-ready doctor who prides himself on the possession of a great deal of horse sense and very little scientific knowledge, meets with a case of simple hysterical convulsions in a young girl, and restores the normal motor equilibrium by dashing water in her face, the on-lookers wonder at the startling effect of so simple a remedy, and straightway conclude that the trouble did not amount to much. They are ready to exclaim, "Oh! that was nothing but hysterics," and at once banish all sympathy for the unfortunate patient. The doctor chuckles to himself, and admires his own acumen and skill. If one were to see a patient during and immediately after such an attack of the ordinary type, he might consider it an insignificant affair. If the patient is never seen again, of course there is no reason for thinking differently. But it must be remembered that an attack of this kind is an evidence of an instability of the nervous system; that after such a disturbance of the stability of the nervous system has occurred once, it is likely to occur again; that repetitions of these attacks cause a gradually increasing weakness of the nervous system which may result in prolonged or permanent

attacks of chronic invalidism; and that a series of these simple hysterical convulsions may be but the forerunner of serious disturbances of the nervous system in later years. The hysterical girl may become a neurasthenic, a neuralgic or a melancholic woman.

This is one phase of the disease which may fairly be considered as grave. Facts of this kind should be borne in mind by every physician who is called to treat hysterical patients, and measures should be employed to prevent such unfortunate occurrences.

But the individual patient is not alone to be considered. The hysterical woman frequently marries and has children. It has long been well recognized that morbid conditions and tendencies of the nervous system are transmitted from parents to children and grand-children. The conditions of nervous instability observed in the various neuroses are with especial frequency thus transmitted. Epilepsy, neurasthenia, neuralgia and insanity are often traced back to an hysterical ancestry. From this point of view, surely, hysteria must be regarded as an affection of gravity.

The foregoing suggestions have had reference to the remote results of the disease. Some of the cases which immediately exhibit a serious aspect have already been mentioned. There is another class of cases which have not been so carefully described, and which are not so easily recognized, but which are deserving of especial attention from the general practitioner. These are cases which are not clear in their manifestations, which, consequently, are not easily distinguished from other diseases, and in which inadequate treatment may be followed by disastrous results. In many of these cases men of intelligence might differ in opinion in regard to the real nature of the affection. These cases are frequently mistaken for cases of organic disease of the nervous system. It is true that this view has not been often confirmed by pathological observation. When a case with obscure nervous symptoms begins to assume a serious aspect, the physician is apt to say that the patient has brain fever, meningitis, or cerebro-spinal meningitis. If the patient dies, the friends rarely have curiosity enough to have a post-mortem ex-

amination of the central nervous system. If such examinations were made more frequently, it is exceedingly probable that in some instances there would be discovered an absence of pathological changes, which characterize these more commonly fatal diseases.

It also seems to be generally believed that patients do not die of hysteria. If a patient who has been supposed to be suffering with hysteria dies, or becomes so critically ill that a fatal result seems probable, it is generally regarded as good evidence that the disease is something more serious than hysteria. This is a mistake. Sometimes a patient does die of hysteria. The general recognition of this fact will lead to the saving of the lives of some patients who would die, if they were considered and treated as being victims of organic brain disease.

Another reason why mistakes are made in treating this disease is that some very good practitioners, who are careful enough to use a thermometer in the examination of their patients, do not recognize the fact that patients with hysteria may have pyrexia, and that consequently the presence of fever does not necessarily indicate the existence of organic disease.

When the medical profession rejects these two fallacies, and comes to recognize that patients with hysteria may have fever due to that disease, or that they may die as a result of that disease, its diagnosis will be considered in a more rational manner. These facts furnish an additional reason for regarding hysteria as an affection of considerable gravity.

With the more general development of intelligence and refinement, accompanied, as it is, with an increase in the prevalence of functional diseases of the nervous system, it is necessary for physicians to improve their methods of treating these disorders. The coarse and often brutal measures of by-gone years must be superceded by other not less efficient, but more elegant remedial measures. It will be found unwise to destroy entirely the sympathy of the patients' friends. It is exceedingly unfortunate for the other members of the family to get the idea that the hysterical patient is herself entirely to blame for her condition. Although to a certain degree this may be the fact, yet such a statement does not embrace the entire truth.

Still more unwise it is for the physician himself to betray any lack of sympathy. His manner, of course, should not be weak and vacillating, but, on the contrary, while avoiding everything bearing the appearance of unnecessary harshness, he should be kind, yet firm, he should insist that his directions be minutely carried out, he should inspire hope, and by every word and action should bring encouragement to his weak and unfortunate patient.

In conclusion, these facts must never be forgotten:

First. Hysterical manifestations indicate an abnormal condition of the nervous system.

Second. This condition will be aggravated if the patient is not properly treated.

Third. Prolonged or frequently repeated attacks may inflict serious and permanent damage upon the nervous system of the patient.

Fourth. As a consequence, a tendency to functional disorders of the nervous system may be transmitted to the children and grand-children of the patient.

Fifth. Serious symptoms, and even death may be caused by hysteria.

AN INTERESTING CASE OF PERITONITIS.*

E. F. PARSONS, M.D., THOMPSONVILLE.

Those who were present at the meeting of this Society held two years ago, will probably remember with what earnestness, and, possibly, enthusiasm I then advocated and defended the opium treatment for Peritonitis.

And if the teachings of the case whose history I am about to narrate, show that I must retract any statement I have made, and require that I should step down from a position held for many years, and one intimately associated with the prized instructions of that great teacher in medicine, Dr. Alonzo Clark, it will be because the cold and imperative facts of medical science teach her loyal disciples to be bereft of all prejudice, to worship no man, however eminent as a teacher or practitioner, and to swear by no dogma.

But if the discipline of our discipleship involves mortification and disappointment, we will try and take our cudgeling gracefully, in order to step up to a higher plane of experience in usefulness.

Mrs. F. H., aged about 50, who had suffered during the past 15–20 years from occasional attacks of what was called bilious colic, complained again on Wednesday, January 31st last, of pain in the right hypochondrium. It was accompanied with vomiting. She was soon relieved of the extreme pain by a hypodermatic injection of morphia, and after a few days of confinement to the bed was able again to attend to her household duties. The pain, however, did not entirely disappear and was accompanied with more or less irritability of the stomach, and it required an occasional dose of opium to keep her comfortable.

On Friday, February 9th, the pain in the region of the liver returned with great severity, and with it the vomiting also was frequent.

Another hypodermatic of morphia, gr. $\frac{1}{4}$, gave her complete

*Read before the Hartford County Medical Association, April 19, 1894.

relief for a few hours. The pulse was not at this time rapid, but was somewhat increased in frequency. One-tenth of a grain of morphia given occasionally kept her comfortable for the next twenty-four hours, but on Saturday evening, February 10th, about twenty-four hours after the commencment of this last attack, I found the abdomen tender, tense and tumefied: her pulse 140 per minute, her temperature 103° and her respiration 33 per minute.

A pill of opium, 1 gr. and calomel, $\frac{1}{2}$ gr. was ordered to be given every two hours through the night, with the effect of bringing down the respiration to 27–28 per minute. The pulse was now found to be 136 per minute and the temperature 101.5°. Morphia, gr. $\frac{1}{3}$, was now hopefully given every two hours through the day and every hour through the following night. Monday morning the respiration was 18–20 per minute, but the pulse had arisen to 140 per minute again, and did not seem at all inclined to yield its frequency to the power of the retarded respiration.

The morphia was, however, boldly pushed in $\frac{1}{3}$ gr. doses every hour during the day, and by 9 o'clock P. M., the respiration reached the desired limit—twelve per minute; the pulse, however, did not follow but continued to hurry on at about 140 per minute as before.

The morphia was now discontinued, but the respiration during the next few hours became less frequent, and the pulse, strangely, more frequent still.

Between 12 and 2 o'clock that night the respiration was counted at 7–8 per minute, while the pulse was beating away at 150 per minute.

There was, of course, no pain, very little if any tenderness, and only occasionally vomiting. But the rickety condition of the pulse far more than compensated for any comfort to be gathered from these negative symptoms. A rapidly approaching climax seemed imminent. What could be done? The respiration threateningly slow and irregular showed that nothing more could be expected from opium.

By rule, narcotism to the degree attained strangles the inflammation in the course of a few hours, and we had been anxiously

watching the chest since early night, ready to use atropia if needed.* Why was the heart so obstinate? Could it be from exhaustion? A few doses of whiskey and stimulants were given under this suspicion, but with no satisfaction.

I need not tell you that I felt discouraged in the middle of that night in that dismal bed-chamber, face to face with the prospect of seeing disease soon triumph over the vital powers of another human victim. Opium had signally failed. The reaction from hope and confidence was demoralizing and made me well nigh desperate.

Could anything more be done? Would it be possible for the saline treatment to effect anything at this late stage of the case? It may do harm, and yet, it can only hasten by a few hours, what threatens speedily to become a fact. Its use is sanctioned by eminent authority. After such thoughts as these, gentlemen, I ventured to give my patient one teaspoonful of Rochelle Salts at 2 o'clock Tuesday morning, and directed that the dose should be repeated hourly until countermanded.

The respiration, by day-break, had attained a safer frequency with no new development of unfavorable symptoms.

At 10–11 o'clock A. M., when I entered the room of my patient, after a few hours absence, she greeted me with the welcome statement that she felt better; and to my surprise I found on examination her pulse 136 per minute and her respirations only 15–16 per minute. The pain, tenderness and vomiting did not return with the discontinuance of the opium. I now bravely substituted Epsom Salts for the milder saline, and by Wednesday morning the patient had passed nine watery stools. The frequency of the pulse diminished regularly but slowly with the continuance of the treatment.

Her prostration was great, considering the short duration of her sickness, but she gradually rallied, and by Sunday following with a good pulse of about 100, and her abdomen free from pain, tenderness and tympanitis, we considered her convalescent.

She has made a good recovery.

*Moore's success with Potassium permanganate had not then been confirmed.

THE TREATMENT OF DIABETES.

OLIVER J. D. HUGHES, M.D., MERIDEN.*

Professor Packard of the University of Pennsylvania, in his very able article on the treatment of this disease, aptly says: "In considering the subject of the treatment of diabetes mellitus, there are a few fundamental facts in regard to etiology that must, of necessity, form a prelude to the more immediate consideration of the efforts at cure. The affection itself can hardly be considered as more than a symptom, the primary causes of which are, probably, many of them as yet unknown, while others that are well established belong to several categories. The various theories as to the mechanism of perverted sugar transformation and assimilation are so elaborate, and have so little immediate bearing upon the actual treatment of the disease, that they are not worth repeating."

Heredity, as regards this disease, is clearly and without doubt established on a firm foundation, as can be well illustrated by the Jewish race in which it is very frequently to be found. In families with the "gouty inclination" we find the same state of affairs.

Any excess of mental anxiety or overwork, or nervous disease it must be specially noted in this connection, will help to develop this trouble.

Climate will, in my opinion, have more to do with the curative process in nine cases of ten than all the medicine in the world—but of this I will speak later.

Syphilis is claimed by some writers as a cause. Excessive eaters seem, also, to be subject.

Prophylactic measures should be taken by all who, owing to diabetic tendencies or family history, have an inclination that way; they should avoid any excess of starchy or saccharine foods and be moderate in their every way of living and daily life. They should try, in their selection of a trade or profession, to

*Read at the annual meeting of the New Haven County Medical Association, October, 1893.

pick out one in which there is the smallest amount of brain pressure or excitement and live as near as possible to the sea-shore, with a temperature of about 70° F. And just here let me say a word about a paradise for the diabetic; a place specially suited for him, by an allwise Providence, and almost at our door-step, namely: the Bahama Islands—of which Nassau, in the Island of New Providence is the capital and seat of Government. Here we have just the climate of the ideal month of Summer all through the Winter months. A good hotel built by the British Government, run by American Hotel managers, good society, beautiful scenery, good roads, plenty of the best fishing and sailing in the world, and all within three days sail from New York, on good, large, handsome and well-built American steamships, of the New York and Cuba Mail Steamship Co. If one prefers still greater quiet and rest, just let the patient take the mail schooner of Sawyer & Co., at Nassau, and after a delightful sail of a few hours, land on the Island of Abaco. Here he can live á la Robinson Crusoe, with all the benefits of civilized society thrown in. I can recall the case of a friend and brother M.D., whom I sent there, and, thanks to a long rest and its God-given climate, is to-day a well man and useful member of our hard knocked and badly treated profession.

We will now consider the diet question from the diabetic standpoint. Our aim here is, how it may be best to give nourishment that will nourish, and at the same time stop, as much as possible, that excessive manufacturing of sugar by the liver. Of course, we know that the principal foes we have to deal with are the carbohydrates, principally starch and sugar in all its forms. In simple mild cases of diabetes, the avoidance of sugar and starchy food fills the bill, and our patients have very little trouble; but even in mild cases we must be ever on our guard.

Professor Purdy of Chicago, in his admirable work on diabetes says: "It has been shown that the *chief* source of sugar in the organism is the carbohydrate foods, but unfortunately, while they are the chief, they are not always the only source. Experimental investigation has shown that when animals are fed upon purely nitrogenous food—even for lengthy periods of time—a small

amount of glycogen still continues to be present in their livers. In the graver forms of diabetes the "sugar forming vice" of the organism becomes so strong that the liver is capable of splitting up a portion of the nitrogenous foods, and, probably, even the albuminoids of the tissues, and of transforming a part of them into sugar. In such cases, while the dieting treatment is able to modify the excretion of sugar as well as most of the symptoms, it is not able to arrest the progress of the disease. Fortunately, such cases form a minority of those who become subjects of this disease, and are, in nearly all cases, very young people, or long neglected and advanced cases."

In selecting our foods for the diabetic patient we must remember that the animal foods are the least susceptible of conversion into sugar; that the green portions of certain vegetables resist next in order the transformation into sugar; and lastly, that "the starchy and saccharine members of the carbohydrate group are the most easily transformed into sugar, of all; and are, therefore, the most dangerous of all. Practically, then, the text of our sermon on the treatment of this disease is: Eliminate starchy and saccharine foods, and the better we can do it, the easier our fight with our old enemy—disease.

Now, let us, for a few moments, take up the different articles of food, and the first one that we naturally turn to is:

Bread.—My own personal experience has been, that one or perhaps, two slices of good plain, wholesome home-made wheaten bread, at a meal, will do the diabetic no harm whatsoever; and that all the bread made from prepared and so-called, diabetic flours that I have tried are a humbug, and contain more starch than anything else.

Dr. Chas. Harrington, of Boston, has gone still further and deserves a monument from the diabetics for his fearless and honest expose of this enormous humbug of, so-called, starchless flours. He has given us the results of his careful analysis, which are as follows:

1.	Home-made bread contains, . .	44.99% starch.
2.	Graham wafer, made of Graham flour, .	58.45 "
3.	Farwell & Rhines, gluten flour, .	67.17 "
4.	Farwell & Rhines, Diabetic food, .	68.18 "

5. New York Health Food, gluten flour, 66.18% starch.
6. New York Health Food, bread from the above flour, . 35.00 "
7. Dr. Johnson's Educators, guaranted to be absolutely free from starch, . . 71.42 "
8. The Boston Health Food Co.'s No. 1 diabetic flour, absolutely non-starchy, . 62.94 "
9. Bread made from above flour would contain, . . 30.00 "

The moral I would have you infer from the foregoing is: Better stick to a devil you know, and don't go searching after a special Hades you do not know anything about. With home-made bread, we can regulate our dose of starch and know just what we have to face, but with these hidden frauds of, so-called, "Non-Starchy Foods," we are all the time in the dark and doing our patients no end of harm besides.

If you find you are giving too much bread, cut it down, little by little, till you get to the safety notch. Watch your patient's urine, that will tell the tale. In my hand, fresh bread cut thin, and if they like it toasted so much the better, has given the best results; but remember, watch your safety-valve—the urine.

Beets, carrots and parsnips I forbid altogether, but in mild cases I allow a baked potato once a day, and get no bad results from it; but of course, in bad cases, this must not be allowed.

Sago, oatmeal, cornmeal, buckwheat, rye, barley, dried peas and beans I exclude in every way. A very few green peas, in mild cases, may be allowed, lettuce, cucumbers, olives, mushrooms, brussells sprouts, cabbage, spinach, water-cresses, tomatoes, all kinds of nuts, such as almonds (fresh and toasted), walnuts, Brazil nuts, filberts, butternuts, fresh and green *cocoanuts*, etc., but no *chestnuts*. Apples and strawberries contain so little sugar and it is in such a form that it is at once assimilated by diabetics—I allow them ad lib.—except in the worst class of cases: all kinds of meats, poultry and fish, either boiled, broiled, roasted or potted; in fact, in every way except *fried*; but liver of all kinds should not be allowed. Soups and broths of all kinds, without any flour or sugar in their make-up, may be taken and as little vegetables as possible.

Some writers make quite a fuss about oysters, lobsters and crabs. I have never seen any bad results from the moderate use of them and have, in fact, seen good come of it.

I allow my patients all the water they want or care for; all kinds of mineral waters, good Rhine Wines, a little Bass Ale with their dinner; but what I consider the best of all drinks for a diabetic is Schrieber's Dietetic Red and White Wines, which contain no sugar at all. If they require liquors of any kind, good sound imported Holland Gin, or good American Hunter Rye Whiskey. A little weak tea will do no harm—but milk, except in very small quantities, cannot be allowed—chocolate, coffee, cocoa, cider and all sweet wines, I do not allow.

For sweetening purposes Saccharin (Merk's), will be found a good substitute for sugar or, what I think still better of, is Diabetin (Schering), "a pure white crystalline powder, as convenient for general use as a food-stuff, as any of the other sugars," so the manufacturer describes it, and I can honestly say he tells the truth. It is much sweeter than cane sugar—and goes further and tastes more like the sweet of good ripe fruit.

Of the *Medical treatment*, Prof. N. S. Davis, Jr., of Chicago, rightly says that "our lack of knowledge of the causes and exact treatment of diabetes, makes *all* treatment empirical."

Now, for a few minutes, let us take up the different drugs recommended, and see what is said for and against them:

1. *Arsenic and its different preparations* have long been used in the treatment of this disease. Salkowsky was the first to note the fact, that when animals were given large doses of this drug, glycogen greatly diminished in their livers; and since then Fowler's Solution and the different preparations of the Bromide of Arsenic, (principally the solutions of Gilliford, in 10 to 20 drop doses, more or less, or the stronger solution of Clemens, in from 3 to 10 drop doses), have been given; personally, I have had very poor results with these solutions, and have done much better with the Bromide itself, in from $\frac{1}{60}$ to $\frac{1}{20}$ gr. three or four times a day, being careful to watch for toxic symptoms.

Fowler's Solution has, in my hands, done good work, both in decreasing the amount of sugar and also the quantity of urine,

as well as building up my patients. I give it in from 5 to 20 drop doses well diluted, three or four times a day for a couple of weeks, then stopping for a few days and again commencing with small doses and gradually running it up, day by day, to the full extent that my patient will bear it, and so on.

Purdy, on the other side, claims to have had no really satisfactory results with this drug except from the Arsenite of Iron in doses of from $\frac{1}{16}$ to $\frac{1}{6}$ gr. in cases complicated by anemia and malaria. Martineau claims to have cured 67 out of 70 cases by the Rouget system of giving arsenic in conjunction with lithium; on the other hand as a result of trials on a large scale at Bordeaux, no such results could be obtained or appreciable benefit even.

In writing of the treatment of this disease by Arsenic, Davis, of Chicago, says: No drug has seemed to me so uniformly to give good results as Clemens' Solution of Arsenic and Bromine, and he claims to have tested it thoroughly in nearly two hundred cases. He says: "under the influence of this Solution (Clemens'), I have seen the sugar greatly diminished, and in almost every instance disappear entirely from the urine." He further says its mode of action can not be explained. I wish I could say the same.

Opium, Morphia and Codeia, are lauded up to the skies by some men—but in my hands, whilst I have found that in bad cases they will decrease the amount of sugar in the urine, on the other hand, owing to the *large* doses which must be given to get any real good honest effect, is it worth while to run the chance of making your patient a confirmed opium fiend, as well as to ruin his digestive apparatus, if there is any other way out of the difficulty? All I can say to you, gentlemen is, *stop* and think a minute before you adopt the opium treatment. Are the results you get from this drug worth the pains? All this talk about the diabetic not being subject to the opium habit is all rot, and nobody can prove the statement. Better, a hundred times over, that your patient should be a diabetic than that he should become that lowest of the low wretches on earth—an "opium fiend."

The Bromides are useful only as a remedy for the many ner-

vous conditions accompanying this disease but will be found to have no effect on either the amount of sugar or urine passed. *Antipyrin*, was introduced by Germain See, who claims for it, that it would exert a "strong controlling influence over the production and excretion of sugar." I have been unable to find anybody else who can say a good word for this drug in that line.

Ergot, according to Purdy, "has enjoyed a popularity second only to opium in the treatment of Diabetes, and probably not without some slight merit. Its vasoconstrictor action upon the portal circulation, doubtless accounts for its beneficial effects in these cases. Its controlling power over typical diabetes, however, is feeble; but in mild cases it often sensibly diminishes the sugar excreted. Ergot is, therefore, best suited to mild cases, and especially those in which the patient has good digestive powers. The drug is best administered in the form of Ergotine, or the fluid extract of Ergot prepared by Dr. Squibb. The latter may be given in ½ dram doses, gradually increased according to the tolerance of the stomach."

Iodoform was quite the rage in Europe some years ago, but owing to its tendency to produce toxic symptoms it has fallen into disuse.

The Alkalies have been found of great service, owing to the well-known fact that in this disease the blood "becomes greatly reduced in its alkalinity, and, as a consequence, its oxygen holding powers are greatly weakened. It follows, therefore, that the use of alkalies is very appropriate in these conditions, and experience has amply demonstrated their usefulness."

I have used the *Arseniate of Strychnia*, in some cases with remarkable results, especially in those of a very nervous disposition. I have especially in mind, the case of a young married lady, who came to me some six months ago. She had been sick for about two years, with what she said was nervous prostration. She was unable to sleep, was very weak, had headache, had not menstruated in six or seven months, no appetite, unable to walk more than a block without sitting down to rest, would start, in fact, almost jump out of her chair if spoken to quickly, passed a great deal of urine, having to get up six or seven times every night. All this time she had been under the charge of a famous

New York specialist, *who had never examined her urine;* who, even when spoken to by her about the quantity of urine she was passing, said: "Oh! that is only due to your nervous condition."

One of the first things I did when she came under my charge, was to examine her urine; specific gravity 1048—460 gr. sugar to the pint. I at once put her under diet restrictions, gave her $\frac{1}{120}$ gr. Arseniate Strychnia (Merk's) every two hours; oxygen gas inhalations every three hours, and all the Lithia water she could drink, and as a result, Oct. 11, '93, after a five weeks trip to the West and the World's Fair—urine, specific gravity, 1024; no sugar, and not very nervous, can eat a good square meal, and sleep like a top all night without getting up once to pass water.

Oxygen Gas is very highly recommended by Purdy, Bouchard, Day and many others. From personal experience I cannot speak too highly of it.

Pancreatic preparaitons have become somewhat the fashion of late. In the British Medical Journal of January 14th, 1893, Dr. H. W. G. Mackenzie reports two cases, in both of which the feeling of well-being was increased, the lassitude and weakness lessened, the thirst and urine diminished, but the *specific gravity and quantity of sugar remained the same.*

Dr. Neville Wood, in the same journal, gives about the same results in two cases.

Dr. Davis of Chicago, says, "pancreatic preparations have no decided value in the treatment of diabetes."

I have had no personal experience with these preparations.

I will next call your attention to *Jambol* or *Jambal*, a tree indigenous to the East Indies, but also found in northern South America, and to a small extent in some of the West India Islands. In the East Indies, the acid fruit of this tree is eaten by the natives, as a cure for diarrhea and diabetes. It has been used in Europe, in the shape of a solid extract, for about ten years in the treatment of this disease, with more or less good results. I know of no drug, with which I can do so much as this one. I have, so far, failed to see a case that will not yield and show a *markedly decreased* amount of sugar in the urine within five or six days, and if persistently kept up, an entire disap-

pearance of the sugar, and that too, on a fairly liberal diet. To get the best results from this drug, I find it is best given before meals and at bedtime in fairly good sized doses, well diluted in Lithia water or spring water, during the time the patient is taking the Jambol. I also have my patients take from one to two gallons of oxygen by inhalation three times a day—having found out the effect of Jambol is much more marked in those cases that take it, at the same time as the gas, than without it. I have had no result at all with the powdered preparations of this drug, and in fact gave up its use altogether, until Parke Davis & Co. put their elegantly prepared fluid extract of the seeds on the market; since which time I have given it, more or less, to all my patients suffering from this disease, with excellent results. While I do not claim this drug is a specific, I do claim for it, (the fluid extract of the seeds) that it is the best and most reliable of any means we know at present to arrest the course of diabetes. It has been my custom to give it, starting with five doses four times a day, for a couple of weeks, three in the next two weeks, to gradually run it up to ten, four times a day, and then in the following two weeks, (i. e. the fifth and sixth weeks), to gradually taper off, and finally to come to a full stop at the end of the sixth week,—noting carefully, day by day, the specific gravity and other conditions of the urine. If I get a reappearance of the sugar in the urine, I start in again and push the drug till I get no sugar, and then stop. While it may not cure the disease, it does take away the excessive nervous symptoms, the feeling of uneasiness, and allows the patient to go about his or her daily labors with ease and comfort, to say nothing of being able to sit down to table and eat moderately of what he likes, and in fact, feel like a human being and not like an animal condemned to bran mashes and other tasteless and unsatisfactory messes. With patients who show markedly nervous symptoms, I have given the Arseniate of Strychnia in from $\frac{1}{120}$ to $\frac{1}{60}$ gr. t. i. d. at the same time as the Jambol with good results.

To sum up in a few words, my idea of the best way to treat diabetes, is:

1. If you can, remove your patients as near as possible to the sea-shore, where there is a temperature of not less than 70° F.

2. Have them wear light flannel next to the skin at all times, and be careful in every way as to their dress, so as to avoid colds, etc.

3. Be moderate in eating and drinking, and avoid all foods and drinks that you may find unsuited to their condition. Do not let them, under any condition, use any of the patent or so-called diabetic foods.

4. Use good common sense in ordering drugs for them, and do not let yourself be persuaded that you are doing good for your patient by turning him into an opium fiend, above all things; a little good whiskey hot at bedtime, will give a better night's rest and a clearer head in the morning than a grain of opium or like dose of morphia, or codeia.

5. Have your patients take a good hot bath, once or twice a week, and be thoroughly dried and rubbed down after it, or better still, if they can and it agrees with them, use the Turkish or Russian Bath.

6. See that your patient's bowels are kept in good condition, as all diabetics are apt to be more or less constipated.

AN APPEAL FOR STATE LEGISLATION TO PREVENT BLINDNESS.

H. W. RING, M.D., NEW HAVEN.

In 1890 I read before this Society a paper upon "Ophthalmia Purulenta; its prevention and treatment."

I then called to the attention of the Society facts and statistics bearing upon this subject and made an appeal for a movement looking toward the enactment of a State law similar to the New York State law for the prevention of blindness.

Since then I have had correspondence and personal interviews with the authors and promoters of laws which have been passed in New York and Maine, and I am convinced that similar laws may be passed in Connecticut, regulating the care of infants afflicted with ophthalmia neonatorum.

In the first place, the disease can be cured.

The origin of the contagion is the morbid vaginal secretions, and the most successful prophylactic measure to be employed is that practiced by Credé. He introduces a single drop of a two per cent. solution of nitrate of silver between the lids of each eye immediately after birth. The effect of this method has been to reduce the frequency of the disease in the lying-in hospital at Leipsic from 7.5 per cent. to 0.5 per cent. Even a one per cent. solution will suffice. The rigorous proceedings of a public hospital do not fully apply to private practice.

Dr. Howe brought together two groups of cases, one comprising 8,798 cases in which no precautions were taken, and another 8,574 cases in which one drop of a two per cent. solution of nitrate of silver was applied to the eye. In the former, the cases of ophthalmia reached 8.66 per cent. and in the latter 0.656 per cent.

For the ordinary secretion found in the eyes of infants, a mild antiseptic wash may suffice, but among the unclean or where there is the slightest suspicion, Credé's method should be adopted. The silver nitrate solution should be in the obstetric bag of every practitioner who visits the lying-in room.

According to the returns up to 1887, there were in Europe and the United States, 224,245 blind people. The average results of investigators indicate that about thirty-four per cent. of all blindness is caused by ophthalmia of the new-born, so that 76,243 people existed in the above mentioned countries in a condition of blindness due to that one disease, 70,000 of whom should have been enjoying useful vision.

Taking the authority of a member of the profession of our own country, Dr. Lucien Howe, of Buffalo, New York, has shown that blindness is greatly on the increase in the United States.

While the population increased from 1870 to 1880, 30.09 per cent. the number of blind increased 140.78 per cent. In fact the blindness is increasing four times as rapidly as the population.

He also showed that from the point of view of the economist the cost of caring for the blind in our country amounts to more than $25,000,000 annually. If the humanitarian view of this question should fail to appeal to the average legislator, the economical side will.

The pioneer in our country in promoting legislation to prevent blindness is Dr. Howe, before mentioned, and he has investigated this matter so thoroughly, and with his associates, has accomplished so much that I shall quote him freely in trying to interest this Society in aiding the few men who must naturally be the active participants in effecting legislation.

We are convinced that ophthalmia neonatorum is a preventable disease. We all know how favorable a prognosis can be given in the early stage, and, on the other hand, we know how extensive are the ravages which may follow after ulceration of the cornea has begun.

When these cases are seen within the first week after birth, a generally favorable prognosis may be given.

Now, as to the desirability of legislation which should force nurses and attendants to bring these children to the notice of practitioners while the disease is still in the very earliest stage.—

The story is a familiar one of the infant being brought to the office of the oculist, with the cornea ulcerated or, perhaps, perforated, and the mother and sometimes the attending physician,

thinking that the child has "taken cold" and requires, perhaps, no further treatment than hot water or milk which has been applied to the eyes. And the scene, also, is unfortunately familiar, of the mother weeping over a hopelessly blind child, all simply because the nurse has supposed that the infant has merely taken cold, and had been relying upon some of the numerous household remedies just a little too long. The question before us, therefore, is what means can be adopted to bring these children, as soon as possible, to the notice of a competent physician. Education of the laity is useless. It has been tried in London, and tracts issued by a Society organized to prevent blindness, to educate the people up to what they should do and what they should not do.

Urging the nurses, professional and otherwise, is equally insufficient. It remains only to place the responsibility at once where it belongs, by imposing upon such persons a severe penalty. The surest and best means of accomplishing this is, undoubtedly, by legislation.

This was the view taken by those who have considered it most carefully; and following the plan which had been partially adopted before in Switzerland, and elaborating it, a concise but explicit bill for the proper protection of these infants, was passed by both houses of the New York Legislature, 1890, without a dissenting vote, and became a law.

It is important that the first cases should be so clear as to make conviction a practical certainty, and it can only be a question of a short time before a good typical violation of this statute comes under someone's notice, and after having been once tested, subsequent convictions will be easy.

The state of Maine was the second to pass such a law, which was a very slight variation from the New York law, with a lighter penalty, probably too light. The third state to have such a law was Rhode Island.

A question might arise as to what advantage it is to oblige nurses and midwives to report to physicians a disease of which a certain class of so-called doctors are almost as ignorant as the nurses themselves. The answer to this is three-fold:

1. The nurse is made to appreciate her responsibility, not only

in that case but in others, and to know that the condition indicated by the redness and discharge is not anything to be trifled with.

2. The parents, also, become alarmed when they know that the disease is sufficiently serious to be the subject of special legislation, so that in choosing a practitioner they select with rather more than ordinary care.

3. As for the physician himself. If he accepts the case he feels that he must understand it thoroughly and he will be apt to look it up with considerable care in his text-books and treat it intelligently. Above all, if he fails to do that, the parents have a responsible individual against whom they can with perfect justice enter a suit for malpractice, and if he has proved himself incompetent he not only suffers the penalty which a law has provided for him, but one such case would be an example to him and to other practitioners in the community in which it occurred.

The children of foreign emigrants are not only often cared for by midwives, but also often given over to them entirely at an early age, and women when accustomed to assume any such responsibility must be taught this part of their duties. If they will not learn in any other way, a heavy fine or imprisonment is but a small penalty for the crime of having blotted out the sight of a human being. Where the German element is large, the children are often cared for entirely by midwives and those, though usually well qualified by instructions obtained in their native countries, are also not infrequently ignorant and careless in the extreme, and need to be taught that the hand of the law may interfere for the protection of the children given into their charge.

Having shown that such legislation should be enacted, and that it is our duty to lend our efforts and personal influence to obtain it, it ought to be done with little effort. Of course, in any such undertaking it is necessary to enlist the sympathy and coöperation of a few leading men in each branch of the Legislature—those whose standing and character is such as to command respect for any measure which they advocate. The personal coöperation of the Governor is also a warrant of success

from the first. But the average legislator is ready to listen patiently to any such claims of an unfortunate class, and his assistance for the bill should not be difficult to obtain, being certain, as he is, that the originators of it have only the best motive. If the politicians hesitate or are inclined to smile at measures for the relief of sore-eyed babies, they are quickly brought to their senses, if confronted by such evidence as is unfortunately always at hand in every large city, or can be easily attained among the inmates of any asylum for the blind. Such men realize that they have with them the hearty approval of their constituents, of the press, and of the people, and that they are saving from a life of misery, to which death is often preferable, a large class of those who would otherwise be hopelessly blind.

At the last meeting of the American Medical Association, the following resolution was unanimously adopted by the section in Ophthalmology:

Whereas, There are in the United States several thousand persons who have become blind because of ophthalmia neonatorum and whereas, this unfortunate result is largely preventable, being due to the neglect of nurses and midwives, therefore,

Resolved, That it is the sense of this section of the American Medical Association, that a committee of five be appointed by the chair, to urge in all parts of the country, by personal application, by circular to physicians and legislators, and by blank forms of a desirable law, such legislation as will tend to lessen the blindness caused by this disease.

The law I am about to offer for your consideration and support, is such as this committee thought would be desirable if generally adopted, and a copy of which I received from Dr. Howe, the chairman.

This law will be embodied in the resolution which I will now offer:

Whereas, There are in the United States several thousand persons who have become blind because of ophthalmia neonatorum, and

Whereas, this unfortunate result is largely preventable, being due to the neglect of midwives and nurses. Therefore,

Resolved, That it is the sense of the Connecticut Medical Society that the following law should be enacted:

The people of the State of Connecticut represented in Senate and Assembly, do enact as follows:

SECTION 1. Should one or both eyes of an infant become inflamed, or swollen, or reddened at any time within two weeks after its birth, it shall be the duty of the midwife or nurse having charge of such infant, to report in writing, within six hours, to the health officer or some legally qualified practitioner of the city, town or district, in which the parents of the infant reside, the fact that such inflammation, or swelling, or redness of the eyes exists.

SEC. 2. Any failure to comply with the provisions of this act shall be punished by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3. This act shall take effect on the day of eighteen hundred and ninety .

OBSERVATIONS DURING THE VACCINATION OF A COMMUNITY.

J. C. KENDALL, M.D., NORFOLK.

After you have tied a baby's umbilical cord the next most important service you can do it is to vaccinate it. Unsuccessful vaccination is a delusion and snare, both to the individual and to the community. Vaccination is not scratching, it is inducing the disease vaccinia. This is a disease of a typical course and history, independent of all epiphenomena, although there may be complications and sequelæ. Vaccination is no fool's job, nor is it a fool of a job. It requires suitable instruments, proper material, and all the experience and skill one can bring into exercise. The sequences of the act of vaccination should be observed and judged with the same conscientiousness that is required in any other medical or surgical service. To scratch a man and let him go is quackery. To do a two dollar, or a one dollar, or a fifty cent or a twenty-five cent job in vaccination, just as the party calls for and pays for, is execrable trifling, unworthy to be entertained in the mind and purpose of a doctor in medicine for a moment.

If there is any truth in the foregoing propositions, vaccination is a subject for study and judgment. I made it a subject of study last January and February, during the course of a general vaccination of the people of Norfolk. There had been previous vaccinations in that community, twelve and twenty years ago. There were people all the way up to twenty-five and forty years of age who had never been vaccinated. The vaccination was very general; persons who had been vaccinated, two to five years ago, submitted to it.

I had never seen a general vaccination before, only very sporadic work of this kind. It was striking to observe how profoundly many people were affected, and this not by sequelæ or local manifestations, but by constitutional impression of the disease.

My attention was early called to the many cases who had had the pock in Ireland, and so needed no vaccination now. I found

out from people now sixty years old, that they did not use to have any dread of the pox in Ireland: did not avoid it; all had it; the well would sleep with the sick; they would not have any doctor; the mother would care for the sick ones, and nobody died of it. One of these Irish pock cases, through persuasion of his wife, came to be vaccinated. I vaccinated him and it took well. I had others of the same sort, they took, and I lost all faith in the immunity of Irish pox patients against the smallpox. I got so I was unwilling to let one such person, who had not pock-marks, consider himself protected against smallpox. I finally had such a person brought to my attention who had been at a house when smallpox broke out. He had not been vaccinated the week before with his family, because he considered himself safe. I investigated him and told him I did not believe he was protected; that he must be vaccinated to insure his escape from smallpox. It worked thoroughly.

The next group of cases to review is—people who cannot be vaccinated, e. g., a man sixty-five years old had lived through two generations of doctors who had told him there was no use in vaccinating him—he couldn't take. He had a large scar—large as a silver half-dollar. All the stock I take in scars is to observe what sort of a sore the party had after a previous vaccination. I do not read anything in a scar that says "protected to such or such a degree." Although this man considered himself proof against vaccine, I repudiated the presumption and encouraged him to be vaccinated. It worked well.

Example 2. A young lady could not be affected by vaccine; had failed in years past. Last summer before going to the World's Fair, she had the care to make two attempts to be vaccinated. She was close by a vaccine farm at Stoughton, Mass., and got points there to be vaccinated with; both attempts failed. Still, through present fear of smallpox, she came to me to be vaccinated. I vaccinated her and had not the least trouble in inducing a vigorous course of vaccinia.

I followed up all my cases of vaccination, and in only four did I get no effects: one was a boy of my own, eleven years old, in whom both a first and a second vaccination failed, whereas, the first was successful in his brother and sister; all had been

vaccinated in company. A second was a man twenty-five years old who had been vaccinated twenty years before. He was exposed to smallpox, and I vaccinated him six times in successive days, with no result; he did not take smallpox.

A third was a mulatto woman thirty-six years old, who I was told had been vaccinated seven or eight times, with no result. Her mother, sixty-five years old, told me that she was likewise proof against vaccine. This time, however, she did not withstand it.

The fourth was a lady sixty and over, whose brother told me: "When you want to vaccinate go out into the woods for a green chestnut stick and not into the garden for a dried bean-pole." I tried her three times.

In primary vaccination, of course, the work is not satisfactory unless the person has a characteristic vaccinia and pustule and scab. In subsequent vaccinations I personally am not satisfied unless a second attempt fails. In a given case you cannot tell whether non-success is through immunity on the part of the person or failure on the part of the vaccinator. I have not seen later attempts succeed in non-primary cases when the second failed, and I have never seen a primary case that required a third trial.

Another group of cases are those of tardy progress. I put it upon the conscience of everybody that vaccination was our present business, his and mine, that he must attend to it just as much as he would to a fever or a felon; that I would expect to see him as nearly as might be on the fifth day. While we were interested in vaccination I put it through; nothing was left for chance or convenience, and when people did not come I hunted them up. I never let cases run to see what they would do. I have heard of an insertion showing the working of the vaccine in twenty-one days, and that is the longest lapse I ever did hear of where it finally worked. If my cases did not show initiation in five days I made another insertion. I consider a great gain in this practice. In cases where it would appear that there was no life in the original insertion, I have seen a second insertion immediately force the process along most actively. I have seen the whole force spent at the first point, but, usually,

the two would work together and the second would mature as early as the first, according to the old rule.

The question arose in cases: "We were vaccinated a very few years ago; ought we to be vaccinated this time?" In some of these cases I thought it would be very arbitrary to say, "yes."

A boy twelve years old, who had been vaccinated four years ago, I vaccinated; he had a blossoming sore with glandular enlargement in the axilla and embarrassment to movement of the arm.

A young lady who had had an active sore two years ago decided for herself that she would try it this year. She had a full characteristic sore.

The question arises here, although vaccine works in these recent cases, would smallpox find any lodgement in these persons? If it would we certainly must revise the old teaching in regard to this. I rather think it would not, otherwise smallpox would claim more victims than it does. The books say a person vaccinated after puberty may expect to remain immune against smallpox the rest of his life. He is not immune against vaccinia very many years. (Rarely one is for life. Dr. Alonzo Clark was such a one.) I was vaccinated in January—in 1860, 1871. During my professional life it has been my rule to vaccinate myself every time I fell in with smallpox; this has been in 1875—1881 and 1894; I think I vaccinated myself, also, in 1884. It works on me every time. I vaccinated myself three times last January. At the second and third, insertions were made before the first had spent itself, and were done merely to make as much of it as possible; nothing can be judged as to their individual impression—all these worked, the degree corresponded to the order of insertion. I did not have the least embarrassment to the movement of the arm, not the least glandular enlargement or tenderness.

The question likewise arises whether some of the alleged pox cases of Ireland may be immune to smallpox, although not one I tried or heard of proved non-susceptible to vaccine.

One more subject in this connection has presented great interest for me. I hope to get some light on it to-day. I was taught that if a person who has been exposed to smallpox is vaccinated

at once, he may expect to have the vaccine neutralize the smallpox virus, as it works so much quicker, and escape the dread disease: also, that if a few days elapse between exposure to smallpox and vaccination, we may expect to escape. I am told that in West Winsted there were two cases that developed smallpox while they had very actively working sores from vaccination, and had the smallpox very severely too: and in New York there was one case of varioloid which developed during typical vaccinia. This person lost, at least, three days after exposure before vaccination.

I attended one case of smallpox last winter. He had been exposed to smallpox but did not know it for three days. He was not vaccinated until the fourth day after that, and it did not work. He had been vaccinated twenty years before; his attack was light. I did not see him until he had been sick three days. Eruption had not yet appeared, but there could be no doubt as to what was the matter. I at once isolated him, and carried on all things as though the eruption had made the diagnosis certain. One of the most important of these was to find out all the people who had, unwittingly, exposed themselves by coming to the house, and secure their successful vaccination. I discovered nine such people, some were vaccinated and working satisfactorily; some were vaccinated and not working; some had not been vaccinated. These last two classes I, as health officer, required to be vaccinated and to be inspected and re-vaccinated daily until there could be no doubt that the operation had been effective. I was resolved that no time should be lost for these people by waiting to see whether the first insertion would work. I was resolved that if vaccination could ward off smallpox for these people at a late day, they should escape it. By this system of daily vaccinations if the first insertion was inert, only one day would be lost if the second would prove active, or only two if the third should be the first to be active. One of these cases I vaccinated six times: not one insertion worked. He nursed the smallpox case (his brother), and did not take the disease. Another, (an alleged Ireland pox case), I vaccinated five times. The fifth day was the first day that any of the insertions made up to that day showed any irritation. That was the insertion of

the third day: still I made an insertion on this day to make the thing sure. There was no doubt on the sixth day that the man had vaccinia, every insertion worked. I am convinced that this repeated daily vaccination of exposed parties, until there is no doubt that they are affected, is the only reliable and rational procedure for such cases. I have had sharp criticism for this practice but it does not affect me any. The fact that makes a duck's back of me against this spray of criticism is that not one of these people took smallpox. This criticism amounted to derision, opposition and slander. I was charged with chopping up one man, and it was stated that I had amputated the arm of another. There is a dread of multiple insertions of vaccine lest the subject be made so many times sicker than he need be. Doctors in Germany don't hesitate to vaccinate a baby in seven places at once. Multiple insertions, under my observation and in my personal experience, do not make one any sicker than one does. True they may make the area of local inflammation a trifle larger, but it is ridiculous to consider these matters when one is aiming to cut off the incubation of smallpox.

SARCOMA OF THE KIDNEY—REPORT OF A CASE.

SAMUEL BERESFORD CHILDS, M.D., HARTFORD.*

November 26th, 1893, I was first called to see the patient whose history I am about to relate—a young man 21 years of age, very much emaciated; his feet, ankles and legs extensively edematous; his complexion sallow and almost cachectic and his facial expression haggard. His weight I should estimate to be less than 100 pounds, though in health he weighed 160 pounds. Eighteen months before he had had an attack of the mumps, followed by an orchitis, which had kept him in bed for a few days. While convalescing from the orchitis he first noticed blood in his urine, associated with a burning sensation during micturition and an increasing frequency of urination. The hematuria persisted for some time, disappearing wholly for a few days and then reappearing. Soon, in connection with the blood he noticed a yellowish sediment, which was undoubtedly pus and had persisted continuously from its first appearance until the time of my first visit. To complete the picture I have only to add that the patient began to lose gradually his flesh and strength, his calls to urinate came with increasing frequency, so that when I first saw him he could not retain his urine more than fifteen minutes, during either day or night.

About a year after the first appearance of hematuria he began to have a chill daily, followed by fever, and latterly by sweating, and naturally enough on the supposition that it was caused by malaria, quinine was ordered but afforded no relief. Soon his feet and ankles became edematous, making it difficult for him to walk, his strength was rapidly failing and relief was vainly sought from different doctors. All the usual remedies for irritation of the bladder were prescribed, his bladder was irrigated for several weeks, but everything failed to check the progress of the disease.

After hearing the above history, I knew that there was a collection of pus somewhere in connection with the genitourinary

*Read before the Hartford County Medical Association, April 19th, 1894.

tract. His temperature was normal on the morning of my visit, though in the afternoon of the same day it was 103°, pulse 120 and rather feeble. The tongue was very red, smooth and slimy and the breath had the peculiar sweet odor found in pyemia. I was unable to detect any organic trouble with the heart; there was a very slightly prolonged expiratory murmur at the apex of the left lung, associated with a dry squeak, which could be heard at any point on the front of the chest There was also slight tenderness on pressure in the right lumbar region, and a certain resistance of the muscles of the abdomen on the right side. Tenderness was present, also, in the left lumbar region, but less muscular resistance. Deep percussion of the right side of the abdomen revealed an area of dullness, extending about three inches below the line of liver dullness, and in the back the percussion note was flat from the crest of ilium to the line of the liver. An examination of the urine showed a specific gravity 10 25, acid reaction and 33% albumen; microscopically an abundance of pus-cells, some blood-corpuscles, large and small epithelial cells, a few hyaline and granular casts. I advised an exploratory incision over the right kidney to determine the seat of the pus and establish, if possible, an accurate diagnosis.

December 2nd. Drs. Wainwright and Mayer saw the case with me and approved of the line of treatment suggested. Accordingly the patient was anesthetized and an incision made measuring two and one half inches anterior to the spine, extending downwards and forwards four inches nearly parallel with the twelfth rib and about one half inch below it. After cutting through the muscles I opened a large perinephritic abscess cavity which discharged a quart of most foul-smelling pus. The cavity extended upward to the under surface of the liver. The kidney was palpated and found to be much enlarged. After thorough irrigation the cavity was packed with iodoform gauze and the patient put to bed to regain as much strength as possible before any operation for removal of the kidney should be attempted.

The edema of the lower extremities diminished largely, the appetite improved and the strength began to increase slowly. The highest temperature reached after the operation was 102°; the pulse remained at 90 for two days and then mounted up to

120 again. The appearance of the urine was practically unchanged, though the calls for micturition were much less frequent, the interval being lengthened to two hours. Some days the water was bloody but the pus, though diminishing in amount, never entirely disappeared.

About three weeks after the operation a cough developed, not severe but irritating, and without expectoration. The right thigh became inflamed and swollen and had a peculiar brawny feeling. The removal of the kidney was now suggested as affording the only hope for improvement. After mature deliberation the patient and his parents, while realizing that the operation might prove fatal, still considered that it was the only possible chance of life and were willing to take the risk.

Jan. 4, 1894, the kidney was removed, Drs. Wainwright, Mayer, Davis, Wolff, Hewitt and Partree being present. I extended the original incision forward three inches and backward toward the spine one inch, making in all, an opening of eight inches. The perinephritic fat had been entirely absorbed so that the kidney lay directly beneath the muscles. On the upper surface of the kidney was a softened spot which broke down while the mass was being manipulated and discharged considerable pus and cheesy material. Here, then, was the cause of the perinephritic abscess above described. The kidney was very adherent throughout its entire extent, the adhesions being separated slowly and with difficulty by the hand, and it extended downwards under the crest of the ilium. To afford more room an incision was made downwards to the crest of the ilium three and one half inches from the spine, nearly at right angles to the original incision, so that there was an irregular T shaped opening. After having separated all the adhesions which I could, I felt a firm band, that I could easily encircle with my finger, about three quarters of an inch in length and one half inch in thickness, but diligent palpation failed to detect any pulsation. On bringing it more fully into view, however, it was seen to be the pedicle; for the hilum of the kidney could be distinctly seen at the termination of this band. The pedicle was ligated in two places with strong silk and cut off in front with a pair of long artery forceps, one half inch anterior to the ligature. The kidney

was now easily extracted, leaving a large cavity completely isolated from all surrounding structures, and extended from the under surface of the liver down under the crest of the ilium, and was six inches in depth. A part of the capsule of the kidney remained adherent to the upper part of the cavity. As much as possible of this was removed and was one eighth of an inch in thickness. The peritoneal cavity had not been invaded during the operation.

After thorough irrigation with hot bichloride solution, the oozing was checked, the new incisions were sutured, the wound packed with iodoform gauze, and dressed in the usual way.

The operation lasted one hour and during that time only five drams of chloroform had been used. The patient was suffering from shock and was placed in bed surrounded by hot bottles and hypodermics of strychnine, caffeine and whiskey administered. He rallied after a time, came to consciousness and talked rationally with the family, but the long strain of eighteen months had so used up his vital forces that his recuperative powers had been entirely exhausted, and death ensued four hours after the completion of the operation.

The weight of the kidney is one pound and five ounces ; length, seven inches, transverse diameter at hilum three and one half inches ; entire posterior diameter at hilum four inches.

The kidney is lobulated and enlarged. In the superior and posterior portions of the organ is an oblique tear, the obliquity pointing downward and forward. The kidney itself presents a lobulated appearance, being divided into large lobules and looks not unlike the fetal kidney. The lobulated appearance at the hilum is very well marked. The capsule is only partially adherent and one sixteenth of an inch in thickness. A longitudinal incision made escaping the oblique tear that originally existed along the whole kidney, shows the organ to be entirely degenerated, the normal structure of the organ having entirely disappeared.

In place of the pelvis of the kidney we find an extensive deposit of the same material with which the organ is infiltrated. In the upper portion of the kidney the tissue is completely broken down and two abscess cavities are formed, one occupying the

whole of the upper lobe of the kidney about two and a half inches in length, by two inches in width; large enough to contain a hen's egg—the other just below it and near the cortex large enough to contain a pigeon's egg.

In the places formerly occupied by the medullary rays are isolated deposits of cheesy material which map out and separate the degenerated cortex somewhat markedly from the surrounding mass. These masses are unequally distributed and of unequal size. The whole organ looks not unlike the normal brain-tissue. There is nothing that looks like kidney structure in the whole mass.

Here and there throughout the whole organ are numerous small abscess cavities probably produced by sloughing of the softened down caseous material.

Sections of the organ demonstrate a round cell sarcoma.

"In this case the microscope shows that the normal structure of the kidney has entirely disappeared and that its place is taken by the pathological new formation. The organ has increased to three or four times its normal size, and is here and there broken down; large cavities having been formed which, during life, were filled with pus and debris. The sections of the mass, which I made, were stained with borax-carmine and mounted in dammar.

It was at first supposed that the case was one of renal tuberculosis, but histologically there is no sign of the latter affection. There are no "giant cells;" and sections properly stained with fuchsin do not demonstrate any bacilli tuberculosis. In the first slide the ordinary field of the normal kidney was seen to have entirely disappeared and in its place an enormous number of small round cell growths has taken its place. At the same time the small amount of connective tissue was very noticeable. The connective tissue of the capsule of Bowman was thickened and infiltrated with small spindle cells and in place of the normal glomerulus, numerous cellular elements were seen, presenting the appearance not unlike the nesting of the cells of carcinoma.

This pathological condition was well seen in the second slide where the glomerulus is elongated and distorted, being crowded with round cells, its capsule having been infiltrated with con-

nective tissue cells and greatly thickened. Here everything is converted into sarcomatous tissue.

The neoplastic tissue as shown in the third slide is quite interesting; a large portion of a tubule being seen with its epithelial lining intact, but at one end narrowed and at the other having entirely disappeared. In the upper portion of the field is seen a fibrous line which marks the remains of another tubule. Other tubules can also be observed, either partially intact or blended with the surrounding tissue, which has developed into extensive deposits of fibrous tissue, in which the cells are so crowded as to distort some of the round cells, whereby they present an appearance not unlike spindle-cells. This fibrous degeneration is shown in the fourth slide, where the sarcoma cells themselves have disappeared and connective tissue fibrils, with their spindle-cells can be observed." *

Surgery has made vast strides in operative measures in the past decade and the limit to the use of the knife with comparative safety has not yet been reached.

Exploratory incisions down to the kidney and even into the kidney itself can be done with our present knowledge of aseptic and antiseptic surgery with practically no danger to life. The position of the kidney renders it easy of access, no large blood-vessels to be feared, no peritoneum to be invaded; after the skin fascia and muscles have been divided the perirenal fat bulges into the wound which, when torn through with the fingers or dressing-forceps, leaves the kidney free to be palpated at will, aspirated or even opened. This enables us to establish an accurate diagnosis in cases of hydronephrosis, pyelonephrosis, calculus in the kidney or upper part of ureter, floating kidney, perinephritic abscess, cysts of the kidney, solid tumors of the kidney, and in cases of accident penetrating wounds of the kidney.

In the operation for the removal of the kidney, two methods present themselves, one in the lumbar region, known to us as the lumbar operation, the other by laparotomy. While the

* For the above pathological report and photographs of microscopic slides, I am indebted to Dr. A. J. Wolff, of this city; also, for the microscopical report appended. Dr. Wolff's painstaking work and exhaustive report have added very much to the interest of the case.

fatality due to the removal of the kidney through the abdominal cavity is greater than by the lumbar method, still we must consider that, in all probability, the cases were more grave at the start from having a larger tumor to be removed and one probably which could not have been removed by the lumbar operation without invading the peritoneal cavity also. Mr. Tait says, "the kidney is best reached by the most likely looking road." To those of you not familiar with the lumbar operation I will detail the steps. The patient is either placed in the prone position, or Trendelenburg's position, the latter diminishing the liability of hemorrhage. If in the prone position a pad or pillow should be placed under the abdomen to make the lumbar region as prominent as possible. The location of the twelfth rib should be accurately defined and the incision made from one half to one inch below and nearly parallel to it, commencing from two to two and one half inches anteriorly to the spine and extending as far forwards as the case seems to demand; generally from four to eight inches. After the division of the latissimus dorsi, external oblique, internal oblique and transversalis muscles and the lumbar fascia, the perinephritic fat will bulge into the wound unless, as in the case I have reported, it has been entirely absorbed, when the capsule of the kidney will present; the kidney is, generally, shelled out of its capsule, the pedicle ligated and the kidney removed.

There are several points in the operation which demand especial care and attention. These are the prevention of hemorrhage, the ligation of the pedicle and the treatment of shock.

One of the first requisites for combating hemorrhage is to leave a sufficiently large incision to be able thoroughly to see every bleeding spot. If the bleeding is arterial, of course artery forceps and ligatures or clamps are required. If it is a general oozing, by thoroughly keeping the cavity, which has been freed from adhesions, packed with iodoform gauze, the hemorrhage, unless very excessive, will quickly be stopped. Dr. Abbe especially recommends the Trendelenburg position for the prevention of hemorrhage, as by this means the veins are kept continually drained.

The second point, the treatment of the pedicle. If a suffi-

ciently long pedicle can be found, it should be ligated, a double ligature generally being used when admissible, the end of the ureter being disinfected by pure carbolic acid. If the pedicle is too short for a ligature, the clamps may be used and left in situation for several days without a ligature.

For the prevention of shock, keeping the limbs of the patient well wrapped with blankets or bandaged with cotton during the operation and after its completion, surrounding the patient with hot bottles, administering hot rectal injections of brandy, black coffee or saline solution and the hypodermic use of strychnine, digitalis, caffeine, brandy and other stimulants, afford the best means at our disposal.

SYMPTOMS OF MALIGNANT DISEASE OF THE KIDNEY.

"The symptoms of a malignant disease of the kidney, whether it be carcinomatous or sarcomatous, are mainly three: the presence of an abdominal tumor, hematuria, and pain.

1. The *tumor* has the usual characters of tumors seated in the kidney. It occupies the one side of the abdomen, having its center opposite the lumbar region, between the lower ribs and the iliac crest. It often bulges into the loin, and one can move it slightly forward by pressing the loin with one hand, while the other is placed over the front of the abdomen. It does not descend during inspiration, and the fingers can be inserted between it and the rib cartilages, showing that it is not seated in either the liver (if on the right side) or the spleen (if on the left side). It is sometimes perfectly smooth and uniform, sometimes more or less uneven or lobulated.

Overlying it in front there is commonly a part of the colon, the hepatic or the splenic flexure, according to the side affected, which either may be felt as a ridge, bending nearly at a right angle, or may be traced by its tympanitic percussion sound contrasting with the dull sound obtained elsewhere. Sir Spencer Wells has proposed, in doubtful cases, to inflate the rectum with air, so as to render the position of the bowel more conspicuous. In one case that I saw several years ago, besides the colon, I could feel several coils of small intestine in front of the growth: they were freely movable, and could be made to slip away from

beneath the finger under manipulation. Dr. Roberts relates a remarkable case in which not only the stomach was made out during life to lie in front of a cancerous left kidney but the spleen could be distinctly felt as a separate mass in the iliac fossa, lying over the lower and inner part of the tumor.

Mr. Holmes has recorded a case in which a malignant growth of the kidney pulsated and was attended with a bruit, so that an aneurism was suspected. There often is considerable distension of the superficial abdominal veins. This probably may be due to compression of the inferior vena cava by the tumor, or by enlarged glands. But in many instances the growth fungates into the renal vein, and it may even protrude into the cava so as to narrow its calibre. A further result of such conditions is that the feet and legs become edematous; and Rindfl·isch speaks of embolism of the pulmonary artery as being sometimes caused by detachment of portions of the cancerous thrombus. In a case that was observed at Guy's Hospital in 1871, the disease made its way into one of the veins of the colon, and then into the portal vein and its branches within the liver; the result was the occurrence of ascites in a large amount.

2. *Hematuria.* Hematuria is by no means a constant symptom. Ebstein found it in about twenty eight out of fifty-two cases collected by him. Very often it is the earliest indication that anything is amiss with the patient. Sometimes it is directly brought on by a blow or a fall. It may recur again and again at irregular intervals for a considerable time before a tumor can be detected. It is then apt to be set down to a renal calculus, but one distinction is that the hæmaturia is not generally attended with a marked increase or aggravation of the pain. In many cases the bleeding comes from portions of the growth that protrude into the pelvis of the kidney. But in other instances its source is from a tumor within the cortex of the kidney, and if such is the case tube-casts containing blood-corpuscles may, doubtless, be found in the urine, as is stated by Ebstein.

3. *Pain* produced by a malignant tumor of the kidney is very variable in degree; sometimes it is altogether absent. Its usual seat is in one lumbar or hypochondriac region, but it may radiate widely over the chest to the front of the abdomen, or to

the crista ilii, and even down the thigh. It may be either constant, dull, aching or paroxysmal, sharp and cutting in character. Sometimes there is much tenderness to pressure. The pain is seldom, if ever, attended with retraction of the testicle, in which respect it differs from the pain due to calculus. If, however, clots of blood formed in the pelvis of the kidney should become impacted in the ureter, the pain may assume a different character and become exactly like that which accompanies a renal colic.

Other symptoms that may be present in cases of malignant growth in the kidney are anorexia, nausea, vomiting, and constipation or diarrhea.

In children, however, it is said that there is, sometimes, a voracious appetite with great thirst. The patient becomes usually rapidly wasted, anemic, and cachectic. The temperature remains normal or subnormal, and the pulse may be unduly slow.

"It can readily be understood from the foregoing description that the diagnosis of malignant disease of the kidney is often difficult or even impossible."*

Sarcoma of the kidney occurs most frequently in children under five years of age, and in adults over sixty years of age, although cases have been reported at intervening ages.

The modern pathological view of these tumors is that they must have existed somewhere in the renal substance from birth, even though they may not develop till later life. They may originate from the kidney structure itself, from the capsule of the kidney, the ureter or suprarenal capsule. When the tumor commences to enlarge, it is capable of taking on a most rapid growth so that tumors of from thirty to forty pounds have been reported in a very short time. Dr. Abbe of New York city reports a case in which the growth weighed seven and a half pounds after only six weeks duration. The treatment consists in the removal of the growth, unless the disease has passed beyond the limits of surgical interference, when making the last days of the sufferer as comfortable as possible is all that remains to be done.

The earlier the operation is performed after the development of the growth, the better the chances of non-recurrence.

*Fagge.—Vol. 2, pages 510 511.

The mortality from operations for sarcoma is at present 50%, but the great majority of cases surviving the operation died from recurrence of the disease within a year.

Sigrist collected sixty-four; thirty-two died from operations; nine had recurrence at end of one and one half years; five continued well at two years, and one at four years.

Barth of Marburg reports up to June 8, 1892, the collected statistics of one hundred nephrectomies for malignant disease, the largest which had been collected to that time, forty-two of whom died from operation; twenty from metastases, and thirty-eight were cured, although this word cured has to be greatly modified as the subsequent history of many of them has not been reported.

In a paper read before the New York Surgical society, Nov. 8, 1893, Dr. Robert Abbe of New York city reports three cases of sarcoma of the kidney which had been operated upon by him.

One was in a child two years old: duration of disease five months. The tumor weighed two and one quarter pounds and the child was in perfect health one and one half years after the operation and he says a fine red complexion has replaced the sallow, almost cachectic, one at the time of the operation, and a careful examination fails to reveal any trace of neoplasm.

The second case was in a child one year and two months old: duration of growth six weeks. The tumor in this case weighed seven and a half pounds, the child after the operation weighing fifteen pounds. In this case the part of the kidney above the pelvis was amputated as the growth only apparently involved this part. The stump of the kidney was sutured—child in perfect health one year later.

The third case was in a man sixty-five years of age. The tumor was of five months duration, weighed over three pounds; but this case, as in the case just reported by me, first rallied from the shock of the operation, but twelve hours after its completion sank rapidly and died.

The question that presents itself to us as surgeons and one that must be decided upon according to the symptoms present, duration of disease, etc., in each particular case, is this:

Knowing that the mortality from the operation alone is 50%,

as just stated, and that the vast majority of children operated upon die from a recurrence of the disease in less than a year, is it advisable to subject them to a capital operation? With adults it is somewhat different, as statistics show that with them the liability to recurrence is not as great.

I cannot express my views better, than to quote from Dr. Abbe's paper above referred to:

"The question of advisability of operation is not always the same as one of curability of the disease, either to the patient in whose breast the exhilarating sentiment of hope will always be found or to the surgeon who may yet hope to perfect methods and results which will alter the discouraging statistics.

If this were not so why do any of us continue to remove mammary cancers? Is not the improvement in operative work and results in malignant disease of the breast a sufficient reason why we should endeavor to improve the technique of nephrectomy and save at least many of the 50% mortality from operation alone? Even if the cured cases can be spared to three years of happy and useful life, as illustrated by Dr. Keyes case, who enjoyed good health and was in active business, or if the children can be snatched from the grave to have the roses come back to their cheeks for a year or two to gladden their parents, it still seems to me a justifiable operation."

GUNSHOT WOUND OF SUBCLAVIAN ARTERY AND VEIN.

E. P. SWASEY, M.D., NEW BRITAIN.

Shortly after ten o'clock in the evening of Dec. 22nd., 1892, John R., aged thirty, American, and farmer by occupation, while walking along a highway in the town of Berlin, was murderously assaulted by Martin W., the weapon being a double-barreled shot-gun loaded with double B shot, the charge containing about forty-five of these shot.

At the time of the assault, the men were standing in the opposite wheel-tracks and facing each other, so that when the gun was discharged, being held at the shoulder of W., the muzzle was in close proximity to R.'s person. As intimated by W.'s words the gun was aimed at R.'s heart and the intent was to kill, then and there. Immediately after the discharge, W. turned and walked away, and R., who is uncertain whether he fell, was assisted to the nearest house by two men, the house being several rods distant. A pool of blood in the roadway would indicate that R. fell.

On reaching the house R. was laid upon a lounge and fully an hour later Dr. Ensign, of Berlin, was in attendance. It could not be correctly estimated how much blood the man had lost, but the pool in the roadway and the front of the clothes which were more or less saturated to the feet, besides that which was undoubtedly lost on the way to the house, sufficiently indicate that the hemorrhage was a severe one. The doctor, on his arrival, assisted in placing the patient on a cot bed and then packed the wound with cotton and persulphate of iron. This was the treatment, locally, to Dec. 27th., aside from means to allay fever and pain, when I saw him in consultation.

The surroundings were most unsanitary. The patient was lying on a dirty cot placed in a ten by twelve room, otherwise filled and occupied by a dining table, cooking stove, lounge and chairs and six or eight of the neighbors. The air, which evi-

dently had not been refreshed since its present occupancy, was heavy with the nauseating odor of purulent infection.

The patient, lying on his back, was bathed in perspiration, with a pulse of 140 and sublingual temperature of 103°. Hemoptysis, which was profuse at first, still continued and the patient suffered from severe dyspnea. The wound, circular in shape, with blackened edges, and the size of a silver dollar, was immediately below the center of the left clavicle, its course directly backwards, as indicated by the relative position of the two men and the probe, and extending into the subscapular region. The back of the shoulder was swollen, red and tender, giving deep fluctuation. The left arm was completely paralyzed in motion and sensation, and entirely pulseless. Careful examination gave no indication of pulse from axilla to wrist, yet the arm did not vary in warmth, color or appearance from the other parts.

Examination of the chest on left side revealed entire absence of respiratory sound and dullness on percussion at the back, while in front the respiratory murmur was questionable and percussion gave a tympanitic sound.

The inference was that the lung, brachial plexus, subclavian artery and vein were involved in the wound. It was decided to make a counter opening at the back of the shoulder for drainage but this was delayed until the following morning on account of the lateness of the hour and the unfavorable surroundings. That night, accordingly, the patient was removed into an adjoining room which had been cleaned and prepared for him and which possessed the luxury of an open fireplace.

On Wednesday morning, the day following, the patient was etherized and an incision about three inches in length was made above the spine of capula extending through muscles and fascia, giving exit to a large quantity of fetid pus and disorganized blood. The finger inserted into the wound, found the shot imbedded in the subscapular muscle, a few of which were removed with the wad, but the condition of the patient giving me some uneasiness of mind, I deferred an attempt at further removal. Next I washed out the wound, from the front, backwards and then passed a piece of iodoform gauze through the

wound, carefully avoiding violence in so doing. I was alarmed immediately thereafter by the appearance of a profuse venous hemorrhage, proceeding directly from beneath the clavicle and at once packed the wound and maintained pressure against the clavicle and then I had a little time to deliberate. I next removed the gauze, with more hemorrhage, and tied the gauze, inserted for drainage, over the shoulder, compressing the veins against the bone and completely controlling the hemorrhage. At this juncture I decided to call for assistance and Dr. G. P. Davis came promptly to my aid, but it was 2 P. M. when he arrived. Then we were delayed by the ante mortem statement for another hour. Then we decided to cut in the usual way for ligation of the subclavian, for the condition of the wound precluded the possibility of distinguishing the vessel in the wound. This was done, the patient having again been etherized and the dissection carried below the omohyoid muscle, but no trace of artery or vein could be found, there being no pulsation to guide. Daylight was fading and artificial light to be efficient was not compatible with safety. I had not secured the vessel and the temporary resort was unsatisfactory. Incising the periosteum, I hastily separated it for a short distance around the entire circumference of the bone, passed a silkworm-gut ligature between the bone and periosteum and enclosed the entire mass in the ligature. The wound was then dressed. The patient continued to do well until the following Sunday evening. The incision afforded excellent drainage, and portions of shirts and coat were removed. At 10:40 Sunday evening I was summoned by telephone with the statement that R. was bleeding. All who were so unfortunate as to be out that night will remember that a storm of unusual severity was on hand, and to my mind a six mile drive with the purpose of arresting a hemorrhage did not appear a possibility. An hour later I was at the bedside. There was a flicker of pulse, the thick dressings were saturated as well as the mattress to a considerable depth. The wound was hastily exposed and hemorrhage was still going on, evidently from an artery, deep in the wound. Passing my finger into the wound I detected pulsation on the inner side, i. e. towards the median

line, and following the indication with a hemostasia I secured the bleeding point, but what it was I have never ascertained. For several hours I left the wound open and from that time no more bleeding occurred. The hemostasia remained on for a week when it came away. The patient showed signs of rallying within twenty-four hours from what was, apparently, a fatal collapse. The wound took on healthy granulation and cicatrization and the patient was able to sit up in about a month from the time of injury. A slight caries of clavicle was the result of denuding the bone. The arm atrophied, but at the present time the patient has regained his usual health and flesh, also some power over extensors and flexors of wrist and fingers. A faint pulsation may be detected at the wrist.

OBITUARIES.

His life was gentle, and the elements
So mix'd in him, that Nature might stand up,
And say to all the world, This was a man!

JULIUS CÆSAR, Act. v. Scene v.

HENRY BRONSON, M.D., NEW HAVEN.

BY S. D. GILBERT, M.D., NEW HAVEN.

Henry Bronson was born in Waterbury, Conn., January 31st, 1804. He was the son of Bennet Bronson, B.A., Yale, 1797, and Anna Smith Bronson. Bennet Bronson was a prominent citizen of Waterbury—a farmer and lawyer and President of the First National Bank. Dr. Bronson's mother was a native of Woodbury, Conn. One of her brothers was Nathan Smith, U. S. Senator from Connecticut. Another, Nathaniel Smith, was an able Judge of the Superior Court of Connecticut. She was also a cousin of Truman Smith, Yale, 1815, U. S. Senator from Connecticut. Henry Bronson therefore came of sterling New England stock. He received his early education in the public schools of Waterbury, and the degree of M.D., from Yale in 1827.

Dr. Bronson practised between two and three years in West Springfield, Mass., where he married Sarah Lathrop, daughter of a Massachusetts Congressman. He next opened an office in Albany, N. Y., where he became so prominent as a scientific medical man, that in 1833, during a visitation of Asiatic cholera, he was sent by the Governor of New York to Canada to investigate the causes of cholera, its mode of prevention, etc. After a stay in Albany of two or three years he returned to Waterbury, where he practised until he removed to New Haven in January, 1844. Dr. Bronson was Professor of Materia Medica and Therapeutics in the Yale Medical School from 1853 to 1860, and President of the Connecticut State Medical Society in 1869. He did not practise, generally, in New Haven but attended a few intimate friends. The Doctor was for the greater part of his life in New Haven, the student and writer. He was at one time, President of the New Haven County bank, but his chief delight was in study and research. His library contained two thousand five hundred volumes on all subjects. He had read every volume through once, and some of them several times. He wrote on Political Economy, and the Money Question, and

Colonial History. He was the author of a valuable History of Waterbury, published in 1858. He had written many biographies of prominent men, doctors and others, and particularly excelled in this work. He was a very honest man and writer—so much so that he never made out a man better than he was; indeed, he sometimes stated the defects of men so plainly, as to offend their relatives. Among many papers of which he was the author, may be mentioned three extended and important contributions to the papers of the New Haven Colony Historical Society, (An Historical Account of Connecticut Currency, 1865, pp. 192: Medical History and Biography, 1877, pp. 150; Chapters on the Early Government of Connecticut, 1882, pp. 116.) He had also written other papers for the Proceedings of the Connecticut Medical Society. Dr. Bronson was a man of great energy, and by careful saving and judicious investments amassed a large fortune.

He gave between the years 1873 and 1890 upwards of $80,000 to Yale University, to constitute a fund to provide instructors in comparative anatomy. He also gave $20,000 to the Waterbury Hospital, and $10,000 to the New Haven Hospital. He was blessed with unusual health, never having been confined to his bed until, in 1870 when he was operated on for stone in the bladder. Since that time he lived in retirement, and spent his declining days among his books and papers.

He died November 26th, 1893, in the ninetieth year of his age of cystitis and renal disease. Shortly before his death he became greatly interested in bicycle riding, and bought machines for all of his grandsons who would ride them; remarking that he might live to be a hundred years old if he could ride one himself.

Dr. Bronson had four sons—one of whom died in infancy. The other three were all graduates of Yale, one of Yale College 1855, another of the Sheffield Scientific School 1856, and the third a graduate of the Medical School in 1866.

DAVID CRARY, M.D., HARTFORD.

BY NATHAN MAYER, M.D., HARTFORD.

Last Monday morning, after a struggle of several months between his own stout vitality and the results of great age and of a busy life, Dr. David Crary, the oldest physician of this county, died, eighty eight years old. Dr. Crary was born in Wallingford, Vt., just eighty eight years ago to-day, of farming people, being the youngest of seven. He passed through district and high school, taught for a short time, and then studied medicine with his brother-in-law, Dr. John Fox, a surgeon of considerable repute. Ho graduated at Castleton, Vt., in 1834 and practiced for two years in Dorset, Vt. In 1838 he came to Hartford and associated in practice with Dr. Remington, then of great practice here. When this physician died Dr. Crary retained his practice and kept busy in it until 1861. Then he retired to Vermont to farm, fish and hunt, but returned hither in 1867 and continued practice till within five years of his death. During this time he assisted at the birth of over three thousand children. He was present with Dr. Beresford, at the removal of a tumor of the breast, when nitrous oxide gas was administered for a surgical operation for the first time in this state, preceding ether and chloroform; and, once, when on a sudden call he found a child suffocating, he plunged his thumb-lancet into the wind-pipe and pried the opening apart, thus giving air until, with assistance, the child could be further relieved and was brought to recovery later.

Dr. Crary was a man who typified some of the best traits of the New England country doctor of the past. He was quick to see and appreciate, and, by that unconscious reasoning which we call impression, to gain at once an idea of the ailment. Nor was he often amiss. His ready eye, used to observe every incident and at once to translate it into evidence, mastered the situation in an instant, and his old fashioned country—or horse—sense then provided the best means at hand to meet it. It was a rough-and-ready sort of practice, unconscious of hair line divisions and bacteria, but strong in clinical observation and

medical intuition. Above all it was regulated by a sharply trained judgment. New England farmers reason for themselves and the New England country doctor was never free from critical inspection. Dr. Crary exhibited great kindliness in dealing with his patients. He not only took into account their conditions of life and chance of opportunities and shaped his demands for the patient according to their power of performance, but he sympathized with them, took interest in their families, shared their hopes and fears, and became a staunch and helpful friend. There was nothing soft in these manifestations. They were practical, business-like, helpful, and his manner was short, direct and quick. He had a firm belief in his medicines and he impressed his patients with that feeling. Accordingly they were benefitted. He never troubled them with doubtful or fantastic diagnoses, they knew what they were suffering from and they knew that he knew—and were correspondingly at rest, and his practice was a successful one for half a century.

Dr. Crary was a great fox hunter and bagged many of the sly fellows, to his great satisfaction. Not the fanciful English fox-hunter, but our indigenous product, who, at earliest dawn, in the fierce cold crouched behind a tree to hit Reynard. He was also a great bird collector and sold a notable collection before his removal to Vermont. Dr. David Crary, Jr., of this city, one of our esteemed members, is Dr. Crary's son, and Edwin Crary, a highly reputable druggist of the city is another son. Still another son beyond these, Frank Crary, lives in Michigan.

During the late winter I went a number of times to see our old friend, then confined to his bed. He would rouse from a semi-torpor and at once jump into the old cheerful strain of chat, which we had kept up from buggy to buggy whenever we had met on the streets for nearly thirty years past, and any piece of medical news I could mention seemed to interest him. He often reverted to cases we had mutually known. He spoke cheeringly of his own condition and always manifested great pleasure in being visited. A long life, full of work, full of steady usefulness in his calling, without display, or celebrity, or great prominence, but which endeared him to a very great circle of patients and did the work of the profession honorably and successfully: long life, honored and appreciated. That is our friend's record.

RUFUS W. MATHEWSON, M.D., DURHAM.

BY MINER C. HAZEN, M.D., OF HADDAM.

Rufus Wellington Mathewson was born at Coventry, R. I., March 24th, 1814 and died at Durham May 5th, 1893, aged seventy nine years.

After the study of medicine with several different practitioners in the vicinity, he took one course of lectures at Yale and a second at the College of Physicians and Surgeons, New York, at which latter institution he received the degree of M.D., in 1835. He conducted a drug store in Norwich for about ten years, thence removed to Ledyard, where he practiced his profession until 1856, when he removed to Durham. Here for thirty-seven years he was the faithful servant of a large constituency in that and the adjoining towns, ready day or night to minister to the suffering and sick, whether rich or poor, high or low, black or white.

He was the oldest physician in our county and one of the older members of the Middlesex County Medical Association. He was one of the thirteen members of the State Medical Society who, at its centennial in 1892, were mentioned as "members who can boast of a continuous service of fifty years—names venerable and renowned among us." The members of this Association need no introduction to him who for so long a period has gone in and out at our meetings, never until his last sickness failing to attend every one of our regular gatherings. This grizzly, gray, short, stout, old man, his large head securely set on his broad shoulders, his kindly black eyes peering out under the shaggy eyebrows, with his plain, blunt speech, his wit and repartee, will be greatly missed at our meetings and his place cannot be filled.

By reason of his especial fitness and faithfulness, he was often appointed Reporter for the county. Being always abreast of the times he was well adapted to report what was new. He was quite apt to try new remedies. He frequently contributed some-

thing of interest for publication in the state society's Transactions and could forcibly express his views. Of especial interest in this line is his paper on the Cold Pack in Scarlet Fever and his sketches of the early members of the Middlesex County Association.

With apparent nonchalance, Dr. Mathewson was free to express his opinion on any subject and at any time or place, but as a practitioner he was cautious, not over confident, and realizing the grave responsibility of the situation, he discharged his duties to his patients with a conscientious regard to their welfare and his own accountability.

His drives were long and tedious but cheerfully made and his many benevolent acts, done without ostentation, will be long remembered by the people to whom he ministered.

He was active in all public affairs that promised good to the community. In educational matters he was the foremost man in the community. Rev. W. B. Clark, his pastor, says: "Durham still is full of the tradition of the old days of the Academy, when under the tuition of accomplished teachers the place ranked as an educational center for the region. Dr. Mathewson was the head and front of this movement." Also in temperance his position was decided. In one case, (a saloon keeper had resisted his private lectures and wore a defiant air), he coolly proceeded to collect evidence, had several complaints drawn, and gave him notice that he should the following day bring a prosecution, and follow it up each day until the nuisance was abated. The proprietor of the objectionable place, foreseeing trouble, collected his goods and with his family left the town in the night.

In politics he was a Democrat, and for years boasted that he was the only one in the county society. During the war, Rev. M. Page, the minister in the Congregational church, was so vehement in his utterances against southern sympathizers, that it was said he preached every Democrat out of his church excepting Dr. Mathewson; "*nobody could drive him out.*" Still he owed him no ill will but characteristically remarked that "Mr. Page and himself were the two honest men in town—they each spoke just what they thought." Notwithstanding his bluntness of

speech he was recognized as one of the most kind and benevolent of men. "He was one of the kindest of fathers," writes one of his daughters. The loss of his wife in childbed twenty-eight years before his death broke him all up, and he could never allude to her without evident emotion.

Dr. Mathewson left three sons and three daughters. His eldest son, Dr. Earl Mathewson, succeeds his father in the old home and practice.

HARVEY ELLSWORTH WAY, M.D., BRISTOL.

BY JOHN J. WILSON, M.D., BRISTOL.

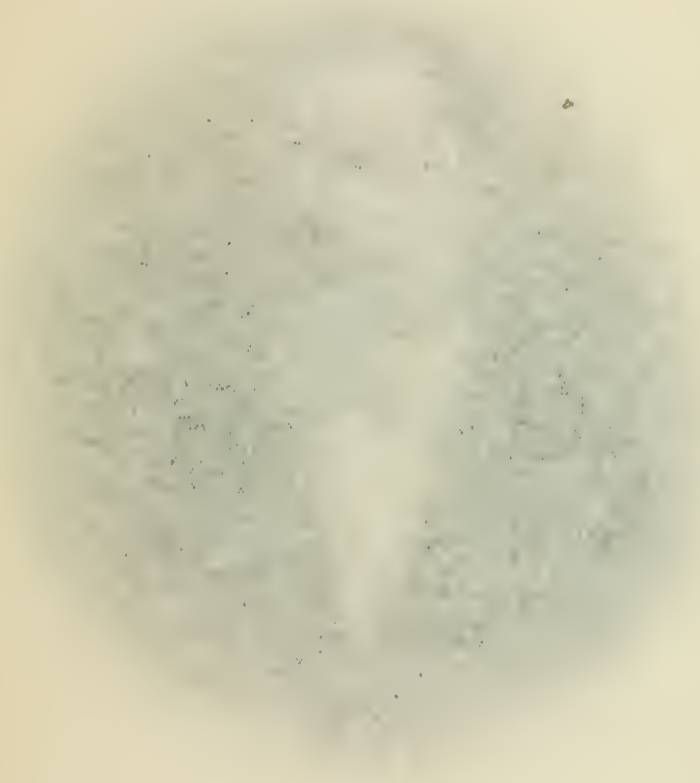
Dr. Harvey Ellsworth Way was born at Meriden, Connecticut, January 17, 1829. He died in Bristol, July 29, 1893.

Dr. Way received a common school education, and studied medicine under the instruction of Gardner Barlow, M.D., of Meriden, and John B. Newman of New York city. He was afterwards graduated from the Medical Department of the University of New York in March, 1849. He began practice in Westbrook, Conn., but soon after removed to Cheshire, Conn., where he remained until 1857 when he came to Bristol, and continued to practice there until shortly before his death. He became a member of the Connecticut Medical Society in 1850. During the last ten years of his life he suffered from heart trouble, and was gradually obliged to curtail his practice. For the last year of his life he was a great sufferer from his disease, which was pronounced by Doctors Loomis and Gouley of New York to be progressive ossification of the large artery of the heart.

Dr. Way had a large practice in Bristol and vicinity, and was universally esteemed by all who knew him. He was a great student all his life, especially in the branches of biology, chemistry, comparative anatomy, physiology, and the natural history of man, with the modern theory of transformation of energy. His library was large and full of choice works which were perused by him to an extent seldom practiced by active physicians.

He was held in high esteem by his fellow citizens, and received without his own seeking sundry evidences of it by his appointment to honorary offices. He shrank from publicity of any kind, but was a delightful companion in the society of his friends and acquaintances. His mind was of an analytical and agnostic cast, and his frankness and honesty, especially in his relations with his patients, were proverbial. He was charitable to a de-

gree, and most careful and conscientious in all his professional duties, and upright and honorable in all his dealings with men. His great delight was to engage in friendly controversies with his friends upon questions somewhat removed from the ordinary controversial contests of the day. His acquaintance was a pleasure to all who knew him while he was alive and he died regretted by the entire community.



Chas. W. Pinney M.D.

CHARLES HITCHCOCK PINNEY, M.D., DERBY.

Dr. Charles Hitchcock Pinney, who died of anemia at Evanston, Illinois, May 16th, 1893, was born at South Windsor, Connecticut, April 25th, 1831—son of Ebenezer Pinney of the firm "Hitchcock & Pinney," merchants of Hartford, Conn., and Richmond, Va., Mr. Pinney having in charge the Virginia department, as Eliakim Hitchcock, the senior partner, had of the house in Hartford. A short time previous to the birth of the subject of this sketch, Mr. Pinney was stricken with "Typhus Fever," which confined him to his bed ninety days, and so enfeebled him, that to regain his former health, he removed four miles out of Hartford to what was then East Windsor, but by division of the town in 1845, was named South Windsor, soon after severing his connection with the firm; never again entering into active business, although living until May, 1877, having nearly completed his eighty-third year.

Dr. Pinney was of Colonial descent. His ancestor, Humphrey Pinney, came with Rev. Mr. Markham's company in the ship "Mary and John" in 1630, settling at Dorchester, Mass., where he married Mary Hull, a fellow passenger of the ship. The next year he returned to England to administer the somewhat peculiar will of his uncle, Edmund Pynney, and also transact certain business relating to his own Somersetshire estate. (Papers relating to the same are at this time in possession of his descendants).

He removed to and settled in Windsor, (west side of Connecticut River), in 1635, his eldest child, Samuel, having been born at Dorchester in 1634. His grandson Samuel second, was one of the surveyors and settlers of Ellington, then a part of the town of Windsor, where some of his descendants have ever since resided, and where Ebenezer Pinney, the father of Dr. Charles H. Pinney, was born.

Dr. Pinney's earlier years were spent at South Windsor attending the District school and Lincoln Academy. Later he re-

ceived at Rogers Academy, East Hartford, his preparatory training for Harvard College, which he entered Sept., 1849, but did not graduate, as in the spring of 1851 he had several hemorhages. Feeling that the weakness of his lungs was aggravated by the piercing east winds of Boston, he decided upon medicine as a profession, and reading medicine with Dr. Horace C. Gillette that summer, entered in Sept., 1851, as private pupil of Drs. Robert Watts and Willard Parker of New York City. Graduated from College of Physicians and Surgeons, New York, in April, 1853, he located at once in Derby, Conn., where he practiced his profession forty years.

Early in his professional life he recognized the deleterious influence of sewer-gas; so much so, that it was often jocularly remarked by members of families who employed him, "When you send for Dr. Pinney, the first thing he does is to examine your sinks, and see if your traps are all right;" they feeling it a needless precaution.

In 1860, at the first appearance of diphtheria in Derby, his sister fell a victim in his own home; he then became convinced that it was a disease of the system rather than a local disease of the throat. The day of her death he remarked to a member of the family: "If I could commence with Mary's case now, I should in the first place give remedies to kill the poison in the blood." At once upon his return from having laid his sister at rest, he was called to a family where one had died a day or two previous, and then another was dying, and others of the family were sick. He said to Dr. Beardsley, then in attendance: "Kill the poison in the blood, they will die if you do not, and cannot do so if you do. I am convinced local treatment of the throat is distressing to the patient and doing but little good:" an article in the "American Journal of Medical Sciences," by Dr. Williamson recommending the same treatment, as well as the better success he had with his patients confirming him in his convictions.

Dr. Pinney was member of Local, County and State Medical Societies, also the American Medical Association for nearly forty years, and was an almost yearly attendant until within the past ten years. As time made inroads upon the members with whom he

was earlier associated, and those returning becoming few, their places filled by those "who knew not Joseph," his interest lessened, or as he expressed it: "There were many innovations contrary to his sympathies, or he had grown away from them." So for several years he had attended but rarely. When he left home, May 6th, 1893, one of its objects was to attend the meeting at Milwaukee. He had rooms engaged at the "Plankington," which he was destined never to occupy.

He had not only visited every state in our Union, several of the Canadian Provinces, and many European countries, (England, Ireland, Scotland, Wales, Norway, Sweden, and Denmark, Holland, Belgium, France, Switzerland, Germany, Austria and Italy). One of the attractions of all countries to him was its hospitals. He was intensely interested in the Rabies Institute of M. Pasteur, and whenever in Paris made many visits there.

He was artistic in his tastes, and he desired that his home be adorned with works that would be both restful and instructive.

On the 11th of Sept., 1892, his carriage was run down by an electric street car, dragging him some distance, and severely injuring him. Intestinal hemorrhages followed, one very copious on the train while on his westward journey. The loss of blood was so great that he was taken fainting from the train, and from which he never rallied, a few days later passing away.

ALFRED NORTH, M.D., WATERBURY.

BY WALTER L. BARBER, M.D., OF WATERBURY.

On November 17th, 1893, after a lingering and most distressing illnsss of mind, rather than body, died at Waterbury, Connecticut, Dr. Alfred North.

Alfred North was the son of Phineas and Louise (Wetmore) North, and was born in Torrington, Conn., October 5th, 1836.

He obtained his early education at the common school of the town, taking his preparatory studies at the Norfolk Academy, which fitted him for Brown's University, from which he graduated in 1859.

Early in his teens, he decided to study medicine and he now carried out his plan by beginning anatomy with Dr. Buel of Litchfield. After a few months of study, he entered the College of Physicians and Surgeons in New York city, with the privilege of assisting Dr. Gurdon Buck, Surgeon to the New York Hospital, in his office work.

Dr. North graduated from the College of Physicians and Surgeons in March, 1861, and in May was appointed a member of the House Staff at the New York Hospital. While there in 1861, there came an urgent call for army surgeons, which to him seemed imperative. He went to Washington and was immediately commissioned to surgical duties, under Surgeon-in-Chief Weir at a hospital in Frederick City, Maryland. After a few months service, the hospital was closed, and he returned to the New York Hospital and completed his term.

In 1863, he settled in Waterbury and soon won the respect and confidence of the community.

In 1881, his professional work having become so large, and its execution so severe, he admitted as partner Dr. Thomas L. Axtelle, and this partnership continued until just before he died.

Dr. North at the time of his death was President of the Waterbury Medical Association. He had been medical examiner for the town of Waterbury, as long as his health would allow, about twelve years. He was elected to the position of consult-

ing physician and surgeon on the staff of the Waterbury Hospital when it was opened. He was medical examiner for a dozen different Insurance Companies, and one of the medical directors of the Connecticut Indemnity Association. He was an active member of the New Haven County Medical Association, and the American Medical Association. Dr. North was surgeon to the New York and New England Railroad, the Naugatuck Division of the New York, New Haven and Hartford Railroad and for the Meriden-Cromwell Road, during its existence as a separate corporation.

Dr. North was married in September, 1863, to Miss Amelia Buck of New York city, who, with two daughters, survives him.

Dr. North was extremely devoted to his profession, and for many years in his early practice, he sacrificed ease, pleasure and all social life for the welfare of his many patients. To succeed in his profession was his ambition, and he devoted all his strength to this single purpose, and from the indefatigable strain, with the experience that such constant perseverance always brings, together with a cheerful temperament and exceedingly affable ways, was due the large and influential patronage that surrounded his office.

Reared in the country, tall and spare, his gait and manner were often awkward, but at the bedside this was all lost in the confidence his patients had in him, secured in part by his thorough investigation of even trivial points in their cases. The conclusion reached, and his opinion having been given, no amount of argument would change it; right or wrong, he was firm, almost obstinate.

In prescribing he was inclined to be a routinist, holding to the trodden paths, but in surgery, which he loved, he was always rather original, spending much time over the little things, great factors towards successful results. Thus he became an expert in this field, and was often called by other physicians in adjoining towns to perform, or advise, on the specialty.

Dr. North loved his profession, his town, and his home, and was always very loyal to his friends.

He was a member of the Waterbury Club, of the Republican party and the First Congregational Church. His business

methods were admirable. He possessed that rare trait, so seldom found in the medical profession, of knowing when and how to charge and collect his fee.

Never physically robust, he inherited a disposition of untiriug energy, which often led him into severer hardships than he could bear, and undoubtedly shortened a most prosperous medical career.

His friend, Clarence Deming, writes of him in the New York Sunday World:

"In the death of Dr. Alfred North of Waterbury, a newer and younger physician passes away, bnt one in the western part of the state not less prominent, and in his way a distinct and nnique type. A bold and versatile surgeon, enthusiastic in his profession, ceaseless in his toils and with busiuess acnmen as well, probably not a doctor who has lived in Connecticut, has condensed into thirty years, such a vast amount of varied professional work. Even iu later years when health left him, he persisted in labor, and was often at the bedside, when he onght better to have stayed at home.

His boundless push and energy brought some harsh contacts with his professional brethren, and as in the case of all positive and highly individualized men, begot some enmities and jealousies. But those who knew him best aud saw his keen ardor and the deep fidelity of his work and who count up now its fruits, will read in far different light, a life so beneficent to his race."

The following resolutions which were passed by the Waterbury Medical Association after his death, evidenced the esteem the members held for him:

Resolved, That the members of the Society, have learned with deep regret of the death of Dr. Alfred North, its President and most distingnished member. It is their desire to express here their irreparable loss, the loss not only of a faithful, efficient officer, bnt of a warm personal friend.

Resolved, That they extend to the family of the deceased, their heartfelt sympathy, and that they will ever nnite with them in cherishing his memory.

Resolveil, That a copy of these resolutions, be presented to the bereaved family, and that they be published in the Waterbury American.

WILLIAM HENRY THOMSON, M.D., FAIR HAVEN.

BY LEONARD J. SANFORD, M.D., NEW HAVEN.

Dr. William H. Thomson was born February 8th, 1840. His father was Dr. Charles Steele Thomson, a man of excellent character and exemplary life, who at the time of relinquishing active work in 1883, had practiced medicine with diligence and success in Fair Haven, Conn., and in all the surrounding country, for about sixty years.

Dr. W. H. Thomson's mother was Susan Coit Belcher, a woman of refined and cultured taste, who was very capable as a writer. She was familiar with the best authors of her time, and her correspondence was with persons of cultivation and character. But she was pre-eminently a mother; she lived for her children; and William received his earliest bent from her goodness and graciousness.

The family connections and the society of those who visited at his home were all of a quality to commend to his young mind, high-toned character and refined manners, and he came on into manhood regulated and controlled by the associations of his favored boyhood.

He was always popular with his associates, a favorite in school and with his teachers. Much of his earlier education was obtained at the celebrated military academy of Gen. Wm. H. Russell, where he not only made rapid strides in acquiring knowledge but increased and strengthened in the ambition of his early youth to pursue a military career.

When he was about seventeen years old, young Thomson was appointed to a cadetship at West Point, and his commission as a cadet was signed by Jefferson Davis, then United States Secretary of War.

During the time he was at this Military Academy he had as class-mate and room-mate the late General Upton, well known in military circles as the author of Upton's tactics; a warm friendship grew up between the two young men which continued unbroken until the death of General Upton.

Owing to excessive near-sightedness which incapacitated him for the duties of a soldier, Lieutenant Thomson reluctantly relinquished his cherished hope of a military career, and leaving West Point, he immediately began the study of medicine under his father's tutorage, afterwards entering the Yale Medical School, from which he graduated with honor in the year 1862.

On the breaking out of the war of the Rebellion, he was the first person in Fair Haven to enlist as a private soldier in the service of his country. His service was interrupted long enough for the completion of his medical studies, when, after obtaining the degree of Doctor of Medicine, he was returned to the army as assistant surgeon of the First Connecticut Heavy Artillery; afterwards he was promoted to the surgeoncy of the Second Regiment, C. N. G. At the close of the war he returned to Fair Haven and resumed the practice of his profession, which he continued uninterruptedly for about thirty years—until the time of his decease.

His kind and cheerful disposition and genial manners made him friends everywhere, and his practice steadily increased till it reached the limit of his time and strength. In the Fair Haven district there was hardly a family which had resided in it any length of time that had not employed him, and among a large number of these families he was their sole physician during his entire term of practice. His patients had great confidence in him as a healer and his counsel was considered the best; he was their friend as well as physician, a wise adviser and helper in times of doubt and discouragement.

Dr. Thomson was endowed with a large stock of common sense, hence he became a man of wise discretion; he was possessed of cheerful courage and kind-heartedness; he was very fond of his profession and loved mankind in whose behalf he practiced it; he possessed good powers of observation, and was discerning, pains-taking and conscientious in his work. He was also a student along the lines of scientific inquiry and research; when the day's work was done and he was not liable to be interrupted he pursued his investigations far into the night, and kept himself abreast of medical science and the rapid improvements in his profession; but he was not much taken by any-

thing that was merely speculative, he wanted soundness and proof and fact. While he was the studious, skilful and successful physician, he did not shine in medical associations, in open debate or in public discussion.

Dr. Thomson was married in June, 1867, to Miss Sophie Tomlinson of Birmingham, Conn., who survives him; no children were born to them. He died of Typhoid Pneumonia, October 18th, 1893, aged nearly fifty-four years.

On the occasion of his funeral, several hundred sorrow-stricken friends with tear-dimmed eyes, gathered to pay their last tokens of respect to his memory; they included the older and feebler people who had known him from boyhood, the young to whom he had often given wise counsel, the rich who had found in him a faithful physician and honorable gentleman, and the poor and humble into whose homes it had been his delight to bring comfort and sunshine.

He will long be remembered as the beloved physician, kind friend, genial companion and upright citizen.

JACOB MAYER FALK., M.D., NEW HAVEN.

BY GUSTAVUS ELIOT, M.D., NEW HAVEN.

Jacob Mayer Falk, eldest child and only son of Henrietta (Miller) and the late Mayer Falk, was born in Albany, New York, September 22, 1856. He graduated from the Albany High School, and in 1882 received the degree of Doctor of Medicine from the Albany Medical College. While a student he was assistant to Dr. Cyrus S. Merrill, Professor of Ophthalmology, and at graduation he was awarded the first prize in that branch. During the next three years he continued his medical studies at Würzburg, Vienna, Breslau and Berlin, devoting especial attention to diseases of the eye, ear and throat, but also taking courses in other departments of medicine. While abroad he secured the favorable notice of the distinguished specialists, under whom he studied, by the intelligent enthusiasm and untiring fidelity with which he performed his work.

Returning to New York city he spent a year as assistant to Dr. Herman Knapp. About 1886 he settled in Buffalo, N. Y., and devoted his attention to the diseases of the eye and ear. He became a member of the Medical Society of the County of Erie, and was attending surgeon in charge of the East Side Eye, Ear, and Throat Dispensary. In the Buffalo Medical and Surgical Journal for February, 1891, he published an article on "The Prevention of Purulent Conjunctivitis in the Eyes of New-Born Infants," which he had read before the Buffalo Medical and Surgical Association.

In the spring of 1892 failing health, due to overwork, caused him to give up his practice in Buffalo, and he came to New Haven, where his mother and sisters were living. During the summer his health improved. In the autumn he opened an office in New Haven and was elected a member of the Connecticut Medical Society. The following spring his health again began to fail, and he was obliged to entirely abandon practice. After a protracted illness he died of melancholia, at Poughkeepsie, New York, October 24, 1893, and was buried in Albany.

Of a retiring disposition, he loved books and study. He was proficient in anatomy and an excellent linguist. He was fond of music, and played well upon the violin. His gentle manner won him many friends, and his scientific attainments commanded great respect.

MEMBERS OF THE SOCIETY.

HONORARY MEMBERS.

OLIVER WENDELL HOLMES,	Boston, Mass.
GEORGE CHANDLER,	Worcester, Mass.
ANDREW JACOB FULLER,	Bath, Maine.
SAMUEL HAYES PENNINGTON,	Newark, N. J.
ARTHUR WARD,	Newark, N. J.
PAUL AUGUSTINE STACKPOLE,	Dover, N. H.
ADRIAN THEODORE WOODWARD,	Brandon, Vt.
WILLIAM McCOLLOM,	Brooklyn, N. Y.
BENJAMIN EDDY COTTING,	Boston, Mass.
SAMUEL THOMAS HUBBARD,	New York City.
GEORGE FIRMAN HORTON,	Terrytown, Pa.
AGRIPPA NELSON BELL,	Brooklyn, N. Y.
EDWARD CONSTANT SEGUIN,	Providence, R. I.
JOHN SHAW BILLINGS, U. S. A.,	Washington, D. C.
JAMES EDMUND REEVES,	Chattanooga, Tenn.
THOMAS ADDIS EMMETT,	New York City.
EDWIN MOTT MOORE,	Rochester, N. Y.
WILLIAM HENRY WELCH,	Baltimore, Md.
ROBERT FULTON WEIR,	New York City.
SIR JOSEPH LISTER,	London, Eng.
EDWARD G. JANEWAY,	New York City.
EDWARD R. SQUIBB,	Brooklyn, N. Y.
E. L. B STICKNEY,	Springfield, Mass.
DAVID WEBSTER,	New York City.
ALEXANDER J. C. SKENE,	Brooklyn, N. Y.

ACTIVE MEMBERS.

The Names of those who have been Presidents are in Capitals.

HARTFORD COUNTY.

GEORGE FRANCIS LEWIS, M.D., of Collinsville, President.

GEORGE K. WELCH, M.D., of Hartford, Clerk.

County Reporter—G. C. SEGUR, M.D., of Hartford.

Censors—M. STORRS, M.D., R. W. GRISWOLD, M.D.,

W. A. M. WAINWRIGHT, M.D.

Annual Meeting, Third Wednesday in April.

HARTFORD:

G. W. RUSSELL, No. 207 Farmington Avenue.
P. W. Ellsworth, No. 123 Pearl Street.
A. W. BARROWS, No. 189 High Street.
P. M. Hastings, No. 130 Capitol Avenue.
Henry P. Stearns, No. 190 Retreat Avenue.
Irving W. Lyon, No. 26 Buckingham Street.
MELANCTHON STORRS, No. 91 Ann Street.
Horace S. Fuller, No. 95 Trumbull Street.
John O'Flaherty, No. 116 Main Street.
Nathan Mayer, No. 268 Main Street.
William M. Hudson, No. 105 Elm Street.
George C Jarvis, No. 98 High Street.
W. A. M. Wainwright, "The Linden," No. 121 Main Street.
David Crary, No. 490 Main Street.
J. B. Lewis, No. 56 Prospect Street.
D. T. Bromley, No. 123 Pearl Street.
George P. Davis, No. 56 Prospect Street.
James Campbell, No 34 Congress Street.
C. E Froelich, No. 49 Pratt Street.
John Dwyer, No 19 Asylum Street.
Harmon G. Howe, No 51 Church Street.
W. T. Bacon, No. 3 Pratt Street.
W. W. Knight, No. 105½ Trumbull Street.
T. D. Crothers, Fairfield Avenue.
George L. Parmele, No. 25 Pratt Street.
Ellen F. H. Gladwin, No. 705 Asylum Street.
S. B. St. John, No. 26 Pratt Street.
George R. Shepherd, No. 32 Farmington Avenue.
F. S. Crossfield, No. 26 Pratt Street.
M. M. Johnson, No 74 Pearl Street.
William D. Morgan, No 238 Main Street.
J. F. Axtelle, No. 211 Main Street.
Noah Cressy, No. 214 Pearl Street.
G. K. Welch, No. 94½ Trumbull Street.

P. H. Ingalls, No. 112 High Street.
E. K. Root, No. 238 Main Street.
L. A. Davison, No. 3 Pratt Street.
John Howard, No. 56 Trumbull Street.
C. D. Alton, No. 3 Pratt Street.
Oliver C. Smith, No. 40 High Street.
Joseph E. Root, No. 49 Pearl Street.
William Porter, Jr., No. 391 Allyn Street.
J. J. Morrissey, No. 643 Main Street.
Frederick T. Simpson, No. 122 High Street.
George R. Miller, No. 85 Trumbull Street.
Charles C. Beach, No. 199 Main Street.
G. C. Segur, No. 67 Farmington Avenue.
G. C. Bailey, No. 65 Church Street.
A. E. Abrams, No. 78 High Street.
C. E. Taft, No. 98 High Street.
S. B. Childs, No. 18 Pratt Street.
Thomas F. Kane, No. 141 Main Street.
A. J. Wolff, No. 71 Capitol Avenue.
A. G. Cook, No. 164 High Street.
Mrs. L Darnstadt Kean, No 15 Pleasant Street.
E A Down, No. 190 Retreat Avenue.
Daniel F. Sullivan, No 64 Church Street.
J. Henry Cahill, No 55 Church Street.
E. J. McKnight, No. 370 Asylum Street.
B. S. Barrows, No. 78 High Street.
H. W. Murlless, No. 36 Church Street
M. A. Bailey, No. 65 Church Street.
George N. Bell, No. 65 Church Street.
Frank L. Waite, No. 26 Pratt Street.
Charles S. Stern, No. 268 Main Street.
Oliver K. Isham, No 44 Church Street.

BERLIN :
R. E. Ensign,
Charles A. Gillm.

BRISTOL :
J. J. Wilson,
W. W. Horton.

BURNSIDE :
F. H Mayberry.

CANTON—Collinsville :
G. F. Lewis.
I. F. Barnes,
Ida Rachel Gridley,
William H. Crowley,
George L. Woods.

EAST HARTFORD :
E. H. Griswold,
T. J. O'Connell,
W. G. Murphy,
*C. A. Fox.

EAST WINDSOR—Broadbrook
H. O. Allen.

Warehouse Point :
P. H. Sellew.

ENFIELD—Thompsonville
Edward F. Parsons,
Rial L. Strickland,
George T. Finch,
John F. Dowling,
Henry G. Varno.

FARMINGTON :
Frank Wheeler.
Charles Carrington.

GLASTONBURY :
H C. Bunce,
C. G. Rankin.

South Glastonbury :
H. M. Rising.

HAZARDVILLE :
S. W. Houghton.

MANCHESTER :
F. H. Whiton.
J. T. Dooley.

*Exempted from taxation

South Manchester:
J. N. Parker,
W. R. Tinker,
T. H. Weldon.

New Britain:
*B. N. COMINGS,
George Clary,
E. B. Lyon,
J. S. Stone,
Erastus P. Swasey,
M. J. Coholan,
G. J. Holmes,
L. M. Cremin,
W. T. Bunnell,
Samuel Wellington Irving,
John Baptist Poyer,
J. F. Donahue,
H. Doutteil,
R. F. Brown,
T. G. Wright.

Plainville:
J. N. Bull.

Rocky Hill:
R. W. Griswold,
H. B. Plunkett.

Simsbury—Tariffville:
Charles Wooster.

Southington:
I. P. Fiske,
G. W. Steadman.

Suffield:
J. K. Mason,
M. T. Newton,
Philo W Sweet.

Wethersfield:
A. S. Warner,
*Roswell Fox,
Edward G. Fox,
Arthur Wayland Howard.

Windsor:
*S. A. Wilson,
Newton S. Bell,
J. A. Coogan.

Windsor Locks:
S. R. Burnap.
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NEW HAVEN COUNTY.

JOHN F. LUBY, M.D., of New Haven, President.
O. J. D. Hughes, M.D., of Meriden, Vice President.
Joseph H. Townsend, M.D., of New Haven, Clerk.
County Reporter—O. T. Osborne, New Haven.
Censors—C. S. Rodman, M.D., J. P. C. Foster, M.D., W. H. Zink, M.D.

Annual Meeting, Third Thursday in April: semi-annual, third Thursday in October.

New Haven:
David L. Daggett, No. 60 Wall Street.
S. G. Hubbard, No. 23 College Street.
C. A. LINDSDLEY, No. 15 Elm Street.
John Nicoll, No. 86 Broadway.
Moses C. White, No. 48 College Street.
Leonard J. Sanford, No. 216 Crown Street.
F. L. Dibble, No. 257 Church Street.
T. H. Bishop, No. 215 Church Street.
FRANCIS BACON, No. 32 High Street.
W. L. Bradley, No 203 Crown Street.
A. E. Winchell, No. 60 Pearl Street.
Robert S Ives, No. 247 Temple Street.
Evelyn L. Bissell, No. 308 Crown Street.
Arthur Ruickoldt, No. 71 Olive Street.
Walter Judson, No. 1145 Chapel Street.
D. C. Leavenworth, No. 75 Howe Street.

*Exempted from taxation.

Frederick Bellosa, No. 209 Orange Street.
S. H. Chapman, No. 193 Church Street.
J. P. C. Foster, No. 109 College Street.
F. O. White, No. 514 Howard Avenue.
W. H. Carmalt, No. 87 Elm Street
M. A. Cremin, No. 129 Olive Street.
T. H. Russell, No. 137 Elm Street.
F. H. Whittemore, No. 13 Elm Street.
C. P. Lindsley, No. 37 Elm Street.
H. Fleischner, No. 928 Grand Avenue.
M. Mailhouse, No. 151 Meadow Street.
M. C. O'Connor, No. 882 State Street.
A. W. Leighton, No. 215 York Street.
Charles E Park, No. 132 Olive Street.
F. E. Beckwith, No. 139 Church Street.
Gustavus Eliot, No. 209 Church Street.
J. E. Stetson, No. 106 High Street.
J. F. Luby, No. 667 Grand Avenue.
William W. Hawkes, No. 35 High Street.
Frank H Wheeler, No. 221 Crown Street.
Herbert E. Smith, Medical College.
Benjamin L Lambert, No. 358 Howard Avenue.
Clarence L. Fitch, No. 163 Wooster Street.
F. W. Wright, No. 48 Pearl Street.
S. D. Gilbert, No. 29 Wall Street.
Edward K. Roberts, No. 244 Grand Avenue.
Oliver T. Osborne, No. 252 York Street.
Lucy M. Peckham, No 145 Green Street.
William G. Daggett, No. 189 Church Street.
Louis S. DeForest, No. 54 Wall Street.
Henry L. Swain, No. 238 York Street.
Mary B. Moody, Sherland Avenue, Cor. E. Grand Avenue.
E. G. Madden, No. 228 Congress Avenue.
G. F. Converse, Junction Whalley Ave. and Goffe Street.
J. H. Townsend, No. 93 Howe Street.
T. M. Cahill, No. 227 Franklin Street
C. J. Foote, No. 305 Howard Avenue.
Marvin Smith, No. 4 Pearl Street.
S. J. Maher, No. 212 Orange Street.
Jay W. Seaver, No. 233 York Street.
Louis B. Bishop, No. 77 Whitney Avenue.
H. W. Ring, No. 46 Elm Street.
W. C. Welch, No. 44 College Street.
A. O. Baribault, No. 400 Grand Avenue.
J. F. Baker, No. 695 Grand Avenue.
Rollin McNeil, No. 149 Bradley Street.
Edward M. McCabe, No. 383 Howard Avenue.
James M. Reilly, No. 337 Cedar Street.
Clarence E. Skinner, No. 318 Orange Street.
N. R. Hotchkiss, No. 150 Shelton Avenue.
Benjamin A. Cheney, No. 40 Elm Street.
Charles A. Tuttle, No 129 Whalley Avenue.
Harry A. Elcock, No. 49 Dixwell Avenue.
Louis J. Gaynor, No. 159 Orange Street
Harry B. Ferris, No. 317 Crown Street.
Austin B. Fuller, No. 145 Olive Street.
Moses J. Husinsky, No. 537 George Street.
Edmund S. Thomson, No. 1079 Chapel Street.

Henry F. Klenke, No. 758 Grand Avenue.
Leonard W. Bacon, Jr., No. 294 Elm Street.
Paul S. Robinson, No. 164 Grand Avenue.
Arthur N. Alling, No 214 Crown Street.
A. W. Evans, No. 12 High Street.
R. A. McDonnell, No. 312 Elm Street.
E. P. Pitman, No. 52 Sylvan Avenue.
F. W. Pirritte, No. 20 Pearl Street.
W. H. Stowe.

Westville:
A. W. Marsh.

ANSONIA:
Edward W. Warren,
Louis E. Cooper.

BRANFORD:
C. W. Gaylord,
Walter Zink,
A. J. Tenny,
A. J. Varno.

CHESHIRE:
M. N. Chamberlin,
E. T. Cornwall.

DERBY:
Birmingham:
T. J. O'Sullivan,
F. N. Loomis,
R. M. Griswold,
Royal W. Pinney.

HAMDEN:
E. D. Swift,
†O. F. Treadwell.

MADISON:
*D. M. Webb.

MERIDEN:
*Asa H. Churchill,
C. H. S. Davis,
N. Nickerson,
A. W. Tracy,
E. T. Bradstreet,
Anna J. Ferris,
J. D. Eggleston,
Edward W. Smith,
O. J. D Hughes,
Ava H. Fenn,
E. W. Pierce,
B. D. Stone,
F. P. Griswold,
E. D. Hall,
H W. Delesdernier,
H. A. Meeks,
John L. Gartland,
William Galvin,
George A. Peck.

MILFORD:
*Hull Allen,
E. B. Heady,
E. C. Beach.

NAUGATUCK:
Frank B. Tuttle,
Thomas M. Bull,
Frederick A. Spring,
James W. Robbins,
William J. Delaney,
Edwin H. Johnson.

NORTH HAVEN:
R. B. Goodyear.

ORANGE—West Haven:
J. F. Barnet,
William V. Wilson,
Durell Shephard.

OXFORD:
Lewis Barnes.

SEYMOUR:
Frank A. Benedict,
Patrick F. Strapp.

SOUTHBURY:
Myron L. Cooley.

WALLINGFORD:
J. D. McGaughey,
C H. Atwater,
William S. Russell,
William P. Wilson,
Frank E. Condert.

WATERBURY:
Edward L. Griggs,
F. E. Castle,
E. W. McDonald,
Walter H. Holmes,
Walter L. Barber.
C. W. S. Frost,
F. M. Cannon,
Charles S. Rodman,
J. M. Benedict,
Thomas L. Axtelle,
Carl E. Munger,
Bernard A. O'Hara,
John F. Hayes,

†P. O. New Haven.

*Exempted from taxation.

WATERBURY
Caroline R. Conkey.
H. S. Wildman,
Nicholas J. Hanlon,
Augustin A. Crane,
Patrick T. O'Connor,
John D. Freney,
George C. Gay,
Charles A. Hamilton,
George O Robbins.

NEW LONDON COUNTY.

CHARLES E. BRAYTON, M.D., of Stonington, President.

JULIAN LAPIERRE, M.D., of Norwich, Vice President.

CHARLES B. GRAVES, M.D., of New London, Clerk.

County Reporter—CHARLES B. GRAVES, of New London.

Censors L. S. PADDOCK, M.D., WM. M. BURCHARD, M.D.,
F. N. BRAMAN, M.D.

Annual Meeting, first Thursday in April : semi-annual, first Thursday in October.

COLCHESTER :
Myron W. Robinson,
A. J. Crighton.

EAST LYME—Niantic .
Frederick H. Dart.

GRISWOLD—Jewett City :
George H. Jennings

GROTON :
Edmund P. Douglass.

LYME :
George W. Harris.

MONTVILLE :
*John C. Bolles,
Morton E. Fox.

Uncasville :
William M. Burchard.

NEW LONDON :
A. W. Nelson,
F. N. BRAMAN.
J. G. Stanton,
F. J. Beckwith,
J. E. Cronin,
Charles B. Graves,
Joseph R. Crofton,
Elisha Munger,
Hiram B. Thomson,
John N. Dimon.

NORWICH :
Lewis S. Paddock,
William Witter,
William S. C. Perkins,
Patrick Cassidy,
L. B. Almy,
Anthony Peck,
Julian LaPierre,
E. P. Brewer,
N. P. Smith,
Patrick H. Harriman,
W. K. Tingley,
W. T. Browne,
George R. Harris,
Charles H. Perkins,
Rush W. Kimball,
William A. Korn.

Taftville :
George Thompson.

Yantic :
Robert J. Henderson.

STONINGTON :
Charles E. Brayton,
George D. Stanton.

Mystic :
*Albert T. Chapman,
William H. Gray.

Mystic Bridge :
Frank A. Coates,
A. M. Purdy.

VOLUNTOWN :
Warren Russell Davis.

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*Exempted from taxation.

FAIRFIELD COUNTY.

WILBUR S. WATSON, M.D., of Danbury, President.
F. B. Baker, M.D., of East Norwalk, Vice President.
L. T. Day, M.D., of Westport, Clerk.
County Reporter—C. R. Hexamer, M.D., of Stamford.
Censors—A. E. Barbour, M.D., J. W. Wright, M.D.,
J. G. Gregory, M.D.

Annual Meeting, second Tuesday in April, at Bridgeport: semi-annual in October.

Bridgeport:

ROBERT HUBBARD, No. 254 State Street.
Andrew J. Smith, No. 85 Barnum Avenue.
GEORGE L. PORTER, No. 266 State Street.
Robert Lander, No 192 Fairfield Avenue.
Curtis H. Bill, No. 285 State Street.
N. E. Wordin, No. 174 Fairfield Avenue.
F. M. Wilson, No. 317 State Street.
T. F. Martin, No. 115 Golden Hill Street.
W. H. Bunnell, No. 130 Seaview Avenue.
Willis Cummings, No. 95 Colorado Avenue.
F. B. Downs, No. 256 State Street.
Mary J. Rising Young, No. 282 State Street.
W. C. Bowers, No. 242 State Street.
F. A. Rice, No. 91 West Avenue.
J. W. Wright, No. 229 State Street.
A. W. Lyons, No. 289 State Street.
A. A. Holmes, No 139 Fairfield Avenue.
Charles C. Godfrey, No. 254 State Street.
S. M. Garlick, No. 316 State Street.
Henry Blodget, No. 313 State Street.
J. C. Lynch, No. 252 State Street.
C. C. Hoyt, No. 623 State Street.
G. W. Osborn, No. 339 Broad Street.
J. R. Topping, No. 131 East Main Street.
B. W. White, No. 276 State Street.
Jacob May, No. 348 Broad Street.
F. C. Graves, No. 309 State Street.
G. B. Cowell, No. 120 East Washington Avenue.
C. N. Haskell, No. 254 State Street.
Frank L. Smith, No. 10 N. Washington Avenue.
George E. Ober, No. 129½ E. Main Street.
B. DeF. Sheedy, No. 311 State Street.
Russell T. Bishop, No. 343 State Street.
D. C. DeWolfe, 289 Fairfield Avenue.

Bethel:

A. E. Barber,
Anstin E. May,
Charles R. Hart.

Brookfield:

*A. L. Williams,
Junius F. Smith.

Danbury:

F. P. Clark,
A. T. Clason,

Danbury:

Wm. F. Lacey,
E. E. Snow,
E. A. Stratton,
W. S. Watson,
A. L. Scott,
William C. Wile,
D. Chester Brown,
W. F. Follansbee,
Richard Ellis,
H. F. Brownlee,

*Exempted from taxation.

DANBURY—*Continued:*
George R. Hawley,
John H. Benedict,
Nathaniel Selleck,
Clayton P. Bennett.
DARIEN—Noroton:
William F. French,
WM. G. BROWNSON.
FAIRFIELD:
W. H. Donaldson.
Greenfield Hill:
M. V. B. Dunham.
Southport:
C. H. Osborne.
GREENWICH:
W. L. Griswold,
T. M. Franklin,
Spencer Franklin.
HUNTINGTON—Shelton.
Gould A. Shelton,
D. A. Richardson.
MONROE:
John G. Stevens.
Stepney:
Seth Hill.
NEWTOWN:
Edward M. Smith.
Sandy Hook:
Dana P. Richardson.
NORWALK:
James G. Gregory,
R. L. Higgins,
S. H. Huntington,
William J. Tracey.
South Norwalk:
George W. Benedict,
W. C. Burke, Jr.,
A. N. Clark,
C. G. Bohannan.
East Norwalk:
Frederick B. Baker.
RIDGEFIELD:
Russell W. Lowe.
STAMFORD:
H. P. Geib,
A. M. Hurlbutt,
Samuel Pierson,
A. N. Phillips,
C. R. Hexamer,
P. P. Van Vleet,
F. H. Schavoir,
Wm. A. B. Treadway,
Lawrence S. Buckley,
F. P. Rogers,
C. S. Darby, Jr.,
E. J. Meeks,
Roswelle G. Philip,
James A. Meek.
STRATFORD:
W. B. Cogswell,
G. Fred. Lewis.
WESTON—Lyon's Plain:
F. Gorham.
WESTPORT:
George B. Bonton,
F. Powers,
Loren T. Day,
F. D. Rulund,
Daniel Gilbert.
WILTON:
A. B. Gorham. —102

WINDHAM COUNTY.

T. R. PARKER, M.D., of Willimantic, President.

F. A. MORRELL, M.D., of Putnam, Vice President.

W. H. JUDSON, M.D., of Danielsonville, Clerk.

County Reporter—CHARLES E. HILL, M.D., of East Killingly.

Censors—H. W. HOUGH, M.D., LOWELL HOLBROOK, M.D.,

W. A. LEWIS, M.D.

KILLINGLY :
Ashael E. Darling,
Henry F. Hammond.

Danielsonville :
Rienzi Robinson,
Nathaniel Hibbard,
W. H. Judson.

East Killingly :
Edwin A. Hill,
Charles E. Hill.

PLAINFIELD—Moosup :
William A Lewis,
Charles N. Allen,
E. H. Davis.

Central Village :
*Charles H. Rogers.

POMFRET :
Frederick G. Sawtelle.

PUTNAM :
*H. W. Hough,
John B. Kent,
F. A. Morrell,
Omar LaRue,
Warren W. Foster.
SCOTLAND :
J. Clifton Taylor.
THOMPSON :
LOWELL HOLBROOK.
WINDHAM :
F. E. Guild.
Willimantic :
Frederick Rogers,
T. MORTON HILLS,
*O. B. Griggs,
C. J. Fox,
T. R. Parker,
John Weldon,
James Jay Smith,
A. D. David,
C. H. Girard,
R. C. White. —30

LITCHFIELD COUNTY.

FREDERICK H. WIGGIN, M.D., of Litchfield, President.

ELIAS PRATT, M.D., of Torrington, Vice President.

JAMES T. SEDGWICK, M.D., of Litchfield, Clerk.

County Reporter—JOHN C. KENDALL, M.D., of Norfolk.

Censors—C. O. BELDEN, M.D., R. S. GOODWIN, M.D.

Annual Meeting, second Tuesday in October : semi-annual, fourth Tuesday in April.

CANAAN :
C. W. Camp,
F. H. Lee.
CORNWALL—West Cornwall :
J. A. Livingston.
Cornwall Bridge :
W. M. S. Curtis.
GOSHEN :
J. H. North.
LITCHFIELD :
C. O. Belden,
F. H. Wiggin,
J. T. Sedgwick,
John L. Buel,
William S. McLaren.
Morris :
E. B. Pike.

NEW HARTFORD :
Jerry Burwell.
NEW MILFORD—Gaylordsville :
H. B. Griswold.
NORFOLK :
John C. Kendall,
I. L. Hanmant.
PLYMOUTH—Terryville :
W. P. Sweet,
W. W. Wellington.
ROXBURY :
L. J. Pons.
SALISBURY :
H. M. Burtch.
Lakeville :
W. Bissell,
George H. Knight.

*Exempted from taxation.

SHARON :
W. W. Knight,
B. W. Munson,
C. W. Bassett.
THOMASTON :
Ralph S. Goodwin,
George D. Furguson,
J. W. Johnson.
TORRINGTON :
William L. Platt,
T. S Hanchett,
Elias Pratt.
WASHINGTON :
ORLANDO BROWN,
William J. Ford.
New Preston :
R. A. Marcy.
WATERTOWN :
W. S. Munger,
Eugene C. French.
WINCHESTER—Winsted :
E. L. Pratt,
W. S. Hulbert.
West Winsted :
John W. Bidwell,
E. H. Welch.
WOODBURY :
L. Y. Ketchum,
D. R. Rodger. —40

MIDDLESEX COUNTY.

FRANK B. LOOK, M.D., of Middletown, President.

JOHN E. BAILEY, M.D., of Middletown, Clerk.

County Reporter—

Censors—S. W. TURNER, M.D., GEORGE W. BURKE, M.D., FRANK B. LOOK, M.D.

Annual Meeting in April, at Middletown or Haddam.

CHATHAM—Middle Haddam :
Albert E. Worthington,
George N. Lawson.
East Hampton :
Albert Field
CHESTER :
Sylvester W. Turner,
Fred Sumner Smith.
CLINTON
Herbert S. Reynolds.
CROMWELL :
Winthrop B. Hallock,
Frank K. Hallock,
G. W. Lawrence.
DURHAM :
Earl Mathewson.
EAST HADDAM :
M. W. Plumstead.
ESSEX :
Charles H. Hubbard,
Willis A. Russell.
HADDAM :
Miner C. Hazen,
Selden W. Noyes,
H. C. Hazen.
KILLINGWORTH :
E. P. Nichols.
MIDDLETOWN :
George W. Burke,
F. D. EDGERTON,
Daniel A. Cleaveland,
James Olmstead,
Wm. E. Fisher,
C. E. Stanley,
J. N. Keniston,
H S. Noble,
M. D. Murphy,
F. B. Look,
*John E. Bailey,
A. J Campbell,
A. B. Coleburn,
J. Francis Calef,
Mary Harley,
G. E. Loveland,
Kate C. Mead.
OLD SAYBROOK :
J. H. Granniss.
PORTLAND :
C. A. Sears,
F. E Potter,
R. C. Downey.
SAYBROOK – Deep River :
Edwin Bidwell,
H. T. French.
WESTBROOK :
T B. Bloomfield. —43

*Exempted from taxation.

TOLLAND COUNTY.

FRANCIS L. DICKINSON, M.D., of Rockville, President.

Frederick Gilnack, M.D., of Rockville, Vice President.

W. N. Simmons, M.D., of Tolland, Clerk.

County Reporter—C. B. Newton, M.D., of Stafford Springs.

Censors—C. F. Sumner, M.D., E. P. Flint, M.D.,
W. N. Simmons, M.D.

Annual Meeting, third Thursday in April.

Bolton :
*CHAS. F. SUMNER.
Coventry :
William C. Haven.
South Coventry :
Henry S. Dean,
W. L. Higgins.
Ellington :
E. T. Davis.
Mansfield :
F. E. Johnson.
Rockville :
*Stephen G. Risley,
*Francis L. Dickinson,
Frederick Gilnack,
E. K. Leonard,
T. F. Rockwell,
Fred Walsh,
T. C. A. Lawlor,
E. P. Flint.
Somers :
A. L. Hurd.
Stafford—Stafford Springs :
C. B. NEWTON,
T. H. Rafftery,
F. L. Smith.
Tolland :
*W. N. Simmons.
Vernon :
A. R. GOODRICH. —20

*Exempted from taxation.

ALPHABETICAL LIST

OF THE

MEMBERS OF THE CONNECTICUT MEDICAL SOCIETY,

With date and place of Graduation, and Post-Office Address.

Name.	Medical Graduation.	P. O. Address.
Abrams, Alva Elnathan,	Albany, '81,	Hartford.
Allen, Charles Noah,	Univ. Vt., '81,	Moosup.
Allen, Howard Oliver,	Univ. N. Y., '79,	Broad Brook.
Allen, Hull,	Univ. N. Y., '21,	Milford.
Alling, Arthur Nathaniel, B.A., '86,	P. & S., N. Y., '91,	New Haven.
Almy, Leonard Ballon, B.A., '72,	Bellevne, '76,	Norwich.
Alton, Charles De Lancey,	Bellevue, '75,	Hartford.
Atwater, Caleb Huntington,	P. & S., N. Y., '71,	Wallingford.
Axtelle, John Franklin,	L. I. Coll. Hosp., '71,	Hartford.
Axtelle, Thomas Lincoln,	Bellevue, '81,	Waterbnry.
Bacon, Francis,	Yale, '53,	New Haven.
Bacon, Leonard Woolsey, Jr.,	Yale, '92,	New Haven.
Bacon, Wm. Turner, B.A., M.A., '68,	Univ. N. Y., '71,	Hartford.
Bacon, George Cornelius,	Univ. N. Y., '86,	Hartford.
Bailey, George Cornelius,	Univ. N. Y., '86,	Hartford.
Bailey, John Elmore,	P. & S., N. Y., '85,	Middletown.
Bailey, Michael Angelo,	P. & S., Balt., '93,	Hartford.
Baker, Frederick Birdseye,	Univ. Md., '88,	East Norwalk.
Baker, John Francis,	L. I. Col. Hosp., '89,	New Haven.
Baldwin, Edward Robinson,	Yale, '90,	Cromwell.
Barber, Alvin Elizur,	Berkshire, '54,	Bethel.
Barber, Walter Lewis,	Bellevne, '73,	Waterbnry.
Baribault, Arthur Octave,	Viet. Med. Col., '89,	New Haven.
Barnes, Irving Fergnson,	Univ. N. Y., '90,	Collinsville.
Barnes, Lewis, B.A., M.A, '47,	Buffalo Univ., '50,	Oxford.
Barnett, John Frederick,	Yale, '69,	West Haven.
Barrows, Ashbel Ward,	Yale, '41,	Hartford.
Barrows, Benj. Safford, Ph.B., '83,	Univ. N. Y., '87,	Hartford.
Bassett, Clarence Wheeler,	Univ. N. Y., '82,	Sharon.
Beach, Charles Coffing,	P. & S., N. Y., '82,	Hartford.
Beach, Edward Charles,	Yale, '88,	Milford.
Beckwith, Frank Edwin, M.A., '81,	P. & S., N. Y., '71,	New Haven.
Beckwith, Fred'k Jason, B.A., '78,	Harvard, '82,	New London.
Belden, Charles Ogilvie,	P. & S., N. Y., '82,	Litchfield.

In preparing this list the Secretary has followed the list in the Proceedings of 1892, made with great care and labor by Dr. J. B. Lewis for the Centennial year. It may be relied upon as being correct.

Name.	Medical Graduation.	P. O. Address.
Bell, George Newton,	Yale, '92,	Hartford.
Bell, Newton Stephen,	Univ. Vt., '64,	Windsor.
Bellosa, Frederick,	Yale, '72,	New Haven.
Benedict, Frank Allen,	P. & S., N. Y., '87,	Seymour.
Benedict, George Willis, B.A., '74,	P. & S., N. Y., '78,	South Norwalk.
Benedict, John Howe,	Conn. Med.Soc.,'58,	Danbury.
Benedict, John Mitchell,	Univ. N. Y., '82,	Waterbury.
Bennett, Clayton Powers,	P. & S., N. Y., '90,	Danbury.
Bidwell, Edwin,	Yale, '47,	Deep River.
Bidwell, John Welch,	Berkshire, '46,	West Winsted.
Bill, Curtis Harvey,	Univ. N. Y., '59,	Bridgeport.
Bishop, Louis Bennett, B.A., '86,	Yale, '88,	New Haven.
Bishop, Russell Tomlinson,	Bellevue, '93,	Bridgeport.
Bishop, Timothy Huggins,	Yale, '60,	New Haven.
Bissell, Evelyn Lyman,	Yale, '60,	New Haven.
Bissell, William, B.A., '53,	Yale, '56,	Lakeville.
Blodget, Henry,	Bellevue, '81,	Bridgeport.
Bloomfield, Thomas Blanch,	P. & S., N. Y., '76,	Westbrook.
Bohannan, Charles Gordon,	Univ. N.Y., '78,	South Norwalk.
Bolles, John Calvin,	Vt. Med. Col., '40,	Montville.
Bouton, George Beriah,	Y., '56; N. Y. M., '56,	Westport.
Bowers, William Cutler,	P. & S., N. Y., '77,	Bridgeport.
Bradley, Wm. Lockwood, B.A., '60,	Yale, '64,	New Haven.
Bradstreet, Edw'd. Thos., B.A., '74,	P. & S , N. Y., '77,	Meriden.
Braman, Francis Nelson,	Bellevue, '66,	New London,
Brayton, Charles Erskine,	P. & S., N. Y., '73,	Stonington.
Brewer, Edward Pliny, Ph.D.,	Dartmouth, '79,	Norwich.
Bromley, Daniel Tyler,	Yale, '67,	Hartford.
Brown, Dayid Chester,	Yale, '84,	Danbury.
Brown, Orlando,	Yale, '51,	Washington.
Brown, Richard Francis,	Yale, '92,	New Britain.
Browne, William Tyler, Ph.B., '78,	Harvard, '82,	Norwich.
Brownlee, Harris Fenton,	P. & S., N. Y., '88,	Danbury.
Brownson, William Greene, M.A.,	Univ. N. Y., '65,	Noroton.
Buckley, Lawience Stephen,	Dartmouth, '89,	Stamford.
Buel, John Laidlaw,	P. & S., N. Y., '88,	Litchfield.
Bull, John Norris,	P. & S., N. Y., '78,	Plainville.
Bull, Thomas Marcus,	P. & S., N. Y., '87,	Naugatuck.
Bunce, Henry Clinton,	Yale, '50,	Glastonbury.
Bunnell, Wilbur Pitkin,	Univ. N. Y., '84,	New Britain.
Bunnell, William Henry,	P. & S., N. Y., '79,	Bridgeport.
Burchard, William Metcalf,	Georgetown, '66,	Uncasville.
Burke, George Whitney, B.A., '39,	Yale, '43,	Middletown.
Burke, William Craige,	L. I. Col. Hosp., '75,	South Norwalk.
Burke, William Patrick John,	Yale, '90,	New Haven.
Burnap, Sidney Rogers, A.B., '58,	P. & S., N. Y., '62,	Windsor Locks.
Burns, Edward,	Univ. N. Y., '82,	New Britain.
Burtch, Harry Mercein,	Albany, '82,	Salisbury.
Burwell, Jeremiah,	Berkshire, '39,	New Hartford.
Cahill, Joseph Henry,	Balt. Univ., '92,	Hartford.
Cahill, Thomas Matthew,	Yale, '88,	New Haven.
Calef, Jeremiah Francis, B.A., '77,	Yale, '80,	Middletown.
Camp, Charles Welford,	Univ. N. Y., '75,	Canaan.
Campbell, Arthur Joseph,	P. & S., Balt., '85,	Middletown.

Name.	Medical Graduation.	P. O. Address.
Campbell, James,	Univ. Vt., '71,	Hartford.
Cannon, Frederick Miller,	Univ. N. Y., '67,	Waterbury.
Carmalt, William Henry, M.A., '81,	P. & S., N. Y., '61,	New Haven.
Carrington, Charles,	P. & S., N. Y., '60,	Farmington.
Cassidy, Patrick,	Univ. Vt., '65,	Norwich.
Castle, Frank Edwin,	Yale, '70,	Waterbury.
Chamberlain, Myron Newton, B.A., '57,	Yale, '66,	Cheshire.
Chapman, Albert Taylor,	P. & S., N. Y., '64,	Mystic.
Chapman, Sherman Hartwell, B.A., '53; M.A., '66,	P. & S., N. Y., '69,	New Haven.
Cheney, Benjamin Austin, B.A., '88,	Yale, '90,	New Haven.
Childs, Samuel Beresford, B.A., Yale, '83,	Univ. N. Y., '87.	Hartford.
Churchill, Asa Hopkins,	Yale, '57,	Meriden.
Clark, Arthur Norman,	P. & S., N. Y., '83,	South Norwalk.
Clark, Franklin Pierce,	P. & S., N. Y., '76,	Danbury.
Clary, George, A.B., '52,	N. Y., '57, Yale, '57,	New Britain.
Clason, Abraham Travis,	Univ. N. Y., '66,	Danbury.
Cleaveland, Daniel Athearn,	Bowdoin, '56,	Middletown.
Coates, Franklin Avery, A.B., '72; A.M., '75,	P. & S., N. Y., '75,	Mystic Bridge.
Cogswell, William Badger,	Bellevue, '81.	Stratford.
Coholan, Michael James,	Univ. N. Y., '65,	New Britain.
Coleburn, Arthur Burr,	P. & S., N. Y., '90,	Middletown.
Comings, Benjamin Newton,	Castleton, Vt., '45,	New Britain.
Conkey, Caroline Root,	W. Med., N. Y., '81.	Waterbury.
Converse, George Frederick,	Yale, '87.	New Haven.
Coogan, Joseph Albert,	Bellevue, '76,	Windsor Locks.
Cook, Ansel Granville,	P. & S., N. Y., '87.	Hartford.
Cooley, Myron Lynus,	Buffalo, '86,	Southbury.
Cooper, Louis Edward, Ph.B., '84,	Yale, '86,	Ansonia.
Cornwall, Edward Thomas,	P. & S., N. Y., '81,	Cheshire.
Coudert, Frank Edmonds, Ph.D.,	Univ. N. Y., '90,	Wallingford.
Cowell, George B.,	P. & S., N. Y., '88,	Bridgeport.
Crane, Augustin Averill, B.A., '85,	Yale, '87,	Waterbury.
Crary, David,	Yale, '69,	Hartford.
Cremin, Lawrence Michael,	Univ. N. Y., '81,	New Britain.
Cremin, Michael Aloysius.	P. & S., N. Y., '75	New Haven.
Cressy, Noah, Ph.D.,	Berkshire, '62,	Hartford.
Crighton, Andrew John,	P. & S., Balt., '91,	Colchester.
Crofton, Joseph Richard,	P. & S., N. Y., '89,	New London.
Cronin, Joseph Francis,	P. & S., N. Y., '83,	New London.
Crossfield, Frederick Solon,	Bellevue, '78,	Hartford.
Crothers, Thomas Davison,	Albany, '65.	Hartford.
Crowley, William Holmes,	Buf. Med. Col., '90,	Collinsville.
Cummings, William Willis,	Univ. N. Y., '82,	Bridgeport.
Curtiss, William M. S.,	P. & S., Balt., '93,	Cornwall B'g'e.
Daggett, David Lewis, B.A., '39,	Yale, '43,	New Haven.
Daggett, William Gibbons, B.A., '80,	Univ. Pa., '84,	New Haven.
Darby, Charles Sinclair,	Charl'st'n, Med., '60,	Stamford.
Darby, Charles Sinclair, Jr.,	Univ. N. Y., '90.	Stamford.
Darling, Asael Ebenezer,	Harvard, '72.	Killingly.
Dart, Frederick Howard,	P. & S., N. Y., '84,	Niantic.

Name.	Medical Graduation.	P. O. Address.
David, Adelard David,	Dartmouth, '89,	Willimantic.
Davis, Charles Henry Stanley,	Univ. N. Y., '66,	Meriden.
Davis, Edwin Taylor,	Univ. Vt., '88,	Ellington.
Davis. Emory Hawkins,	Univ. Vt , '72,	Moosnp.
Davis, Gustav. Pierrepont, B.A., '66,	P. & S., N. Y., '69,	Hartford.
Davis, Warren Russell,	Univ. Vt., '82,	Voluntown.
Davison, Luther Augustus,	Univ. N. Y., '82,	Hartford.
Day, Loren True,	Yale, '80,	Westport.
Dean, Henry Spalding,	Jefferson, '52,	South Coventry.
Dean, Horace Camillus,	Univ. N. Y., '85,	New Britain,
DeForest, Lonis Shepard. B.A., '79; M.A., '91,	Univ. Jena, '85,	New Haven.
Delaney, William Joseph,	McGill Univ., '87,	Naugatnck.
Delesdernier, Horace William,	Univ. Vt., '85,	Meriden.
DeWolfe, Daniel Charles,	Univ. Vt., '86,	Bridgeport.
Dibble, Frederick Levi,	Yale, '59,	New Haven.
Dickinson, Francis Lemuel,	Yale, '40,	Rockville.
Dimon, John Nicoll,	L. I Col. Hosp., '83,	New London.
Donahue, James Francis,	Univ. Vt., '92,	New Britain.
Donaldson, William Henry,	Univ. N. Y., '81,	Fairfield.
Dooley, John Thomas,	Univ. N. Y., '87,	Manchester.
Donglass, Edmond Peaslee,	Univ. N Y., '89,	Groton.
Dontteil, Henry,	Yale, '79,	New Britain.
Dowling, John Francis,	L. I. Col. Hosp., '90,	Thompsonville.
Down, Edwin Augustus,	P. & S., N. Y., '87,	Hartford.
Downey, Roger Charles,	Univ. Vt., '92.	Portland.
Downs, Frederick Bradley,	Univ. N. Y., '78,	Bridgeport.
Dunham, Martin Van Buren,	Harvard, '67,	Greenfield Hill.
Dwyer, John,	Univ. N. Y., '71,	Hartford
Edgerton, Francis Daniels, A.M., '61,	Univ. Vt , '61; P. & S., N Y.,'64,	Middletown.
Eggleston, Jeremiah Dewey,	P. & S., N. Y , '79,	Meriden
Elcock, Harry Alfred,	Yale, '91,	New Haven.
Eliot, Gustavus, B.A., '77; A.M., '82,	P. & S., N Y., '80,	New Haven.
Ellis, Richard,	P. & S., N. Y , '88,	Danbnry.
Ellsworth, Pinckney Webster, B.A., '36; M.A.,	P. & S., N. Y., '39,	Hartford.
Ensign. Robert Eleazer.	Albany, '57,	Berlin.
Evans, Alexander William, Ph.B , '90,	Yale, '92,	New Haven.
Fenn, Ava Hamlin,	P. & S., Balt , '86,	Meriden.
Ferguson, George Dean,	Univ. N. Y., '79,	Thomaston.
Ferris, Anna Jackson,	Wom. Med., Pa., '74,	Meriden.
Ferris, Harry Burr, B.A., '87.	Yale, '90,	New Haven.
Field, Albert,	L. I. Col Hosp., '67,	East Hampton.
Finch, Geo. Terwilliger, B.A., M.A.,	Bellevue, '77,	Thompsonville.
Fisher, William Edwin,	Univ. Pa , '76,	Middletown.
Fiske, Isaac Parsons.	Univ. N. Y., '75.	Southington.
Fitch, Clarence Lovell,	Dartmouth. '81,	New Haven.
Fleischner, Henry,	Yale, '78,	New Haven.
Flint Eli Percival,	Yale, '79,	Rockville
Follansbee. Willard Francis,	P. & S., Chic , '86,	Danbnry.
Foot, Charles Jenkins, B.A., '83,	Harvard, '87,	New Haven.

Name.	Medical Graduation.	P. O. Address.
Ford, William J.,	Univ. N. Y., '84,	Washington.
Foster, John Pierpont Codrington, B.A., '69,	Yale, '75,	New Haven.
Foster, William Wooden,	Harvard, '82,	Putnam.
Fox, Charles Anson,	P. & S., N. Y., '81,	Hartford.
Fox Charles James,	Univ. N. Y., '76,	Willimantic.
Fox, Edward Gager,	Univ. N. Y., '83,	Wethersfield.
Fox, Morton Earl,	L. I. Col. Hosp., '93,	Montrose.
Fox, Roswell,	Univ. N. Y., '47,	Wethersfield.
Franklin, Spencer,	Univ. N. Y., '89,	Greenwich.
Franklin, Thomas Morris,	Univ. N. Y., '47,	Greenwich.
French, Eugene Cowles,	Univ. Mich., '82,	Watertown.
French, Wm. Freeman, B.A., M.A.,	Univ. N. Y., '84,	Noroton.
Freney, John Daniel,	L. I. Col. Hosp., '93,	Waterbury.
Froelich, Charles Edward,	Copenhagen, '70,	Hartford.
Frost, Charles Warren Selah,	P. & S., N. Y. '80,	Waterbury.
Fuller, Austin Brainard, B.A., Yale, '66,	Yale, '92,	New Haven.
Fuller, Horace Smith, B.A., '58; A.M., '61.	P. & S., N. Y., '65.	Hartford.
Galvin, William,	Univ. Vt., '92.	Meriden.
Garlick, Samuel Middleton,	Harvard, '77,	Bridgeport.
Gartland, John Lawrence,	Univ. N. Y., '91,	Meriden.
Gaylord, Chas. Woodward, B.A., '70,	Yale, '72,	Branford
Gay, George Clifton,	Univ. Mich., '90,	Waterbury.
Gaynor, Louis Joseph,	Univ. N. Y., '91,	New Haven.
Geib, Henry Philip,	Bellevue '69,	Stamford.
Gilbert, Daniel,	Univ. N. Y., '90,	Westport.
Gilbert, Samuel Dutton, B.A., '69,	Yale, '71,	New Haven.
Gillin, Charles Adelbert,	Univ. N. Y., '83,	Berlin.
Gilnack, Frederick,	P. & S., N. Y., '67,	Rockville.
Girard, Charles Hermenegilde,	Viet., Montreal, '90,	Willimantic.
Gladwin, Ellen Hammond.	W. Med., N. Y., '72,	Hartford.
Godfrey, Charles Cartlidge,	Dartmouth, '83,	Bridgeport.
Goodrich, Alfred Russell,	Berkshire, '46,	Vernon.
Goodwin, Ralph Schuyler.	P. & S., N. Y., '66,	Thomaston.
Goodyear, Robert Beardsley,	Yale, '68,	North Haven.
Gorham, Andrew Bennett.	Yale, '79,	Wilton.
Gorham, Frank,	Yale, '76,	Lyon's Plain.
Grannis, John Henry,	Yale, '68,	Old Saybrook.
Graves, Charles Burr, B.A., '82,	Harvard, '86,	New London.
Graves, Frederick Chauncey,	Univ. N. Y., '88,	Bridgeport.
Gray, William Henry,	P. & S., N. Y., '89,	Mystic.
Gregory, James Glynn, B.A., '65,	P. & S., N. Y., '68,	Norwalk.
Gridley, Ida Rachel, A.M., '86,	P. & S., Bost., '89,	Collinsville.
Griggs, Edward Luther,	L. I. Col. Hosp., '64.	Waterbury.
Griggs, Oliver Burnham,	Univ. N. Y., '47,	Willimantic.
Griswold, Edward Hammond.	Univ. N. Y., '78,	East Hartford.
Griswold, Frederick Pratt,	P. & S., N. Y., '76.	Meriden.
Griswold, Julius E.,	Univ. N. Y., '78,	Portland.
Griswold, Hamilton Byron,	Univ. Vt., '86.	Gaylordsville.
Griswold, Roger Merwin,	Univ. N. Y., '75.	Birmingham.
Griswold, Rufus White,	P. & S., N. Y., '54,	Rocky Hill.
Griswold, Wm. Loomis, Ph.B., '81,	P. & S., N. Y., '85,	Greenwich.
Guild, Frank Eugene,	L. I. Col. Hosp., '85.	Windham.
Hall, Edward Dormenio,	Harvard, '73.	Meriden.

Name.	Medical Graduation.	P. O. Address.
Hallock, Frank Kirkwood, A.B., A.M., '82,	P. & S., N. Y., '85,	Cromwell.
Hallock, Winthrop Bailey,	L. I. Col. Hosp., '64,	Cromwell.
Hamant, Irving Lewis,	L. I. Col. Hosp., '90,	Norfolk.
Hamilton, Charles Allen,	Univ. Vt, '86,	Waterbury.
Hammond, Henry Louis, Ph.B., '64,	Harvard, '66,	Killingly.
Hanchett, Thatcher Swift,	Bellevue, '64,	Torrington.
Hanlo , Nicholas J.,	'91,	Waterbury.
Harley, Mary,	Wom. Col., N. Y. Infirmary, '92.	Middletown.
Harriman, Patrick Henry,	Univ. N. Y., '84,	Norwich.
Harris, George Robert,	P. & S., N. Y., '85,	Norwich.
Harris, George Washington,	P. & S., N. Y., '57,	Lyme.
Hart, Charles Remington,	P. & S., N. Y., '59,	Bethel.
Haskell, Charles Nahum,	Univ. Vt., '90,	Bridgeport.
Hastings, Panet Marshall, A.B., '38, A.M.,	P. & S., N. Y., '42,	Hartford.
Haven, William Chadbourne,	Univ. N. Y., '77,	Coventry.
Hawkins, Wm. Whitney, B.A., '79,	Yale, '81,	New Haven.
Hawley, George Rufus,	L. I. Col. Hosp., '92,	Danbury.
Hayes, John Francis,	Univ. N. Y., '79,	Waterbury.
Hazen, Henry C.,	P. & S., N. Y., '92,	Haddam.
Hazen, Miner Comstock,	Univ. Mich., '55,	Haddam.
Heady, Elias Buel,	Yale, '72,	Milford.
Henderson, Robert James,	Jefferson, '92,	Yantic.
Hexamer, Carl Reisig, B.S., '83,	P. & S., N. Y., '86,	Stamford.
Hibbard, Nathaniel, A.B., '78,	Harvard, '82,	Danielsonville.
Higgins, Royal Lacey,	Bellevue, '67,	Norwalk.
Higgins, William Lincoln,	Univ. N. Y., '90,	South Coventry.
Hill, Charles Edwin, B.A., '76,	Harvard, '79,	East Killingly.
Hill, Edwin Allen,	Harvard, '50,	East Killingly.
Hill, Seth,	Yale, '66,	Stepney.
Hills, Thomas Morton,	Yale, '63,	Willimantic.
Holbrook, Lowell,	Univ. N. Y., '49,	Thompson.
Holmes, Arthur Almond,	Harvard, '65,	Bridgeport.
Holmes, George James,	Albany, '82,	New Britain.
Holmes, Walter Hamilton, A.B., '75,	Harvard, '79,	Waterbury.
Horton, William Wickham,	Univ. N. Y., '79,	Bristol.
Hotchkiss, Norton R.,	Univ. Md., '91	New Haven.
Hough, Henry Wightman,	Yale, '36,	Putnam.
Houghton, Simon Willard,	Bellevue, '79,	Hazardville.
Howard, Arthur Wayland,	Univ. N. Y., '90,	Wethersfield.
Howard, John,	Dartmouth, '81,	Hartford.
Howe, Harmon George,	Univ. Vt., '73; P. & S., N. Y., '75,	Hartford.
Hoyt, Curtis Clark,	P. & S., N. Y., '87,	Bridgeport.
Hubbard, Charles Henry,	Yale, '60,	Essex.
Hubbard, Robert,	Yale, '51,	Bridgeport.
Hubbard, Stephen Grosvenor, M.A., '60,	Dartmouth, '43,	New Haven.
Hudson, William Miller, B.A., '53,	Jefferson, '55,	Hartford.
Hughes, Oliver John Davis,	L. I. Col. Hosp., '75,	Meriden.
Hulbert, William Sharon,	Univ. N. Y., '80,	Winsted.
Huntington, Samuel Henry,	Yale, '76,	Norwalk.
Hurlbut, Augustus Moen, B.A., '76,	P. & S., N. Y., '79,	Stamford.
Husinsky, Moses Jacob,	Yale, '92,	New Haven.

Name.	Medical Graduation.	P. O. Address.
Ingalls, Phineas Henry, A.B., '77; A.M., '82,	P. & S., N. Y., '80,	Hartford.
Irving, Samuel Wellington,	Yale, '91,	New Britain.
Isham, Oliver Kingsley,	Univ. N. Y., '88.	Hartford.
Ives, Robert Shoemaker, B.A., '64; M.A.,	Yale, '66.	New Haven.
Jarvis, George Cyprian,	Univ. N. Y., '60,	Hartford.
Jennings, George Herman,	L. I. Col. Hosp., '75,	Jewett City.
Johnson, Edwin Hines,	Univ. Vt., '88,	Nangatuck.
Johnson, Frederick Eugene,	Univ. N. Y., '69,	Mansfield.
Johnson, John William,	P. & S., Balt., '93,	Thomaston.
Johnson, Marcus Morton, Ph.B.,	Univ. N. Y., '77,	Hartford.
Judson, Walter, B.A., '64; M.A., '67,	P. & S., N. Y., '70,	New Haven.
Judson, William Henry,	Jefferson, '78,	Danielsonville.
Kane, Thomas Francis,	Bellevue, '87,	Hartford.
Kean, Mrs. L. Darnstadt.	Wom. Med., Pa., '87,	Hartford.
Kendall, John Calvin, B.A., '70,	P. & S., N. Y., '75,	Norfolk.
Keniston, James Mortimer,	Harvard, '71,	Middletown.
Kent, John Bryden,	Harvard, '69,	Putnam.
Ketchum, Leander Young,	Univ. Vt., '80,	Woodbury.
Kimball, Rush Wilmot,	L. I. Col. Hosp., '90,	Norwich.
Kleuke, Henry Frederick,	Univ N. Y., '92,	New Haven.
Knight, George Henry,	"Univ.," (?) '80,	Lakeville.
Knight, William Ward,	Univ. N. Y., '76,	Hartford.
Knight, William Wilshire,	Berkshire, '68,	Sharon.
Korn, William Alfred,	Yale, '92,	Norwich.
Lacey, William Frederick,	Yale, '44.	Danbury.
Lambert, Benjamin Lott,	Univ. N. Y., '83,	New Haven.
Lanson, George Newton, B.A.,	Yale, '92,	Middle Haddam.
Lawrence, George W.,	Yale, '90,	Cromwell.
Lander, Robert, M.A.,	Yale, '71,	Bridgeport.
LaPierre, Julian,	Bellevue, '71,	Norwich.
LaRue, Omer,	Vict., Montreal, '71,	Putnam.
Lawlor, Timothy Chris. Ambrose,	Bellevue, '92,	Rockville.
Leavenworth, Daniel Carrol,	Yale, '65,	New Haven.
Lee, Frank Herbert,	Albany, '88,	Canaan.
Leighton, Alton Winslow,	Yale, '79,	New Haven.
Leonard, Elbridge Knowlton,	Conn. Med. S'y., '66.	Rockville.
Lewis, George Francis,	Yale, '65,	Collinsville.
Lewis, George Frederick, B.A., '77,	Yale, '84,	Stratford.
Lewis, John Benjamin,	Univ. N. Y., '53.	Hartford.
Lewis, William Albert,	Harvard, '51,	Moosup.
Lindsley, Charles Augustus, B.A., '49; M.A.,	Yale, '52,	New Haven.
Lindsley, Chas. Purdy, Ph.B., '75,	Yale, '78,	New Haven.
Livingston, Joseph Alexander,	L. I. Hosp., '90,	West Cornwall.
Look, Frank Byron,	Bowdoin, '84,	Middletown.
Loomis, Francis Newton, B.A., '81,	Yale, '83,	Birmingham.
Loveland, John E., A.B., '89,	Harvard, '92,	Middletown.
Lowe, Russell Walter,	Univ. N. Y., '89,	Ridgefield.
Luby, John Francis, Ph.B., '76,	P. & S., N. Y., '78,	New Haven.
Lynch, John Charles,	Univ. N. Y., '86.	Bridgeport.
Lyon, Edwin Bradbury,	Berkshire, '62,	New Britain.

Name.	Medical Graduation.	P. O. Address.
Lyon, Irving Whitall.	Univ. Vt., '63, P. & S., N. Y., '93,	Hartford.
Lyons, Andrew Wolff,	Columbus, '76,	Bridgeport.
MacLaren, William Stevenson.	P. & S., N. Y., '89,	Litchfield.
Madden, Edward George,	Yale, '85,	New Haven.
Maher, Stephen John,	Yale, '87,	New Haven.
Mailhouse, Max, Ph.B., '76,	Yale, '78,	New Haven.
Marcy, Robert Adrian,	Univ. N. Y., '82,	New Preston.
Marlles, Hubert Walter,	Louisville Med. Col., '93,	Hartford.
Marsh, Arthur Washburn,	Univ. Vt., '82,	Westville.
Martin, Thomas Francis.	Univ. N. Y., '74,	Bridgeport.
Mason, Jarvis King, B.A., '55; M.A., '59,	Harvard, '61,	Suffield.
Matthewson, Earl,	P. & S., N. Y., '79,	Durham.
May, Austin Ela,	Univ. Vt., '79,	Bethel.
May, Jacob,	Rush, Chicago, '76,	Bridgeport.
Mayberry, Franklin Hayden	Univ. Vt., '85,	Burnside.
Mayer, Nathan,	Cincinnati, '57.	Hartford.
McCabe, Edward Michael, B.A., '84,	Yale, '87,	New Haven.
McDonald, Edward Walsh,	Univ. N. Y., '71,	Waterbury.
McDonnell, Ralph Augustine, B.A., '90,	Yale, '92,	New Haven.
McGanghey, James David,	Jefferson, '70,	Wallingford.
McKnight, Everett James, B.A., '76,	P. & S., N. Y., '79,	Hartford.
McNeil, Rollin,	Yale, '62,	New Haven.
Mead, Kate Campbell.	Wom. Med. Col., Phila., '88,	Middletown.
Meek, James Albert,	McGill Univ., '75,	Stamford.
Meeks, Edwin Joseph,	Bellevue, '90,	Stamford.
Meeks, Harold Albert,	Bellevue, '90,	Meriden.
Miller, George Root,	P. & S., Balt., '86,	Hartford.
Moody, Mary Blair,	Buffalo, '76,	New Haven.
Morgan, Wm. Dennison, A.B., '72.	P. & S., N. Y., '76,	Hartford.
Morrell, Frederick Augustus,	L. I. Col. Hosp., '85,	Putnam.
Morrisey, John Joseph, B.S.,	Univ. N. Y., '84,	Hartford.
Munger, Carl Eugene, Ph.B., '80,	P. & S., N. Y., '83,	Waterbury.
Munger, Elisha,	Yale, '75,	New London.
Munger, Walter Seward,	Yale, '55,	Watertown.
Murphy, Michael Daniel,	Bellevue, '84,	Middletown.
Murphy, Walter Graham,	Alb'y Med. Col., '90,	Granby.
Nelson, Abiel Ward,	Harvard, '61,	New London.
Newton, Cyrus Brownlie,	Yale, '56,	Stafford Springs.
Newton, Matthew Turner,	Yale, '51,	Suffield.
Nichols, Edward Payson, A.B., '48; A.M., '51.	P. & S., N. Y., '52,	Killingworth.
Nickerson, Nehemiah,	N. Y. Med. Col., '57,	Meriden.
Nicoll, John,	Yale, '54,	New Haven.
Noble, Henry Smith, A.B., '59,	P. & S., N. Y., '71,	Middletown.
North, James Howard,	L. I. Col. Hosp., '73,	Goshen.
Noyes, Selden Walkley,	Univ. Pa., '68,	Haddam.
Ober, George Eugene,	Univ. Vt., '90,	Bridgeport.
O'Connell, Thomas James.	P. & S., Balt., '92,	East Hartford.
O'Connor, Matthew Chas., A.B., '69,	P. & S., N. Y., '73,	New Haven.

Name.	Medical Graduation.	P. O. Address.
O'Connor, Patrick Thomas,	Bellevue, '92,	Waterbury.
O'Flaherty, John,	Albany, '64,	Hartford.
O'Hara, Bernard Augustine,	Bellevue, '82.	Waterbury.
Olmstead, James, B.A., '72,	Yale, '74.	Middletown.
Osborn, George Wakeman, B.A., '84,	P. & S., N. Y., '87,	Bridgeport.
Osborne, Curtiss Hinman,	Yale, '77.	Southport.
Osborne, Oliver Thomas,	Yale, '84,	New Haven.
O'Sullivan, Thomas Jefferson,	Bellevue, '76,	Birmingham.
Paddock, Lewis Sloat, M.A.,	N. Y. Med. Col., '54.	Norwich.
Park, Charles Edwin,	Yale, '81,	New Haven.
Parker, Julian Newell,	Yale, '67.	S. Manchester.
Parker, Theodore Raymond,	Univ. N. Y., '80,	Willimantic.
Parmele, George Luther, D.M.D.,	L. I. Col. Hosp., '69.	Hartford.
Parsons, Edward Field, A.B., '48,	P. & S., N. Y., '58,	Thompsonville.
Peckham, Lucy Creemer,	Wom. Med., Pa.,'85,	New Haven.
Peck, Anthony,	Univ. N. Y., '75,	Norwich.
Peck, George Augustus,	P. & S., N. Y., '91,	Meriden.
Perkins, Charles Harris,	P. & S., N. Y.,'91,	Norwich.
Perkins, William Sheldon Clark,	P. & S., N. Y.,'60,	Norwich.
Philip, Rosavelle Gardner,	Wom. Med. Col., N. Y. Inf., '75,	Stamford.
Phillips, Alfred Noroton,	P. & S., N. Y., '83,	Stamford.
Phinney, Elisha,	Yale, '35.	Yantic.
Pierce, Elbridge Worthington,	Univ. N. Y., '85,	Meriden.
Pierson, Samuel,	P. & S., N. Y., '81.	Stamford.
Pike, Ezra Barker,	Bowdoin, '57,	Morris.
Pinney, Charles Hitchcock,	P. & S., N. Y., '53,	Derby.
Pinney, Royal Watson,	P. & S., N. Y., '88,	Birmingham.
Pirritte, Frederick Winchelle,	Univ. Toronto, '93,	New Haven.
Pitman, Edwin Parker, B.A., '86,	Dartmouth, '91,	New Haven.
Platt, William Logan.	P. & S., N. Y.. '81,	Torrington.
Plumstead, Matthew Woodbury,	Jefferson, '87.	East Haddam.
Plunkett, Henry Bernard,	Univ. N. Y., '91,	Rocky Hill.
Pons, Louis Jacques,	Univ. Vt , '85,	Roxbury.
Porter, George Loring,	Jefferson, '62,	Bridgeport.
Porter, William Jr.,	Chic. Med. Col.,'81,	Hartford.
Potter, Frank Edward,	P. & S., N. Y.,'89,	Portland.
Powers, Frederick,	P. & S., N. Y., '70,	Westport.
Poyer, John Baptist,	Dartmouth, '86,	New Britain.
Pratt, Edward Loomis.	Univ. N. Y., '84,	Winsted.
Pratt, Elias,	P. & S., N. Y.,'87,	Torrington.
Purdy, Alexander Marshall,	Univ. Vt., '84,	Mystic Bridge.
Rainville, Frederick Edmund,	Univ. Vt , '91,	Wauregan.
Rafftery, Thomas Harry, B.A., '76, M.A., Holy Cross, '86,	Worcester, '86, P. & S., N. Y., '86,	Stafford Springs.
Rankin, Chas Goodrich, A.M., '84,	Chic. Med. Col., '86,	Glastonbury.
Reilly, James Michael,	Yale, '78,	New Haven.
Reynolds, Herbert Sumner,	Univ. N. Y., '81,	Clinton.
Rice, Frederick Augustus,	Bellevne, '76,	Bridgeport.
Richardson, Dana Putnam,	Harvard, '82,	Sandy Hook.
Richardson, Dwight Alphonzo,	Yale, '81,	Shelton.
Ring, Henry Wilson, A.B., '79 M.A.,	Me. Med. Col., '81,	New Haven.
Rising, Henry Martin,	Yale, '68,	S. Glastonbury.
Risley, Stephen Goodale,	Univ. N. Y., '46,	Rockville.
Robbins, George Orrin,	Yale, '79.	Waterbury.

Name.	Medical Graduation.	P. O. Address.
Robbins, James Watson,	Bellevue, '80,	Naugatuck.
Roberts, Edw. Kilbourne, Ph.B., '78,	Yale, '80,	New Haven.
Robinson, Myron Winslow,	Berkshire, '60,	Colchester.
Robinson, Paul Skiff,	Yale, '91,	New Haven.
Robinson, Rienzi,	L. I. Col. Hosp., '69,	Danielsonville.
Rockwell, Thomas Francis,	Univ. N. Y., '81,	Rockville.
Rodger, David Robert,	P. & S., N. Y.,	Woodbury.
Rodman, Charles Shepherd,	P. & S., N. Y., '68,	Waterbury.
Rogers, Charles Henry, B.A., '44,	Yale, '47,	Central Village.
Rogers, Francis Joseph,	Univ. Pa., '73,	Stamford.
Rogers, Frederick,	Univ. N. Y., '63,	Willimantic.
Root, Edward King,	Univ. N. Y., '79,	Hartford.
Root, Joseph Edward, B.S., '76,	P. & S., N. Y., '83,	Hartford.
Rnickoldt, Arthur,	Univ. Jena, '65,	New Haven.
Rnland, Fred Davis,	P. & S., N. Y., '89,	Westport.
Rnssell, Gurdon Wadsworth, B.A., '34; M.A.,	Yale, '37,	Hartford.
Rnssell, Thos. Hubbard, Ph.B., '72,	Yale, '75,	New Haven.
Rnssell, William Spencer,	Yale, '80,	Wallingford.
Russell, Willis Adams,	Univ. N. Y., '81,	Essex.
Sanford, George Willis,	Berkshire, '36,	Simsbury.
Sanford, Leonard Jacob, M.A., '58,	Jefferson, '54,	New Haven.
Sawtelle, Frederic George,	L. I. Col. Hosp., '80,	Pomfret.
Schavois, Frederic,	P. & S., Balt., '87,	Stamford.
Scott, Albert Lewis,	P. & S., N. Y., '85,	Danbury.
Sears, Cushman Allen,	Univ. N. Y., '62,	Portland.
Seaver, Jay Webber, B.A., '80,	Yale, '85,	New Haven.
Sedgwick, James Theodore.	Univ. N. Y., '85,	Litchfield.
Segur, Gideon Cross,	P. & S., N. Y., '82,	Hartford.
Selleck, Nathaniel,	Univ. N. Y., '89,	Danbury.
Sellew, Philip Hamilton,	Jefferson, '90,	Warehouse P't.
Sheedy, Bryan DeForest,	Univ. N. Y., '84,	Bridgeport.
Shelton, Gould Abijah, M.A., '91,	Yale, '69,	Shelton.
Shepard, Durell,	Yale, '64,	West Haven.
Shepherd, George Reubens,	Yale, '66,	Hartford.
Sherman, Henry Arthur,	Jefferson, '88,	Putnam.
Simmons, Willard Nelson,	Univ. Vt., '89,	Tolland.
Simpson, Frederick Thomas, B.A.,	Me. Med. Col., '84,	Hartford.
Skinner, Clarence Edward,	Yale, '91,	New Haven.
Smith, Andrew Jackson,	P. & S., N. Y., '63,	Bridgeport.
Smith, Edward Montrose,	P. & S., N. Y., '82,	Newtown.
Smith, Edward Wier,	McGill, Mont., '82,	Meriden.
Smith, Frank Lewis,	Univ. N. Y., '75,	Bridgeport.
Smith, Frederick Sumner, B.A., '79,	Yale, '82,	Chester.
Smith, Herbert Engene, Ph.B., '79,	Univ. Pa., '82,	New Haven.
Smith, James Jay,	P. & S., Balt., '88,	Willimantic.
Smith, Junius Foster,	L. I. Col. Hosp., '90,	Brookfield.
Smith, Marvin,	Univ. N. Y., '83,	New Haven.
Smith, Newton Phineas,	P. & S., N. Y., '82,	Norwich.
Smith, Oliver Cotton,	L. I. Col. Hosp., '83,	Hartford.
Snow, Emerson Emery,	Jefferson, '74,	Danbury.
Spring, Frederick,	Univ. N. Y., '85,	Naugatuck.
Stanley, Charles Everett,	Univ. Pa., '76,	Middletown.
Stanton, George Dallas,	Bellevue, '65,	Stonington.
Stanton, John Gilman,	Würzburg, '73,	New London.
Steadman, Willard George,	Bellevue, '74,	Southington.

Name.	Medical Graduation.	P. O. Address.
Stearns, Henry Putnam, B.A., '53; M.A.,	Yale, '55,	Hartford.
Stern, Charles Seymour,	Bellevne, '91,	Hartford.
Stetson, James Ebenezer,	Yale, '81,	New Haven.
Stevens, John Gale,	Yale, '84,	Monroe.
St. John, Sam'l Benedict, B.A., '66,	P. & S., N. Y., '75,	Hartford.
Stone, Burton Dwight,	Univ. N. Y., '82,	Meriden.
Stone, Jay Stephen,	P. & S., N. Y., '65,	New Britain.
Storrs, Melancthon, B.A., '52,	Yale, '53,	Hartford.
Stowe, William Harvey,	Yale, '88,	New Haven.
Strapp, Patrick Francis,	Bellevue, '92,	Seymour.
Stratton, Edward Augustus,	Univ. N. Y. '83,	Danbury.
Street, Philo William,	Univ. Vt., '92,	Suffield.
Strickland, Rial,	Albany, '39,	Thompsonville.
Sullivan, Daniel Francis, A.B.. '91,	Niagara Univ., '91,	Hartford.
Sumner, Charles Fletcher,	Univ. W. N. Y., '40,	Bolton.
Swain, Henry Lawrence,	Yale, '84,	New Haven.
Swansey, Erastus Ferry,	P. & S., N. Y., '69,	New Britain.
Swett, William Plummer,	Univ. Vt., '76,	Terryville.
Swift, Elisha Dean,	Univ. N. Y., '49,	Hamden.
Taft, Charles Ezra,	Harvard, '86,	Hartford.
Tanner, Alfred Herbert,	Bellevue, '74,	Brooklyn.
Taylor, John Clifton,	Mich. Univ., '91,	Scotland.
Tenney, Arthur John, Ph.B., '77,	Yale, '83,	Branford.
Thompson, George,	Me. Med. Col., '89,	Taftville.
Thomson, Edward Sanford,	P. & S., N. Y., '92,	New Haven.
Thomson, Hiram Benson,	Trin. Un., Tor., '88,	New London.
Tingley, Witter Kinney,	Bellevue, '86,	Norwich.
Tinker, William Richard,	Univ. N. Y., '80.	S. Manchester.
Topping, Jacob Reed,	Univ. N. Y., '82,	Bridgeport.
Townsend, Jos. Hendley, B.A., '85,	Yale, '87,	New Haven.
Tracy, Andrew William,	McGill, Mont., '73,	Meriden.
Tracey, William Joseph,	Univ. N. Y., '89,	Norwalk.
Treadway, William A. Buckingham,	Univ. Mich., '83,	Stamford.
Treadwell, Oliver Ferd., B.A., '62,	Yale, '65,	Hamden.
Turner, Sylvester Wooster, B.A., '42,	Yale. '46,	Chester.
Tuttle, Charles Alling, Ph.B., '88,	Yale, '91,	New Haven.
Tuttle, Frank Benjamin,	Yale, '63,	Nangatuck.
Van Vleet, Peter P.,	Bellevue, '69,	Stamford.
Varno, Arthur Joel,	P. & S., Balt., '92,	Branford.
Varno, Henry G.,	P. & S., Balt., '82,	Thompsonville.
Wainwright, Wm. Aug., Muhlenberg, A.B., '63,	P. & S., N. Y., '67,	Hartford.
Waite, Frank Louis,	Bellevue, '88,	Hartford.
Walsh, Frederick William,	P. & S., Balt., '84,	Rockville.
Warner, Abner Spicer, A.B., '42.	Dartmouth, '48,	Wethersfield.
Warner, Horace Seely, A.B., '81	P. & S., N. Y., '85,	Collinsville.
Warren, Edward Winslow, A.B., '77,	Harvard, '83,	Ansonia.
Watson, Wilbur Seymour,	L. I. Col. Hosp., '87,	Danbury.
Webb, Daniel Meigs, B.A., '46,	Yale, '49,	Madison.
Welch, Edward Hubbard,	Yale, '76,	West Winsted.
Welch, George Kellogg,	P. & S., N. Y., '78,	Hartford.
Welch, William Collins,	Yale, '77,	New Haven.
Weldon, John,	Univ. N. Y., '83.	Willimantic.

Name.	Medical Graduation.	P. O. Address.
Weldon, Thomas Henry,	Univ. N. Y., '83,	S. Manchester.
Wellington, William Winthrop,	Univ. Vt., '89,	Terryville
Wheeler, Franklin, B.A., '47; M.A., '50,	P. & S., N. Y., '52,	Farmington.
Wheeler, Frank Henry, B.A., '80,	Yale, '82,	New Haven.
White, Benjamin Walker,	L. I. Col. Hosp., '86,	Bridgeport.
White, Frederick Olin,	Yale, '73,	New Haven.
White, Moses Clark, B.A., '45, M.A.,	Yale, '54,	New Haven.
White, Robert Creighton,	Univ. Vt., '89,	Willimantic.
Whiton, Francis Henry,	Dartmouth, '72,	Manchester.
Whittemore, Frank Hamilton,	Bellevue, '74,	New Haven.
Wiggin, Frederick Holme,	Bellevue, '77,	Litchfield.
Wildman, Henry Smith,	L. I. Col. Hosp., '88,	Waterbury.
Wile, William Conrad, M.A.,	Univ. N. Y., '70,	Danbury.
Williams, Amos Loomis,	Jefferson, '41,	Brookfield.
Wilson, Frederick Morse, A.B., '71,	Harvard, '75,	Bridgeport.
Wilson, John Joseph,	P. & S., Balt., '86,	Bristol.
Wilson, Samuel Allen,	Yale, '52,	Windsor.
Wilson, William Patrick,	P. & S., Balt. '90,	Wallingford.
Wilson, William Virgil,	Yale, '67,	West Haven.
Winchell, Alverd Ezra, A.B., '57,	P. & S., N. Y., '65,	New Haven.
Witter William,	Yale, '65,	Norwich.
Wolff, Arthur Jacob,	Tex. Med. Col., '76, Bellevue, '83,	Hartford.
Wooster, Charles Morris,	Univ. N. Y., '79.	Tariffville.
Wordin, Nathaniel Eugene, B.A., '70, M.A., '74,	Jefferson, '73,	Bridgeport.
Worthington, Albert Brownell,	Yale, '47,	M'dle Haddam.
Wright, Frank Walden,	Bellevue, 80,	New Haven.
Wright, John Winthrop,	Univ. N. Y., '80,	Bridgeport.
Wright, Theodore Goodelle,	Univ. N. Y., '65,	Plainville.
Woods, George Lyman,	Bowdoin, Me., '79,	Collinsville.
Young, Mary Rising,	Univ. Mich., '76,	Bridgeport.
Zink, Walter,	Würtzburg,	Branford.

Members noticing any errors or omissions in any part of their record will please inform the Secretary for correction in future lists.

YALE UNIVERSITY,

DEPARTMENT OF MEDICINE.

1894–95.

FACULTY.

Rev. Timothy Dwight, D.D., LL.D., President.

Moses C. White, M.D., *Professor of Pathology.*

Charles A. Lindsley, M.D., *Professor of the Theory and Practice of Medicine.*

William H. Carmalt, M.D., *Professor of Surgery.*

James Campbell, M.D., *Professor of Obstetrics and Diseases of Women and Children.*

Thomas H. Russell, M.D., *Professor of Clinical Surgery and Surgical Anatomy.*

Herbert E. Smith, M.D., *Professor of Chemistry, and Dean.*

Louis S. DeForest, M.D., *Assistant Professor of Clinical Medicine.*

Oliver T. Osborne, M.D., *Assistant Professor of Materia Medica and Therapeutics.*

Harry B. Ferris, M.D., *Assistant Professor of Anatomy.*

Graham Lusk, Ph.D., *Assistant Professor of Physiology.*

OTHER INSTRUCTORS.

Professor William H. Brewer, Ph.D., *Lecturer on Sanitary Science and Public Health.*

Henry P. Stearns, M.D., *Lecturer on Insanity.*

Samuel B. St. John, M.D., *Lecturer on Ophthalmology.*

Henry Fleischner, M.D., *Lecturer on Dermatology and Clinical Medicine.*

Frank H. Wheeler, M.D., *Assistant in Pathology.*

Charles J. Foote, M.D., *Demonstrator of Bacteriology.*

Henry L. Swain, M.D., *Lecturer on Diseases of the Throat and Ear.*

Arthur N. Alling, M.D., *Instructor and Clinical Assistant in Ophthalmology.*

William H. Stowe, M.D., *Assistant in the Medical Clinic.*

Louis B. Bishop, M.D. *Assistant in the Surgical Clinic*
B. Austin Cheney, M.D., *Instructor in Obstetrics and Gynecology.*
Charles A. Tuttle, M.D., *Assistant in the Surgical Clinic.*
Paul S. Robinson, Jr., M.D , *Assistant in the Medical Clinic.*
Leonard W. Bacon, Jr., M.D., *Assistant in the Surgical Clinic.*
Warren A. Spalding, *Demonstrator of Pharmacy*
Ralph A. McDonnell, M.D., *Clinical Assistant in Dermatology.*
Charles B. Hall, *Assistant in Chemistry.*

LABORATORY INSTRUCTION.

The school has new and well-equipped laboratories, and this kind of instruction is a future of the course, there being required from each student a large amount of systematic and thorough work in chemistry, anatomy, histology and pathology.

CLINICAL INSTRUCTION.

The system of *personal instruction* which has led to such satisfactory results in the work of this school, has been further improved under the more favorable conditions of a commodious *Dispensary Building*, which has been erected on the University ground. The recently completed *Farnam Ward* and *Operating Theatre* have also greatly increased the facilities for instruction at the New Haven Hospital.

COLLATERAL INSTRUCTION.

In addition to the regular studies of the curriculum, medical students here have the unusual opportunities of increasing their fund of general information which arise from their residence in a great educational center. As members of the University there are open to them numerous lectures on scientific and other subjects, the scientific collections, and the free use of the University Library of 170,000 volumes.

TERMS OF ADMISSION.

Candidates for admission to the course leading to the degree of Doctor of Medicine, must be at least eighteen years old, and must present satisfactory testimonials of moral character from former instructors or physicians in good standing.

As evidence that he has had a sufficient preliminary education, each candidate must present proof that he has passed the matriculation examination of some scientific, literary, or professional college in good standing: or present testimonials from the proper officer that he has pursued the course of some high school, academy, or preparatory school, approved by the Faculty; or he must pass an examination. For particulars of which, see the Annual Announcement.

FEES AND EXPENSES.

Matriculation Fee (paid upon entering the school),	$ 5.00
Tuition Fee, first and second years, each,	140.00
Tuition Fee, third year,	80.00
Graduation Fee,	30.00

There are no extra expenses, except the actual cost of breakage in the Chemical Laboratory, which should not exceed $5.00, and cost of anatomical material.

PRIZES.

The Campbell Gold Medal is awarded to that member of the graduating class who has maintained the highest rank in the examinations of the course.

The Keese Prize of $140 is awarded annually to that member of the graduating class who presents the best thesis.

GRADUATE INSTRUCTION.

The instruction here offered to graduates in medicine is intended to meet the requirements of two classes of students: first, to those who wish to review or supplement their knowledge of the regular studies of the medical curriculum, as taught in this school; and second, those who wish to fit themselves in special lines of medical work, as for the duties of a medical examiner, or for medico-legal and sanitary examinations.

For announcements and further information apply to the Dean,

DR. HERBERT E. SMITH,
NEW HAVEN, CONN.