

# The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 3, NUMBER 1

JANUARY 1951

## John G. Reinhold Elected President

John G. Reinhold has been elected president of the AACC by the members in their annual election. Serving with him will be Albert E. Sobel, vice-president; Max M. Friedman, secretary and Louis B. Dotti, treasurer. Members of the Executive Committee will be Fritz Bischoff, George T. Lewis, Marschelle H. Power, Harry Sobotka and Ellenmae Vierqiver.

The slate of new officers and members of the Executive Committee proposed by the Nominating Committee was overwhelmingly endorsed by members of the AACC. The several candidates received from 89 to 90 per cent of the votes tallied.

Dr. Reinhold, president-elect, is now serving as vice-president, and Dr. Sobel, the new vice-president, is now a member of the Executive Committee. Dr. Friedman and Dr. Dotti were re-elected secretary and treasurer, respectively. With the exception of Dr. Sobotka, who is now president, the new members of the Executive Committee are all to serve for the first time.

It was the opinion of the 1950 Nominating Committee, responsible for the above selections, that the Executive Committee should be of national representation, and yet allow for a nucleus in a more limited geographical area so as to permit them to convene several times during the year. Members are allowed traveling expenses only up to ten dollars to and from such meetings (with no allowances during the Stated Annual Meeting).

The ballots were tallied on December 26, 1950 by Albert Hanock, Mary H. McKenna and Fred Schattner. Almost 60 per cent of the ballots distributed were returned and none were declared invalid.



Harry Sobotka, president of the AACC

## STATE OF THE ASSOCIATION By Harry Sobotka

At the conclusion of the second year of its existence I wish to recount the progress which our Association has made in 1950 and to detail the activities on which we are concentrating our efforts.

The membership has risen from 139 to 328. Eleven additional candidates have applied, been certified by the Membership Committee for formal election by the Executive Committee and ten applications are being processed; two members only have resigned. In addition to the three eastern local sections, a section has been formed in Southern California and one in Chicago. About two-thirds of the total membership is now organized in local sections. There are strong contingents centering around Detroit, St. Louis and Washington and we hope that such local groups will soon recognize that the organization of a local section enhances the value of membership: The exchange of ideas on clinical chemistry methods, the promotion of favorable legislative measures, and the communication of information on desirable openings for clinical chemists count amongst the useful functions of our local sections.

The Executive Committee has been faced with numerous issues concern-

## New Group To Rate Clinical Chemistry

The Chemical and Engineering News of December 18, 1950, carried a story concerning the formation of a corporation called the American Board of Clinical Chemistry, Inc. This Corporation has been established by representatives from the American Chemical Society, Inc., The American Society of Biological Chemists, Inc. and the American Institute of Chemists, Inc.

The purpose of this corporation according to a news release received from the American Board of Clinical Chemistry, is to encourage the study and improve the practice of clinical chemistry; to approve those with special knowledge in clinical chemistry to furnish, in the public interest, a registry of individuals with specialized knowledge in clinical chemistry.

The purpose, the requirements for admission to examination and certification as they appear in the Chemical and Engineering News are reprinted elsewhere in this issue.

The members of this corporation with their highest earned degrees, their titles and their affiliations follow:

O.A. Bessey, Ph.D., Professor of Biochemistry, University of Illinois; president. D.D. Van Slyke, Ph.D., Assistant Director and Physiologist, Brookhaven National Laboratories; vice-president. J.W.E. Harrison, Pharm.M., Director, La Wall and Harrison; secretary-treasurer. H.H. Bunzell, Ph.D., Consulting Chemist, New York City. O.H. Gaebler, Ph.D., M.D., Head, Department of Biochemistry, Edsel B. Ford Institute of Medical Research, Detroit, Mich. J.M. Luck, Ph.D., Professor of Biochemistry, Leland Stanford Jr. University, Stanford, Calif. C.W. Muehlberger, Ph.D., State Toxicologist and

(Continued on page 3)

(Continued on page 9)

Newsletter of the American Association  
of Clinical Chemists, Inc.

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opinions advanced by contributors do not  
necessarily represent the official position  
of the American Association of Clinical  
Chemists.*

VOL. 3, NO. 1 JANUARY 1951

## "CERTIFICATION" WITHOUT REPRESENTATION

The Chemical and Engineering News of December 18, 1950, carried an article announcing the fact that an American Board of Clinical Chemistry has been incorporated.

The members of this Board, the purpose of this Corporation, the qualifications for certification, the forms for application, and the fees required for applying for certification as they appeared in the Chemical and Engineering News are reprinted in another part of THE CLINICAL CHEMIST.

The Association had no previous knowledge that the announcement was forthcoming. Nor has the Association been consulted in any way concerning the drafting of qualifications required for certification. There has, therefore, been very little time to study all the implications of these requirements.

The officers and the members of the Executive Committee of the Association have taken the matter under consideration. A special meeting of the Executive Committee was called by the president and was held in New York on December 28, 1950, to consider this matter which is of paramount importance to all of us.

The general consensus of opinion of members of the Executive Com-

mittee at this meeting can be summarized as being one of disappointment with the composition of this Board as it was finally incorporated and disapproval of some of the qualifications required for certification.

However, the members of the Executive Committee want to assure themselves that the qualifications as published represent the actual form in which the requirements for certification are cast before they arrive at any definite conclusion.

Therefore, they sent a letter of inquiry to the secretary of the Board asking for further information on which to make a definitive decision. The text of this letter follows:

"We have read with great interest the news release in Chemical and Engineering News, Volume 28, page 4446, concerning certification of clinical chemists. The American Association of Clinical Chemists has a membership distributed throughout the United States and Canada. Our requirements are at a high level of professional and scientific accomplishments. It is therefore apparent that we would be the ones involved and most interested in the certification of clinical chemists."

"Since our Association has at no time been consulted by, and is not officially represented on the Board of Clinical Chemistry, we should appreciate a more complete statement including articles of incorporation and by-laws so that we may study them and report our conclusions to the membership at large."

"We should like to be able to include your answer in our newsletter going to press January 8th."

The secretary of this board has replied. The text of his letter, received on January 5, 1951, follows:

"Herewith I am sending to you a photostat of the Charter, pages 1 to 9 inclusive. Pages 9 and following have signatures and jurats and therefore I do not believe of interest to you, although should you feel you desire page 9, which carries the actual signatures, I shall be happy to forward it."

"The By-Laws I gave to Reinhold, who was in the office today. You will

note when you receive them from him, that certain sections or parts of sections have been stricken. All these are now included in the Charter, and if you desire you may check them. Therefore, the By-Laws stand as corrected copy shows. I am sorry I do not have a fresh typewritten copy and I am hoping you can get along with this inasmuch as to retype it will involve some expense."

"If I can be of any further assistance to you in offering factual data so far as it can be released, do not hesitate to call upon me."

Those portions of the Certificate of Incorporation received, and which are referred to in the above letter as the Charter, are published in full elsewhere in this issue. As we go to press the By-Laws have not been received.

When all the data are available upon which a decision can be based we shall advise the members of the official position of the Association and the reason for such a decision.

In the meantime comments and criticism on this matter are invited from all the members.

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### NEW MEMBERS ELECTED BY THE EXECUTIVE COMMITTEE ON DECEMBER 28, 1950.

Bond, Epperson E., Chicago, Ill.  
De Frates, Joseph, Philadelphia, Pa.  
Drabbe, Cornelle H., Philadelphia, Pa.  
Feinberg, Dorothy M., Boston, Mass.  
Fieser, Rudolph G., New York, N.Y.  
Fletcher, J. Wesley, Bakersfield, Calif.  
Halliday, Nellie, San Francisco, Calif.  
Hanson, Theodore H., Madison, Wis.  
Heck, Joseph G., Philadelphia, Pa.  
Heftmann, Erich, Bethesda, Md.  
Hiller, Alma, Chicago, Ill.  
Jones, Ralph W., San Antonio, Tex.  
Kaplan, Alex, Chicago, Ill.  
Koenig, Dorothy Ann, Chicago, Ill.  
Lasker, Sigmund, New York, N.Y.  
Levin, Marshall, Waban, Mass.  
Martuccio, Frank R., West Los Angeles, Calif.  
Ronis, Harry, Lawrence, N.Y.  
Roseland, Edward E., Dorchester, Mass.  
Sagin, Jerome F., University Park, Md.  
Sklar, Melvin S., East Rockaway, N.Y.  
Soskin, Samuel, Chicago, Ill.  
Spivack, William, Philadelphia, Pa.  
Sunshine, Irving, Kingston, N.Y.  
Tweedy, Wilbur, Hines, Ill.  
Watkins, Hannah L., Chicago, Ill.  
Zymaris, Michael, Brooklyn, N.Y.

## STATE OF ASSOCIATION

(Continued from page 1)

ing our professional status. Questions of legal regulation of clinical laboratories have arisen in California, New Jersey, New York and Tennessee and are bound to arise in other states. Our stand in such questions is linked with that of the national organizations of chemists in general, the American Chemical Society, the American Society of Biological Chemists and the American Institute of Chemists, and also with organizations of more specific character such as the National Association of Clinical Laboratories and its state affiliates. To assure appropriate handling of situations which vary from state to state, our local sections and the Committee on Legislation have conducted negotiations in a most harmonious spirit with groups motivated by parallel interests. At the present juncture the need for improving our legal status in relation to the medical profession is a foremost clearcut objective.

We have emphasized, and shall continue doing so, that the public will best be served when the clinical chemist and his laboratory is accorded equal status with the microbiologist, hematologist and pathologist and their laboratories. Except for university hospitals and other large institutions, the practice of the clinical laboratory sciences is interlocked for historic and practical reasons. While a trend towards a higher degree of specialization is clearly discernible on the horizon, the existing realities must find expression in concrete measures for registration and licensure. Ways and means must be found to assure the independence of clinical chemists who wish to confine their work to clinical chemistry. At the same time, many of us desire to be given the opportunity to practice simultaneously and with the same degree of independence those biological and physical specialties for which they are qualified. We do not desire to supervise work in any activity with which we are less familiar than the supervised personnel; this would only be the mirror image of the present situation against which we are all fighting.

Similar considerations apply to the problems of education. Our Education Committee under the chairmanship of Professor H.C. McDonald has so far concerned itself with the education of clinical chemists, especially on the doctorate level. We are investigating curricula for a Ph.D. in Clinical Chemistry and the creation of Clinical Chemistry Residencies in hospitals. The future will demand that we take a stand on the education of technicians. Here again the main problem is posed by the interlocking of clinical chem-

istry with the other specialties in the majority of laboratories. It is an important task for our Association to organize and to supervise the training of technicians in clinical chemistry and toxicology and to secure the proper co-ordination with the training in such borderline fields as serology, furthermore, to be effectively represented on such boards as are charged with licensure and registration of clinical chemists and clinical laboratories. Finally, we shall have to take a hand in providing reliable and representative samples for the periodic checks of clinical chemistry laboratories, both on a voluntary basis and wherever such checks are demanded by law.

Miriam Reiner, editor-in-chief for the First Volume has enlisted our most expert members for the task of describing and checking 20 fundamental methods in clinical chemistry for the First Annual Volume of "Methods of Clinical Chemistry" and a satisfactory contract has been signed with a prominent scientific publishing house. The sales response to this volume will help in estimating the need for, and potentialities of a periodical publication, possibly with international scope, for clinical chemistry.

In view of the world situation, we have undertaken steps to assure the employment of our members at "highest skill" whenever their services should be required by the Armed Forces.

Upon invitation by Dr. M.D. Kogel, Commissioner of Hospitals of the City of New York, we have formed a special Survey Committee under the chairmanship of Professor Warren M. Sperry and have rendered an extensive report on the condition of clinical chemistry in the twenty-seven hospitals operated in the City. The Commissioner has acknowledged the work of our Committee as follows:

"The Department of Hospitals and indeed the people of our city are indebted to your Survey Committee for its fine work in evaluating existing facilities for clinical chemistry in the hospitals of the Department."

"The recommendations of your Committee will be given serious consideration and I feel confident that out of this work will come an improved clinical chemistry service in our hospitals."

The 75th Anniversary of the A.C.S. in September 1951 will be held in New York City together with the International Congress of Pure and Applied Chemistry and attract chemists from all over the world. We have been invited by the president-elect of the A.C.S., Professor N.H. Furman, to be represented at the Jubilee Celebrations. To bring the importance of Clinical Chemistry at this occasion before the eyes of the public and of

(Continued on page 6)

## NOMINATING COMMITTEE CHOSEN BY ASSOCIATION

The Nominating Committee for 1951, selected by a vote of the membership, consists of: Joseph Benotti, Louis B. Dotti, Max M. Friedman, Samuel Natelson, Miriam Reiner, Harry Sobotka, Warren M. Sperry.

The members elected as alternates are: Oliver G. Gaebler, John G. Reinhold and Albert E. Sobel.

It is expected that this Committee will present to the secretary of the Association by September 15, 1951 a slate for officers and members of the Executive Committee that will serve from July 1, 1952 to June 30, 1953.

## THIRD ANNUAL MEETING TO BE HELD IN BOSTON

Tentative plans for the Third Annual Meeting of the American Association of Clinical Chemists, to be held in Boston during the 119th Meeting of the American Chemical Society, April 2-5, 1951, are being made by Joseph Benotti, president of the Boston Section.

A symposium, being arranged by Bernard L. Oser, will be followed by the annual dinner. An open meeting for AACC members will be held either the day preceeding or the day following.

Details of dates and places of the events will be announced in the March issue of THE CLINICAL CHEMIST and also in the March 5th issue of Chemical and Engineering News.

## OSER INVITED TO PLAN SYMPOSIUM

At the invitation of the Executive Committee of the Association Bernard L. Oser, Ph.D., is organizing a symposium on Newer Analytical Techniques in Clinical Chemistry to be held at the 119th National Meeting of the American Chemical Society in Boston, Mass., April 1-5, 1951, under joint auspices of the American Chemical Society and the Division of Analytical Chemistry. The program will include papers dealing with the application of the flame photometer to the determination of cations in body fluids, the microdetermination of iodine, the use of paper chromatography in clinical chemical investigations, infrared spectroscopy and ultra microchemical analysis.

# California Laws Concerning Clinical Laboratories Summarized

*THE CLINICAL CHEMIST believes that the following summary of California laws and proposed amendments regulating the operation of clinical laboratories in that state should be of interest to clinical chemists in all states.*

Laws and regulations relating to the operation of clinical laboratories in the State of California are codified in the California Business and Professions Code, Division 2, Chapter 3, Sections 1200-1305 inclusive and the California Administrative Code, Title 17, Chapter 2, Subchapter 1, Group 2.

The law makes certain definitions:

1. "Clinical Laboratory Technologist" means any person who engages in the work and direction of a clinical laboratory.

2. "Clinical Laboratory Technician" means any person other than a physician and surgeon who, under the direction of a clinical laboratory technologist or a physician and surgeon performs the technical procedure called for in a clinical laboratory.

3. "Clinical Laboratory" means any place, establishment or institution organized and operated for the practical application of one or more of the fundamental sciences by the use of specialized apparatus, equipment and methods for the purpose of obtaining scientific data which may be used as an aid to ascertain the presence, progress and source of disease.

The law is administered by the State Board of Health, under the direction of M.H. Merrill, M.D., Chief of the Division of Laboratories. Dr. Merrill operates the system of examinations and licensure with the aid of two Advisory Boards, one in the northern part of the state and the other in the south. The boards serve without pay and are composed of five members each. The medical profession composes 40% of the boards, which are made up of one university professor, (bacteriologist or parasitologist), two pathologists, one technologist, and one technician. Agents of the board may inspect and inquire into the methods and equipment used by clinical laboratories. When such methods or equipment are in its judgement a menace to public health, they make recommendations for change to the director in charge.

The prerequisites for admission for examination for technologists' licenses are: Bachelor's degree from an approved university with noted minimum hours of study in chemistry, bacteriology, physics, biology, physiology, parasitology, and hematology and a minimum of five year's experience after graduation as a responsible technician doing clinical laboratory work in a clinical laboratory satisfactory to the examiners.

The examination for license to work in a clinical laboratory as a technician covers the field of five subjects; bacteriology, serology, biochemistry, hematology, and parasitology. The prerequisites for entrance into the examination are one of the following:

(a) four year curriculum in medical or clinical laboratory technique leading to a bachelor's degree, the last year of which shall have been primarily clinical laboratory procedure. If the curriculum does not provide the above practical laboratory work, six months of apprenticeship in an approved clinical laboratory shall be required; or

(b) A college degree with a major in bacteriology, biochemistry, or essentially equivalent subjects, plus one year of apprenticeship training in an approved clinical laboratory. A year apprenticeship training in a public health laboratory may be accepted if the apprenticeship or university course included practical work in clinical biochemistry and hematology; or

(c) A minimum of five year's experience as a technician or apprentice doing clinical laboratory work in an approved clinical laboratory, except that university work which included courses in the fundamental sciences may be substituted to a maximum of four years for such experience in the ratio of 30 semester hours for each year of experience.

Examinations are given in the basic sciences for licenses to practice individual subjects. The minimum requirements for admission to the examination in biochemistry, bacteriology, serology or parasitology are: A master's degree or equivalent with a major in science for which the license is to be issued and one year of full time

postgraduate comprehensive experience in an approved hospital or university laboratory.

Clinical laboratory directors may receive into the laboratory for purposes of instruction individuals who are as yet untrained in laboratory procedures only for the purpose of training such individuals in an organized and balanced course of instruction. These apprentices shall not be intrusted with any examinations excepting under the immediate and constant supervision of the technologist or physician director of the laboratory or of a licensed technician.

The Department of Public Health of the State of California has held two meetings recently to discuss proposed amendments to the Clinical Laboratory Laws. The first meeting was held on November 9th in Berkeley, the second on December 8th in San Francisco. The Southern California section of the American Association of Clinical Chemists had two members present at each meeting.

Since the Enactment of the Clinical Laboratory Act in 1937, it has become apparent to the Department of Public Health that from an administrative and legal standpoint the Act needed clarification and possible amendment. In 1948 it was decided that the Act should be studied and that possible amendments should be discussed by the Advisory Committees and various groups interested in the clinical laboratory field. The suggestions made since that period were compiled and were presented for discussion at these meetings.

There are two main points which should be of interest to Clinical Chemists and to workers in other special fields. First, the problem of licensure in a specialty was kept open by leaving it up to the discretion of the examining board; second, it was agreed that specimens could be referred from a clinical laboratory to any other laboratory provided that the report clearly indicates where the work was done.

Although agreement could not be reached on all aspects of the law, there was general approval that the groups represented would sponsor the revised bill which will be presented to the State Legislature early in 1951.

Certificate Of Incorporation Of American Board Of Clinical Chemistry, Inc.,  
And Part Of The By-Laws Which Appeared In The Chemical & Engineering News.

CERTIFICATE OF INCORPORATION  
OF  
AMERICAN BOARD OF  
CLINICAL CHEMISTRY, INC.

\* \* \* \* \*

FIRST: The name of the Corporation (which may hereafter be referred to as the "Board") is: AMERICAN BOARD OF CLINICAL CHEMISTRY, INC.

SECOND: Its principal office in the State of Delaware is to be located at 317-325 South State Street, in the City of Dover, County of Kent, and its resident agent is The Prentice-Hall Corporation System, Inc., 317-325 South State Street, Dover, Delaware.

THIRD: The nature of the business and the objects and purposes to be transacted, promoted and carried on, are to do any or all of the things herein mentioned, as fully and to the same extent as natural persons might or could do, and in any part of the world, viz.:

To encourage the study, improve the practice, elevate and establish standards and advance the science of that specialized branch of chemistry entitled "Clinical Chemistry".

To grant and issue Certificates or other recognition of Special Knowledge in Clinical Chemistry to voluntary applicants who in accordance with the By-Laws and Rules and Regulations of the Board have established their fitness and competence, recipients of which Certificates shall not by virtue thereof become members of the Corporation nor have any right to vote or of voice therein.

To establish, maintain, alter and amend rules and regulations, standards and qualifications for the granting and issuing of Certificates and for their suspension, surrender and revocation.

To prepare and furnish in the public interest a registry of individuals with specialized knowledge in Clinical Chemistry who have from time to time been granted Certificates by the Board and to delete from such registry the name of any individual whose Certificate has been suspended, surrendered or revoked.

To acquire by purchase, lease or otherwise, real property within or without the State of Delaware and to purchase or otherwise acquire and to hold, own, mortgage or otherwise lien, pledge, lease, sell, assign, exchange, transfer or in any manner dispose of, and to invest, deal and trade in and with goods, wares, merchandise and personal property of any and every class and description, within or without the State of Delaware.

To enter into, make and perform contracts of every kind for any lawful purpose.

To borrow money for any of the purposes of the corporation and to draw, make, accept, endorse, discount, exe-

cute, pledge or otherwise dispose of promissory notes, bills of exchange and other negotiable or non-negotiable, transferable or non-transferable instruments and evidences of indebtedness.

To have one or more offices and to conduct any or all of its operations and business and to promote its objects within or without the State of Delaware without restriction as to place or amount.

To do any or all of the things herein set forth as principal, agent or otherwise, alone or in company with others.

The objects and purposes specified herein shall be regarded as independent objects and purposes and, except where otherwise expressed, shall in no way be limited nor restricted by reference to or inference from the terms of any other clause or paragraph of this Certificate of Incorporation.

The foregoing shall be construed both as objects and powers and the enumeration thereof shall not be held to limit or restrict in any manner the general powers conferred on the Corporation by the laws of the State of Delaware.

FOURTH: The corporation is not organized for profit and is not to have authority to issue capital stock.

The conditions of membership and other regulations governing the Corporation, its members and officers shall be fixed in the By-Laws of the corporation.

FIFTH: The name and place of residence of each of the incorporators, who are also members and directors, with the dates their terms as members and directors expire, are as follows:

Otto A. Bessey, Ph.D., Univ. of Illinois, College of Medicine, 1853 W. Polk Street, Chicago, Illinois. Term Expires, Annual Meeting in 1955.

Donald D. Van Slyke, Ph.D., Brookhaven National Laboratory, Upton, Long Island, N.Y. Term Expires, Annual Meeting in 1955.

Jos. W.E. Harrison, Sc.D., LaWall and Harrison, 1921 Walnut Street, Philadelphia, Pa. Term Expires, Annual Meeting in 1955.

Herbert H. Bunzell, Ph.D., 254 W. 31st Street, New York City. Term Expires, Annual Meeting in 1954.

Clarence W. Muehlberger, Ph.D., Michigan Dept. of Health, Lansing, Michigan. Term Expires, Annual Meeting in 1954.

Arnold E. Osterberg, Ph.D., Abbott Laboratories, North Chicago, Ill. Term Expires, Annual Meeting in 1954.

Oliver H. Gaebler, Ph.D., Henry Ford Hospital, Detroit 2, Michigan. Term Expires, Annual Meeting in 1953.

J. Murray Luck, Ph.D., Dept. of Chemistry, Stanford University, Stanford, Calif. Term Expires, Annual Meeting in 1953.

Michael Somogyi, Ph.D., Jewish Hospital, 216 Kings Highway, St. Louis, Mo. Term Expires, Annual Meeting in 1953.

The names of the officers to serve until the annual meeting of members in April 1951 are as follows:

President—Otto A. Bessey, Ph.D.  
Vice-President—Donald D. Van Slyke, Ph.D.  
Secretary-Treasurer—Jos. W.E. Harrison, Sc.D.

SIXTH: The Corporation is to have perpetual existence.

SEVENTH: The private property of its directors and members shall not be subject to the payment of corporate debts to any extent whatever.

EIGHTH: The membership of American Board of Clinical Chemistry, Inc. shall consist of not less than nine nor more than fifteen, each of whom shall be *ipso facto* a member of the Board of Directors and shall be vested with the management and control of the property, business and affairs of the Corporation. The incorporators shall constitute the initial membership of the Corporation and their term of office as members and Directors shall be as set forth in Article FIFTH of this Certificate of Incorporation.

Thereafter members of the Corporation and the Board of Directors shall be elected by the Directors in accordance with the By-Laws from a list of nominees supplied by the following designated as nominating societies: American Chemical Society, American Society of Biological Chemists and American Institute of Chemists, in such a manner that the Corporation and the Directors shall be composed of not less than five, who were nominees of the American Chemical Society; not less than three, of the American Society of Biological Chemists; and not less than one, of the American Institute of Chemists, and any additional members to a total of not more than 15 elected at large by a two-thirds affirmative vote of the Directors or from a list supplied by additional nominating societies who may have been designated as such from time to time by a two-thirds affirmative vote of the Directors.

The right of such additional nominating societies to submit nominees may be revoked or annulled at any time by a two-thirds affirmative vote of the Directors.

A majority of the Board shall constitute a quorum for all purposes unless herein otherwise provided. The Directors may, by majority vote of the whole number in office, designate one or more committees, each committee to consist of two or more members, which to the extent provided in the resolution of appointment or in the By-Laws of the corporation, shall have and may exercise the powers of the Directors or of the Board as a body in the management of the business and affairs of the Corporation, and have power to authorize the seal of the Corporation to be affixed to all papers which may require it.

The Corporation may in its By-Laws confer other powers upon the Directors, in addition to the powers and authorities expressly conferred upon them by law and this Certificate of Incorporation.

NINTH: Meetings of the Board of Directors may be held without the State of Delaware, if the By-Laws so provide. Sub-

(Continued on page 6)

ject to any provision contained in the statutes, the corporation may have an office or offices and keep its books outside of the State of Delaware at such place or places as may be from time to time designated by the Directors or in the By-Laws of the Corporation.

TENTH: The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon the Corporation and the Board of Directors herein are granted subject to this reservation.

### BY-LAWS

(Reprinted by permission of Chemical & Engineering News).

#### I. Purpose and Organization

The purpose of the American Board of Clinical Chemists is "To encourage the study, improve the practice, elevate and establish standards and advance the science of that specialized branch of chemistry entitled 'Clinical Chemistry'; to grant and issue certificates or other recognition of Special Knowledge in Clinical Chemistry to voluntary applicants who in accordance with the Bylaws and Rules and Regulations of the Board have established their fitness and competency; to prepare and furnish in the public interest a registry of individuals with specialized knowledge in clinical chemistry who have from time to time been granted certificates by the Board."

#### II. Qualifications for Certification

A. Presentation of evidence of satisfactory moral and ethical standing.

B. Educational background in biologic sciences equivalent to the requirements for a Doctor in Science degree as prescribed by, or an earned Doctor in Science or equivalent degree from a university belonging to the Association of American Universities, an accredited institution of the AMERICAN CHEMICAL SOCIETY, a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association, or of any other institution which in the opinion of the board has a satisfactory educational standard.

C. Applicants with a Doctor in Science degree as defined above shall have had accredited courses in analytical, organic, physical, and biological chemistry.

D. Applicants with a Doctor of Medicine degree shall have had the chemical training required above.

E. The word "equivalent" as used in the section above shall be interpreted to assure that under special conditions, certain of the requirements relative to formal education may be waived, providing the applicant meets other qualifications.

F. Applicants shall meet one or more of the following requirements:

1. Three years' full time experience in a laboratory maintaining a standard in clinical chemistry acceptable to the board.

2. Held for a period of five years or more a professional rank (assistant professor or above) in biological chemistry, clinical chemistry, pathological chemistry,

toxicological chemistry, or biological assay, in a college or university acceptable to the board.

Candidates with qualifications under this section, acceptable to the board, may be certified without examination at the discretion of the board.

G. A candidate without the full formal educational requirements as set forth above, who shall have practiced clinical chemistry for a period of 10 years in a senior position in a clinical laboratory acceptable to the board, may be certified without examination at the discretion of the board.

H. Candidates shall pass written and/or oral examinations provided by the board, based upon broad principles of clinical chemistry. However, candidates who file applications prior to July 1, 1952, whose qualifications based on training and experience satisfy the board, may be certified without examination.

#### III. Application and Fees

Application must be made in triplicate on the special form provided and must be complete, including letters, etc., before it can be considered.

A fee of \$35 must accompany the application. This figure is based on the experience of similar boards and provides for costs of administration, examinations, etc. The board is a nonprofit corporation. None of its members receives compensation for services.

If certified without examination, \$10 of the fee will be returned.

If the candidate fails in his examination, he will be admitted to a second examination after one year, but not later than three years, without additional fee. After re-examination or the expiration of the three-year period, the applicant must file a new application and pay an additional fee before another examination will be given.

If for any reason, the applicant is deemed ineligible for examination by the board, all but \$10 of the fee deposited will be returned. However, the application fee is not returnable after the candidate has officially been accepted for examination and notified to report for the same.

#### IV. Certification

Certificates issued by the Board are subject to revocation in the event that

A. The candidate so certified shall have made any misstatement or misrepresentation of a material fact in his application, or in any other communication to the board or its representatives, which misstatement or misrepresentation affected the eligibility of the individual so certified.

B. The issuance of such certification has been contrary to or in violation of any rules, laws, or regulations of the board.

C. It is ascertained that the individual so certified is not eligible in fact to receive such certification.

D. The individual receiving such certification shall, prior to the issuance of such certificate or thereafter, have been convicted by a court of competent jurisdiction of a felony or any misdemeanor, which misdemeanor in the opinion of the board shall involve moral turpitude.

If there are questions concerning eligibility for certification, the applicant should present a completed application so

that the board may have full information on which to base a decision. The secretary can not make eligibility rulings.

Since the board meets not oftener than twice annually, several months may elapse before final action can be taken on an application.

Application forms will bear serial numbers and be issued in the name of the applicant. Such forms will be valid for filing purposes for a period of one year from the date of issue.

#### Application Forms

Requests for application forms should set forth the name of the applicant in the form it is to be recorded, be accompanied by a fee of \$1.00 to cover clerical and mailing costs, and addressed to Jos. W. E. Harrison, secretary-treasurer, American Board of Clinical Chemistry, Inc., c/o LaWall and Harrison, 1921 Walnut St., Philadelphia 3, Pa.

### STATE OF ASSOCIATION

(Continued from page 3)

our chemical colleagues, we have appointed a special Exhibit Committee, Dr. Albert Sobel, chairman, to prepare a graphic exhibit.

The answers to the brief questionnaire on membership in the American Association for the Advancement of Science, which has been mailed to the membership together with the bill for the 1951 membership dues, will assist us in the question of affiliation or association with the A.A.A.S. which should prove a valuable relationship in numerous respects.

The quality of our professional performance is closely linked with our professional status. In order to promote the employment of qualified clinical chemists, we are taking steps to place collective advertisements as a free service to our membership and to clinical chemists in general in appropriate periodicals, listing both Open Positions and Positions Wanted. The membership is urged to communicate with the Secretary of the Association, Dr. Max M. Friedman, in this matter and also to advise institutions and organizations, interested in the services of a clinical chemist, to transmit to us the specifications of such situations.

I feel sure that the membership joins me in thanking the members of all Committees and the officers of the local sections for the time and effort they have devoted to the affairs of the Association in 1950.

December 15,

1950

Harry Sobotka, Ph.D.

\*\*\*\*\*

New York Section

The first of a series of round table discussions was held by the Metropolitan New York Section of the AACC Wednesday, November 29, at the Woman's Clinic of The New York Hospital. The topic was "Body Fluids and Electrolytes".

Leon C. Chesley, Ph.D., Biochemist, Margaret Hague Maternity Hospital, Jersey City, N.J., moderator of the conference, opened the discussion with a presentation of the electrolyte problem as it affected the chemist, clinician, and treatment of the patient.

Roy W. Bonsnes, Ph.D., Chemist, Woman's Clinic, The New York Hospital, New York, N.Y., discussed the various methods used today for the determination of electrolytes in biological material. He traced the development of flame photometry for the determination of sodium and potassium. The chemistry involved in the estimation of chloride and bicarbonate by various methods was presented. Members of the audience

participated freely in giving their experiences with the various methods and the reasons for certain analytical methods failing when abnormal conditions were encountered.

Methods for the determination of sodium, potassium, chlorides and bicarbonates were discussed by Roy W. Bonsnes, Ph.D., Chemist, The Woman's Clinic, The New York Hospital, N.Y. Methods for the determination of extracellular fluids were discussed by Max M. Friedman, Senior Chemist, Queens General Hospital, Jamaica, N.Y. Eugene Y. Berger, Research Assistant at the New York University Research Service, Goldwater Memorial Hospital, N.Y. discussed the clinical applications of these determinations.

In the general discussion Dr. Berger presented the tentative view that the best data now available indicates the total body fluid to be only 63 per cent of the body weight as compared with the previously accepted value of 70 per cent. Of this 63 per cent, 50 per cent is still considered intracellular fluid. The 13 per cent extracellular fluid is composed of a plasma volume of about 4 per cent and an

interstitial fluid volume of about 9 per cent of the body weight.

The next meeting of the Metropolitan New York Section will be held on Thursday, February 1, 1951 at 8:30 p.m. in room M007 of the Woman's Clinic of the New York Hospital, 530 East 70th St., New York City.

A round table discussion on "Liver function and liver function tests" will be held with Warren M. Sperry, Ph.D., New York City Psychiatric Institute, acting as moderator. Other participants will be Alexander B. Gutman, M.D., Mount Sinai Hospital, New York City; Louis B. Dotti, Ph.D., St. Luke's Hospital, New York City, and John G. Reinhold, Ph.D., University of Pennsylvania Hospital, Philadelphia, Pa.

Philadelphia Section

The sixth meeting of the Philadelphia Section of the AACC was held on Thursday evening, November 30, 1950, at Hahnemann Medical College. Miriam Reiner of Mt. Sinai Hospital, New York City, spoke on "The Application of Electrophoresis to Serum Protein Problems".

(Continued on page 9)

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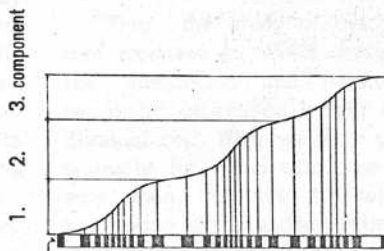


Image of cell channel

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The following is a partial condensation of a talk presented by Samuel Soskin, M.D., Ph.D., Director, Medical Research Institute and Dean of the Postgraduate School, Michael Reese Hospital, Chicago, at a meeting of the Chicago Section of the Association, September 6, 1950.

We should like to be able to publish the entire speech. Since this is impossible because of lack of space we have given as much of it as possible in Dr. Soskin's own words. These sections are in quotation marks. In those sections which we have condensed we have tried in so far as is possible to maintain both the spirit and the meaning of Dr. Soskin's original manuscript. (RWB)

"During the past two decades, metabolic research has turned in increasing measure from the study of the whole living organism and of the isolated perfused whole organ, to the study of the metabolism of isolated tissues by the Warburg technique and the identification of the enzyme systems involved. This has resulted in the accumulation of a huge mass of data of great interest and value to the biochemist in outlining those metabolic processes which can proceed in the living cell, but which has been rather disappointing to the physiologist in determining those metabolic processes which do proceed under a particular set of circumstances."

Dr. Soskin went on to cite examples of enzyme reactions which do occur *in vitro* but which do not seem as all important *in vivo*, and that the enzyme chemist has not found the basic defect in diabetes mellitus. The reason, he said, is simple. There probably is no disturbance at the cellular level but in the regulation of carbohydrate metabolism, involving the whole organs.

Further difficulties of the enzyme chemist lie in "the fact that metabolism in the whole living organism is a highly integrated and finely regulated series of reactions. In fact, it is this integration and regulation which chiefly distinguishes life processes from the chemical reactions which the biochemist can study *in vitro*".

The intact muscle was cited as an example of a system difficult for the

enzyme chemist to duplicate because of its numerous regulations.

Isotopes were cited as beginning to aid in correcting the knowledge gained from enzyme studies with the pathways of *in vivo* metabolism.

Although intermediary carbohydrate metabolism is relatively well understood, little is known of the site of the mechanism action of insulin. Dr. Soskin said, "It is generally agreed that insulin facilitates the entry of sugar from the blood and extracellular fluid into tissue cells".

Insulin has been reported to influence the inhibition of the hexokinase system, but these *in vitro* data are not completely consonant with the data from the whole animal and the *in vitro* data has not been generally confirmed.

Levine and co-workers have assumed that insulin might not effect "any of the known enzyme systems, but might affect some property of the fine structure of the organized cell surface,....". Experiments on the rate of disappearance of galactose from the blood of nephrectomized eviscerated dogs and rats support this contention. Thus, "it is clear," Dr. Soskin said, "that insulin must, in some way, influence the permeability of the cell surface or membrane. This work may help to explain why it is difficult to study regulatory mechanism unless the cell structure is intact."

"It is, therefore, beginning to appear that no matter how gently the biochemist treats living tissues, he cannot hope to fathom its secrets by analytical methods. His greatest success thus far has been with the study of the behavior of small molecules in aqueous solution. One may designate such studies as the biochemistry of content or 'arithmetic biochemistry'. But the essential characteristics of the living cell reside in the form or structure of its macromolecular components. For example, two proteins which have identical molecular weights and amino-acid contents may be demonstrated to have different structural and, therefore, different biological characteristics. It is for this reason that biochemists are beginning to use such techniques as histo- and cyto-

chemistry, x-ray diffraction, electron microscopy, etc., to study the biochemistry of structure, which may be called 'geometric biochemistry'."

"The recent use and value of structural approach to metabolic problems is well exemplified in the successive developments in our knowledge of the biochemistry of muscular contraction. Analytical biochemistry carried us from the Hopkins-Meyerhof era, when muscle glycogen was supposed to break down directly to lactic acid; through the Lundsgaard stage, when creatine phosphate was introduced into the scheme; to the current concept involving a series of breakdown products, with the ATP system as the energy transfer mechanism. However throughout this development no insight was gained into the actual application of the metabolic energy to the contractile elements of the muscle. The first real advance in this regard came with Englehardt's discovery that myosin, the protein composing the organized contractile fibrils, itself catalyzes the splitting of adenosine triphosphate (ATP). This basic finding (relating structure to function) was further developed by Szent Gyorgyi and co-workers, and others. It now appears that the resting muscle consists of structural units composed of four chief elements: myosin, actin, ATP and potassium. At rest, these rod-like units lie end-to-end, in orderly rows. A contraction consists of the activation of myosin to split ATP, and liberate energy; and a simultaneous re-alignment of the rods, so that they no longer are end-to-end. The result is a shortening and widening of the muscle."

"Thus, the study of cytoarchitecture promises to reveal the basis for the integration and regulation of metabolic processes within each individual cell. When we have gone sufficiently far along this pathway, we may then be able to apply this knowledge to the understanding of the metabolism of the intact animal, in terms of the influence of various regulators (environmental, hormonal, and nervous) on specific enzyme and other catalytic systems".

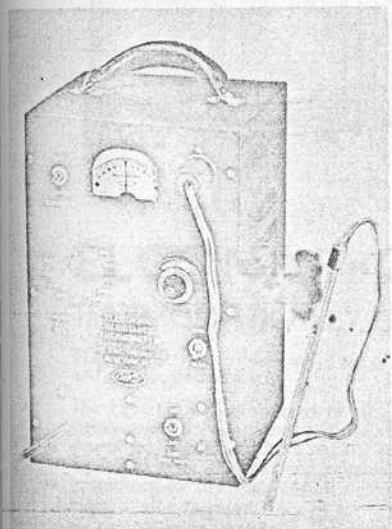
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## NEW APPARATUS

A new Electronic Resistance Thermometer, complete with bridge and bulb, and far less expensive than non-electronic complete resistance thermometer equipment, has recently been introduced by the Emil Greiner Company, 20-26 North Moore Street, N.Y. C. 13.

The manufacturers believe that in contrast to ordinary precision resistance thermometers, the new electronic instrument is foolproof and simple to operate—any laboratory technician can use it accurately. It is precise as well as rugged and dependable in the manner of most electronic instruments. Simple to install, it plugs in like a radio and no permanent installation is necessary.



Employing a new patent pending resistance bulb in which a tungsten coil is sealed in solid pyrex glass or molybdenum in solid quartz, the Electronic Thermometer provides rapid response. A new principle in the balancing bridge simplifies calibration. The instrument is practically direct reading, eliminating complicated calculations.

Having 13,000 Divisions, the new Electronic Resistance Thermometer measures temperatures to 1000°C. with an accuracy of 0.1°C. and a sensitivity of .01°C. Because of the dead beat balance indicator and single range switch and slidewire, rapid reading of the bridge is possible.

## LOCAL SECTIONS

(Continued from page 7)

In her talk Miss Reiner emphasized the importance of electrophoresis as an aid to the clinical chemist in following the course of certain diseases as well as the effect of therapy. She pointed out that "the wider use of electrophoresis in many laboratories will lead to a better understanding of the processes of disease. It is also

useful in determining the purity of biological products by their mobility, such as albumin, gamma globulins, hormones, etc."

Pictures of all types of electrophoresis apparatus were shown as well as the patterns obtained with each one. An analysis of normal serum protein patterns was followed by a series of pathological protein changes in various types of disease.

At the business meeting which followed, John G. Reinhold was re-elected president of the Philadelphia Section. Other officers elected were: W.R. Brown, vice-president; Ellenmae Viergiver, secretary-treasurer.

The next meeting will be held Thursday, January 25, 1951, at the Pennsylvania Hospital, 8th and Spruce Streets. Dr. David Seligson of Cox Institute, Hospital of the University of Pennsylvania, will speak on "The Determination of Keto-acids with the aid of Paper-Chromatography". Dr. Dwight McNair Scott of the Research Department, Children's Hospital, will speak on "Paper Chromatography of Sugars and Amino Acids".

## Boston Section

William Fishman, Ph.D., the chief chemist of the Cancer Research Unit at Tufts Medical College, addressed the last meeting of the Boston Section of the American Association of Clinical Chemists on November 16th. He spoke on Enzymes Studies in Cancer.

Dr. Fishman discussed first the overall importance of enzymes and the methods by which they are determined in tissues.

In his own work on cancer, Dr. Fishman has found the enzyme beta glucuronidase to be increased in human cancer tissue. His method for the determination of beta glucuronidases uses phenolphthalein glucuronide as a substrate. This substance can be isolated from the urine of rabbits after the animals have been injected with phenolphthalein. Beta glucuronidase splits phenolphthalein glucuronide to glucuronic acid and phenolphthalein which can be readily

colored colorimetrically. The units of enzyme activity are expressed as micrograms of phenolphthalein produced per hour under standard conditions.

High values for beta glucuronidase activity are found by him in cancer of breast, uterus, lung and other tissues. These increased values for glucuronidase activity correlated well with the increased amount of lactate arising in tumor tissue through glycolysis.

In cancer of the cervix the beta glucuronidase activity of the vaginal fluid is increased. Large amounts of the enzyme are also found in the vaginal fluid after the uterus and ovaries are removed surgically. In menstruating women a low point is noted in midcycle. In the vaginal fluid of the controls the beta glucuronidase activity is about 300 units per gram; those with cancer about 800 units per gram. The enzyme activity is much higher in the vaginal fluid of women after the menopause. The enzyme activity of the blood is not of diagnostic value although it averages 80 per cent higher in those with cancer.

## NACL TO HOLD CONVENTION

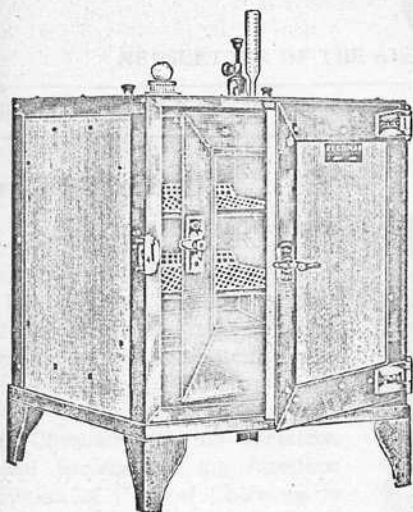
The National Association of Clinical Laboratories will hold its 1951 Convention at the Hotel McAlpin in New York City, April 6-7, 1951. President of the NACL is Robert M. Johnson. Michael Horti is executive secretary, Alexander S. Michaelson is vice-president and Nathaniel Langsam is treasurer. Many member of the NACL also belong to the AACC. The first issue of the NACL Bulletin was mailed to its members in October. Its editorial staff consists of Frederick C. Truelove, Joseph Chemaik and Michael Horti.

## NEW GROUP TO RATE

(Continued from page 1)

Director Crime Detection Laboratory, State Department of Health Laboratory, Lansing, Mich. A.E. Osterberg, Ph.D., Associate Clinical Investigator, Abbott Laboratories, North Chicago, Ill. Michael Somogyi, Ph.D., Biochemist, Jewish Hospital of St. Louis, St. Louis, Mo.

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Each	\$110.00	\$161.70	\$200.20	\$327.80	\$395.00
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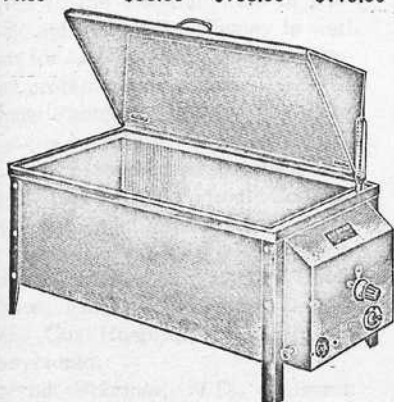
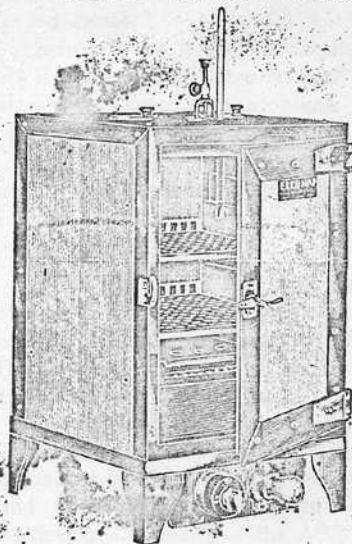
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Watts	800	1500	800	800	1000	1500	1500
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Without Cover	\$91.30	\$115.50	.....	\$214.50	.....	\$325.00
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# The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 3, NUMBER 2

MARCH 1951

## Oser Chairman of Boston Symposium

Bernard L. Oser, Ph.D., Director of Food Laboratories, Inc. Long Island City, N.Y., will be chairman of a symposium on Newer Analytical Techniques in Clinical Chemistry to be presented jointly by Division of Analytical Chemistry of the American Chemical Society and the American Association of Clinical Chemists in Boston on the afternoon of Tuesday, of April 3rd, during the 119th Meeting of the American Chemical Society.

The program will open with a paper on "Quantitative Ultramicrochemistry in Clinical Laboratories" by Albert E. Sobel, Ph.D., Head of the Department of Biochemistry, Jewish Hospital of Brooklyn. Dr. Sobel is author of many papers on micro methods.

Albert L. Chaney, Ph.D., Director of the Albert L. Chaney Chemical Laboratory, Glendale, California, will discuss the "Use of Distillation for Isolating of Trace Constituents as Applied to the Determination of Protein-Bound Iodine." Dr. Chaney is well known for his work on the determination of protein-bound iodine.

Flame Photometry will be the topic of a paper by Roy W. Bonsnes, Ph.D., associate professor of biochemistry, Cornell University Medical College.

"A talk on Alpha Keto Acids in Blood and Urine Studied by Paper Chromatography" has been prepared by David Seligson, Ph.D. and Bernard Shapiro of the Cox Hospital, University of Pennsylvania.

Konrad Dobriner, M.D., research chemist Sloan-Kettering Institute, Memorial Hospital of New York, will speak on "Infrared Spectrometry as an Analytical Tool in Biochemical and Clinical Investigations." Dr. Dobriner has done considerable work on the intermediary metabolism of steroids.



Bernard L. Oser, Ph.D. chairman of symposium.

## MEETINGS HELD TO REVIEW CALIFORNIA LAW CHANGES

Meetings to discuss proposed amendments to the California Clinical Laboratory Laws were held in San Francisco November 9th and December 8th by M.H. Merrill, M.D., of the State Board of Health who is in charge of administering the laws.

Members of various groups affected by the laws were present. The Southern California Section of the AACC was represented by Arnold G. Ware and Kenneth Johnson.

The proposed amendments were discussed in detail and it was suggested by Dr. Merrill that they should be presented to the California legislature under a joint sponsorship with all groups represented at the hearing in support of the agreed-to amendments.

As we go to press the editorial board of THE CLINICAL CHEMIST has not been notified of any action taken by the Executive Committee of the Association on the matter of certification.

## Plans Completed for Third Annual Meeting

The Third Annual Meeting of the American Association of Clinical Chemists will be held April 2-3 in Boston during the 119th Meeting of the American Chemical Society. Joseph Benotti, chairman of the Boston Section of the AACC is in charge of all arrangements.

There will be a dinner meeting of the Executive Committee on April 2nd at which Association problems will be discussed.

The scientific program and the stated annual meeting have been arranged so that both events will be held on the same day.

On the morning of April 3rd papers of general interest to clinical chemists will be presented at sessions of the Division of Biological Chemistry of the American Chemical Society.

A symposium on Newer Analytical Techniques in Clinical Chemistry, organized by Bernard L. Oser, Ph.D. and sponsored by the Division of Analytical Chemistry of the ACS, will be offered on the afternoon of April 3rd. This will be followed by a business meeting for Association members to be held in the same room.

The annual dinner will take place that evening in Parlor A of the Hotel Statler at 6:30 p.m. Tickets for the dinner may be purchased in Boston and Mr. Benotti requests that these be bought, if possible, by 4 p.m. April 2nd so that plans can be made for the number in attendance.

Members not planning to arrive in Boston by that time may, if they desire, write to Mr. Benotti at the Joseph H. Pratt Diagnostic Hospital, Harrison Ave. and Bennet St. Boston 11, Mass. making reservations for the dinner so that tickets may be saved for their arrival.

Newsletter of the American Association  
of Clinical Chemists, Inc.

P.O. Box 123  
Lenox Hill Station New York 21, N.Y.

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*Views expressed in the editorials and  
opinions advanced by contributors do not  
necessarily represent the official position  
of the American Association of Clinical  
Chemists.*

**VOL. 3, NO. 2**

**MARCH 1951**

**APRIL IN BOSTON**

Progress in the sciences goes beyond the mere accumulation of individual knowledge. As James B. Conant says in his new book "Science and Common Sense", "Whatever the tension of the times... we must foster science; and that means fostering freedom of inquiry, of discussion and of publication."<sup>\*</sup>

One of the best methods for dissemination of scientific information in keeping with Dr. Conant's precepts is the scientific meeting. These meetings not only publicize the latest advances in science, but offer an opportunity to those whose everyday pursuit do not allow them an opportunity to meet and talk with the individuals directly concerned with the advancement of their profession.

This year the Third Stated Annual Meeting of the AACC will be held in Boston, Mass. in conjunction with the 119th National Meeting of the American Chemical Society, April 1-5, 1951. The arrangements for this meeting, the annual association dinner, and joint symposium with the Division of Analytical Chemistry entitled "Newer Analytical Techniques in Clinical Chemistry", will be described elsewhere in this issue.

This is the year of great decisions for the clinical chemists and our association as their representative. We see the advent of an American Board of Clinical Chemistry, Inc., that has set

up certain qualifications for certification. We also see many state legislatures wrestling with ideas for licensure, some recognizing clinical chemistry as a profession, others seeing us as usurping the practice of medicine. One can almost say that this is the year of "growing pains". Therefore it is most important that every member of our association make greatest effort to attend the Boston Meeting. Adequate national representation must be achieved so that decisions can be made on a national rather than local scale.

For a small organization we have been fortunate in having exceptionally well attended national meetings. With the many important measures to discuss, let us surpass our previous attendance records this time.

See you all in Boston!!

*\*Quotation by Dr. Conant reprinted with permission from Yale University Press.*

**NEW MEMBERS ELECTED BY  
THE EXECUTIVE COMMITTEE  
FEBRUARY 21, 1951**

- Diederich, Sister Mary M.; Mount Mary College, Wis.
- Goldstein, Gilbert; Brooklyn, N.Y.
- Hoffman, Elizabeth; Trenton, N.J.
- Kojima, Inoyo; Honolulu, T.H.
- Landry, Edgar; New Bedford, Mass.
- Lemont, Esther M.; Milwaukee, Wis.
- Reingold, Alfred M.; Philadelphia, Pa.
- Reiser, Raymond; College Station, Tex.
- Scharf, Charlotte; New York, N.Y.
- Sherman, Marion K.; Melrose, Mass.
- Vanderau, Margaret; Philadelphia, Pa.

**QUIDNUNCS**

Bernard L. Oser and Warren M. Sperry been elected Councillors to the American Chemical Society for 1951 from the New York Section of the ACS. They will serve during the year in which the New York Section will be hosts to the chemists of the world for the 75th Anniversary of the ACS.

\*\*\*\*\*

H.S. Osgood, recently biochemist at St. Vincent's Hospital and Hamot Hospital in Erie, Pa., has accepted the position of chemist at the Swedish Hospital in Seattle, Wash.

**BOX 123**

*Letters From Members*

**A SUGGESTION**

Gentlemen:

May I join the chorus of hosannahs for the excellence of the editorial content and format of The Clinical Chemist? Each succeeding issue reflects an editorial policy in keeping with the high professional standards for which the Association stands.

Would it be feasible through the columns of Chemical and Engineering News to offer to send free copies of The Clinical Chemist (for a limited period, perhaps) to any member of the profession and to include in each issue a return coupon soliciting information regarding membership in AACC. I predict that such action would stimulate a substantial interest on the part of potential members who may not be sufficiently familiar with the Association.

Cordially,

Long Island City, N.Y. Bernard L. Oser

**VIEWS ON CLINICAL CHEMISTRY**

Dear Sirs:

Clinical Chemistry has been an avocation to me as well as a vocation since 1906, when it was just becoming envisioned as a logical development of the then physiological chemistry. With these years of experience as a background I have been able to crystallize certain impressions.

Institutional clinical chemistry and field or private clinical chemistry should be developed as two distinct and yet coordinated fields. They require different viewpoints and somewhat different standards, which should in some way be correlated. We will fail if we develop only a highly technical expensive research institutional service and neglect to develop a high grade practical field service within the reach and the means of the average community.

This service should be developed to render such service as will aid the physician in his diagnosis and case progress, to aid to sift out such cases as do not need the expensive hospitalization and on the other hand detect such cases which should be hospitalized before they reach such a stage where such service is terminal and only of very limited community value. This means a very different viewpoint from that of most of the members of the Association as far as I can observe.

Sincerely yours,

Cranford, N.J. Henry J. Goeckel

\*\*\*\*\*

Miriam Reiner, formerly Assistant Chemist at Mount Sinai Hospital, New York has become Chemist at the Galinger Hospital in Washington, D.C.

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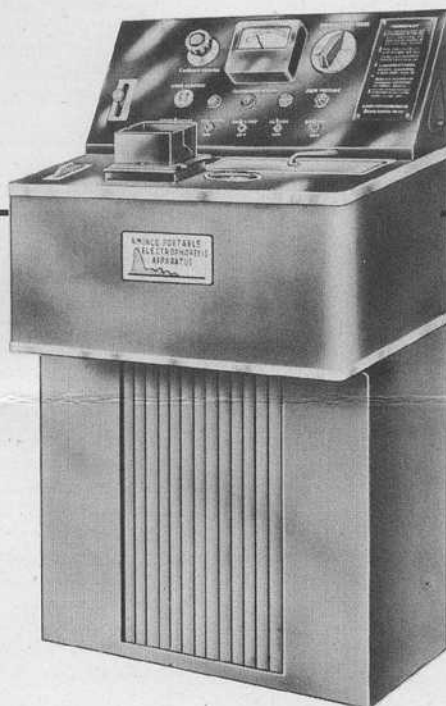
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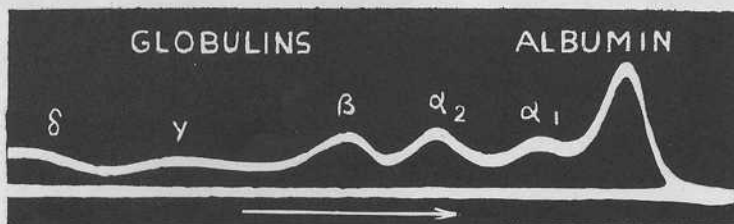
Temperature Control—plus-minus 0.02°C.

Current Range—1-30 milliamperes.

A.C. Ripple—less than 0.03% of total current.

An unretouched diagram, actual size, of pathological human serum.

**WRITE FOR BULLETIN 2281-K**



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## BRAZILIAN PROFESSOR JOINS ASSOCIATION

Although the American Association of Clinical Chemists was organized as a professional society for clinical chemists in the United States in the two years of its existence it has attracted much attention from the rest of the western hemisphere. Clinical chemists in Canada and the West Indies have joined the Association and recently the first member from South America was enrolled.

She is Maria Isabel Mello, professor of biochemistry at the Instituto Oswaldo Cruz, Rio de Janeiro, Brazil.

A graduate in pharmacy at the Faculty of Pharmacy, Santa Maria, Rio Grande do Sul, Brazil and in microbiology and biochemistry at Instituto Oswaldo Cruz, she is the author of 34 papers, mostly in South American Journals, but some of which have appeared in the Proceedings of the Society for Experimental Biology and Medicine and the Journal of Clinical Endocrinology.

When asked about the status of clinical chemistry in Brazil Professor Mello replied: "There are many private clinical laboratories in Rio, scientific institutes as well as government and autarchic entities... which have good clinical laboratories with modern equipment. Some of them started scientific research besides the heavy routine work. Since 1931 there are laws regulating the installation of a clinical laboratory and the degree needed for work in it. Degrees in medicine, pharmacy, chemistry or engineering are accepted. In Rio and S. Paulo there are special post-graduate courses in Clinical Chemistry which take from 1-2 years."

## NEW MAGAZINE ANNOUNCED

Labitems, a new publication of general interest for laboratory personnel has just been issued by the Emil Greiner Company.

The new magazine contains in its 32 pages articles of technical and general information, highlighted by news and photographs of more than 50 new products. Some of the items reported on are balances, clamps, vapor pressure bombs, colorimeters, manometers, cartesian manostats, burets, titrimeters, etc.

Free copies of Labitems are available from the Emil Greiner Company, 20-26 North Moore Street, New York 13, N.Y.

## NEW APPARATUS

One of the most important tools for investigation of proteins is the Tiselius electrophoresis apparatus. Because of the work done by Longworth and others this technique has been highly developed and the method has proven to be valuable when applied to clinical problems.

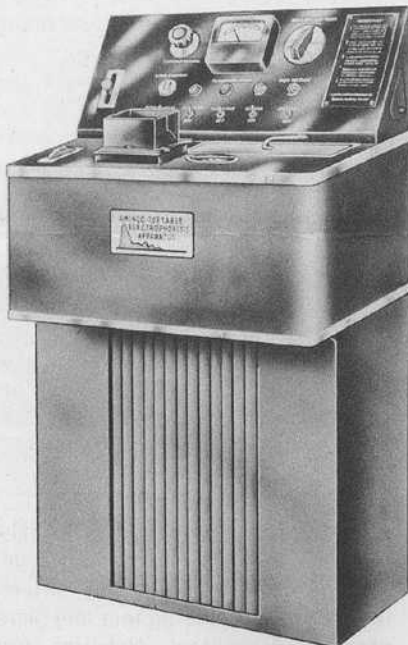
This has brought about a need for compact self-contained equipment for small laboratories and hospitals which has been met by portable electrophoresis apparatus such as the one manufactured by the American Instrument Company according to a prototype designed by Kurt G. Stern.

Small enough to be wheeled through a door the instrument can be run on a 115-volt 60-cycle electrical outlet and contains its own control panel, stabilized high-voltage power supply, rapid dialysis facilities and refrigeration system.

The basic unit measures 24x18x13 inches with an overall height of 46.5 inches. A 90 inch optical path length is obtained by a system of front-surface mirrors. There is a two-fold front magnification and the screen size will take standard cut film (3.25x4.25 inches). An a.c. power supply furnishes the necessary high-voltage with a current range of 1 to 30 milliamperes with a ripple of less than 0.03%.

There are seven mirrors which are 0.5-inch thick optical flats front-surface coated and protected by a coating of silicon monoxide. High optical tolerance can be preserved because the optical components of the schlieren system are contained in an air-conditioned environment.

A vibration-free refrigeration system and a built-in condensing unit eliminates auxiliary refrigerating aids and drying agents to prevent lens fogging.



Further information about this apparatus can be obtained from the American Instrument Co., Inc. Silver Springs, Md.

## NEW APPARATUS

A new type of Bunsen Burner, the Touch-O-Matic, which operates automatically at the touch of a finger, is announced by Standard Scientific Supply Corp. 34 W. 4th St. New York 12, N.Y.

The flame is lit by pressure on a platform and is extinguished when the pressure is released. Furthermore the platform serves as a comfortable work-height hand rest while the burner is in use. For a continuous flame it is only necessary to depress the platform and turn it slightly. By reversing the procedure the flame goes out.



A small, adjustable pilot-light, protected by a rotating draft guard which also keeps the main flame burning steadily, instantly ignites the main burner when the hand touches the platform. Only this pin point flame is on when the burner is not in use. All the unnecessary heat and fumes of constantly flaming burners, as well as the ever-present danger of personal injury, are thus eliminated.

The Touch-O-Matic Burner will take any type of gas; natural, manufactured, mixed or bottled, and the burner assembly is easily detached for cleaning.

## CHANGE IN MEMBERSHIP CERTIFICATES ANNOUNCED

Certificates of membership in the American Association of Clinical Chemists will be stamped with a gold seal instead of a blue one as previously announced.

They may be purchased by sending a check or money order for \$4.00, payable to the American Association of Clinical Chemists, to Dr. Louis B. Dotti, Chemistry Department, St. Luke's Hospital, 113th St. and Amsterdam Ave., New York 25, N.Y. accompanied by a letter specifying the way in which the name is to be inscribed on the certificate and whether or not a degree is to be included with the name. No laboratory or hospital affiliations can be inscribed.

## Chicago Section

Jacklyn B. Melchior, Ph.D., Assistant Professor of Biochemistry, Stritch School of Medicine, Loyola University, was the guest speaker at the February 2, 1951 meeting of the Chicago Section of the AACC. Dr. Melchior spoke on "Competitive Inhibition as a Biochemical Tool".

Dr. Melchior showed that structural analogues of metabolites are frequently found to inhibit enzymic processes. This is believed to result from a competition between the analogue and the metabolite for an enzyme surface. Such inhibitors generally exhibit a striking specificity for an enzyme or a group of enzymes. Because of this characteristic specificity, competitive inhibitors provide a tool which can be used to solve many practical and theoretical problems in biochemistry. To illustrate the use of competitive analogues, Dr. Melchior cited specific examples which were used to label enzyme systems.

The last meeting in 1950 was held on December 1 at which Dr. Henry B. Bull, Chemistry Department, Northwestern University Medical School spoke on "Determination of Molecular Weights of Proteins in Spread Monolayers." Dr. Bull said it has been found that a number of proteins when spread in monomolecular layers on surfaces of five per cent ammonium sulfate form so-called gaseous films. The application of the gas laws in two dimensions permits the calculation of the molecular weight and of the gaseous area of the proteins from force-area measurements at pressures below one dyne per centimeter.

The molecular weights of a series of proteins determined in this manner are found to agree quite well with those determined by more conventional methods. It has been found that the protein molecules on the surface can exist in a compact form (state B) and in an expanded form (state A). Low film pressures and longer times favor the conversion of state B into state A. The various proteins show considerable individuality in regard to their tendency to expand on the surface.

On January 5, 1951 Dr. Clarence Cohn, Department of Biochemistry, Medical Research Institute, Michael

Reese Hospital, spoke on "Clinical Methods for the Estimation of Plasma Protein Fractions and Their Clinical Significance. Dr. Cohn is the vice-chairman of the Chicago Section.

## New York Section

"Liver Function, and Liver Function Tests" was the topic of the second in the series of round table discussions scheduled by the Metropolitan New York Section. The meeting was held February 1, 1951 at the Woman's Clinic of the New York Hospital.

Alexander B. Gutman, M.D., Mount Sinai Hospital, New York City, discussed liver disease and liver function from the point of view of the clinician. He emphasized that liver dysfunction can basically be divided into two broad categories, hepatic cell disease and biliary tract disease. The clinician hopes that laboratory examinations would help him make a clear distinction between the two. Often, however, hepatocellular and extrahepatic disease occur together, one being the cause and the other the effect. When this occurs good judgement in the choice of laboratory examinations and intelligent interpretation of laboratory data are required to make the diagnosis. Dr. Gutman also cited the case where extrahepatic disease may have to be differentiated. A stone in the common duct would give data showing obstruction, yet the obstruction would not be complete. Carcinoma of the head of the pancreas would completely obstruct the common duct. Both cases would give similar liver function tests, but only in the complete obstruction would there be a total absence of bile in the stool.

Louis B. Dotti, Ph.D., St. Luke's Hospital, New York City, spoke on the use and biochemical reactions of the various flocculation and turbidity tests. Dr. Dotti showed that the cephalin flocculation test measures an abnormal amount of gamma globulin, but that normal serum albumin contains an inhibitor that will prevent flocculation. The thymol turbidity test depends upon the interaction of the buffered thymol reagent plus protein and phospholipid. Here too, globulins may play an important role. It is believed

(Continued on page 6)

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## LOCAL SECTIONS

(Continued from page 5)

that the reaction to the thymol reagent may be correlated with regeneration of hepatic cells, and may be the reason why an abnormal thymol turbidity test may persist after other tests have become normal. Dr. Dotti also discussed the use of the colloidal red and colloidal gold tests.

John G. Reinhold Ph.D., University of Pennsylvania Hospital, Philadelphia, Pa., presented some of the data obtained when he was a member of the board studying hepatic function for the armed forces during World War II. Dr. Reinhold emphasized the selection of the proper laboratory tests for the task at hand. His data showed that in liver dysfunction every examination does not become abnormal at one time, but that there is a definite progression. In the onset of infectious hepatitis the bromsulphalein absorption will be altered in three days; urine bilirubin in 4-5 days; thymol turbidity in 7-8 days. In convalescence the order is reversed.

The use of other chemical determinations have their own importance. The albumin-globulin ratio aids the clinician in the management of the patient and the percentage of free cholesterol is important to ascertain liver damage. Dr. Reinhold mentioned that the determination of serum cholinesterase is proving itself quite useful as a differentiation test.

Warren M. Sperry Ph.D., New York Psychiatric Institute, moderated the discussion. In the informal discussion period which followed the speakers, Dr. Sperry, noted for his work on the determination and metabolism of cholesterol, showed that in biliary obstruction there is a rise in total cholesterol. As the liver is damaged the total cholesterol decreases, but the percentage of free cholesterol increases.

### Philadelphia Section:

At the meeting of the Philadelphia Section at Pennsylvania Hospital on January 25, 1951 Dr. Dwight McNair Scott spoke on "Paper Chromatography of Sugars and Amino Acids". Paper chromatography as a method of separation of mixtures, and purification and identification of compounds was dis-

cussed. The techniques and apparatus were described, with especial reference to the determination of amino acids, sugars and sugar phosphates.

Dr. Scott received her A.B. degree from Vassar and her Ph.D. degree from Radcliffe College. She is currently engaged in research at Children's Hospital, Philadelphia.

The second speaker was Dr. David Seligson, Cox Institute, Hospital of the University of Pennsylvania and his topic was "The Determination of Ketoacids with the Aid of Paper Chromatography". He described an apparatus which can be made from glassware and equipment available in any chemical laboratory, and then discussed the identification of various ketoacids.

The next meeting will be held Thursday, March 22, 1951, at Lankenau Hospital. The speaker will be Dr. Richard Singer of the University of Pennsylvania. His topic will be "The Measurement of Blood Acid-Base Balance. A Critical Survey of Methods Currently Used with Special Reference to Finger Blood Studies". He is a member of the Departments of Research Medicine and of Physiological Chemistry.

### Southern California Section:

The 1951 program of the Southern California Section began on January 23 at the Los Angeles County Hospital where the guest speaker, Hans H. Zinsser, M.D., Guggenheim Research Fellow, California Institute of Technology, gave a critical review of "Renal Physiology and the Newer Kidney Function Tests". Dr. Zinsser has summarized his presentation as follows:

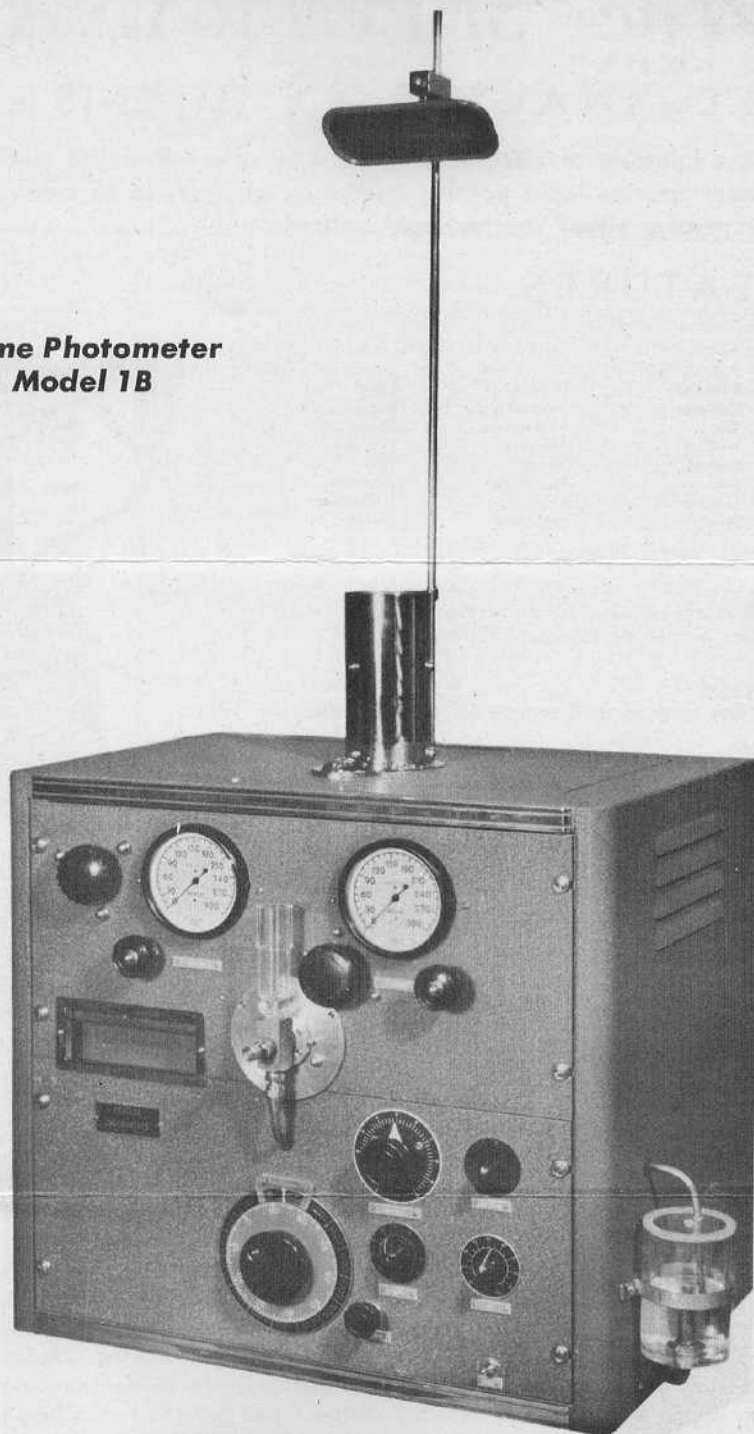
"The increasing popularity of renal clearance techniques makes necessary a careful appraisal of the foundations on which the results of these tests are based. It is unprofitable to outline the palaeontology of either the kidney or of renal physiology, but it is important to realize that the chemical characteristics of one of the basic test substances now used in man were investigated thoroughly only in connection with the blood of the dogfish.

Similar inadequacies of chemical appraisal, and the use of outdated analytical techniques have done much to increase the hardship that these tests impose on the patients they are designed to aid, and have led to analytical errors discovered unfortunately in laboratories other than those in which the methods were originally devised.

The fundamental tenets of clearance technique as now used presume that inulin, a polysaccharide, is not bound to plasma, is filtered through the glomerular membrane unchanged, and is neither reabsorbed, nor chemically changed in its passage through the remainder of the urinary tract. It may accordingly be used to equate the urine content of inulin with the amount of blood filtered in the kidney. A variety of other carbohydrates have been shown to be unsatisfactory, and some dyes have been shown to be both inadequate and dangerous. A second test substance is usually administered that is selectively secreted by the renal tubular mechanisms with the presumption that a proportion of the plasma content delivered to the kidney is removed for urinary excretion as the blood circulates by the tubular cells, and that thereafter no back-diffusion nor reabsorption of the substance occurs. That the presumption as to back-diffusion is probably correct, is shown by the urinary volume response to a variety of loading substances, at least in the normal kidney. Dangers in interpretation lie in the known distortions of vascular and tubular anatomy known to occur in renal disease, the possibility of competitive inhibition of excretion of test substances by abnormal metabolites, and the oscillating solutions to steady state equations designed to maintain constant blood and urine levels over the period of testing. It is likely that with the normal range of variation twenty per cent, more refined micro methods and single injection clearances, preferably combined with otherwise necessary excretory urography, can lead to equally valid theoretical conclusions as to renal function without real hardship to the patient and with less spurious accuracy being attached to the results than is at present justified."



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Calcium	Hydrogen	Mercury	Thallium
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Chromium	Iron	Palladium	Titanium
Cobalt	Lanthanum	Rhodium	Vanadium
Copper	Lead	Scandium	Yttrium
			Zinc

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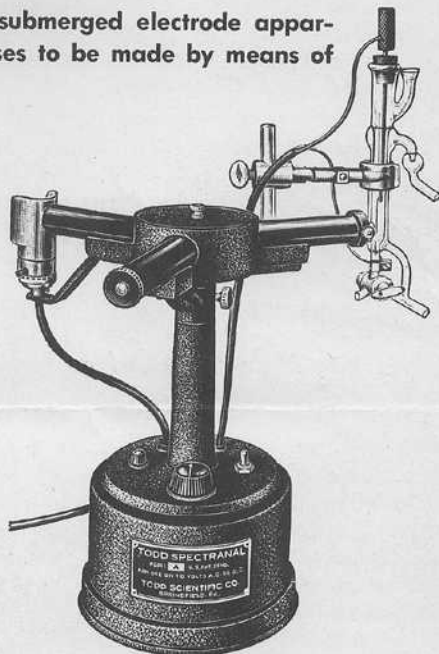
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# The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 3, NUMBER 3

MAY 1951

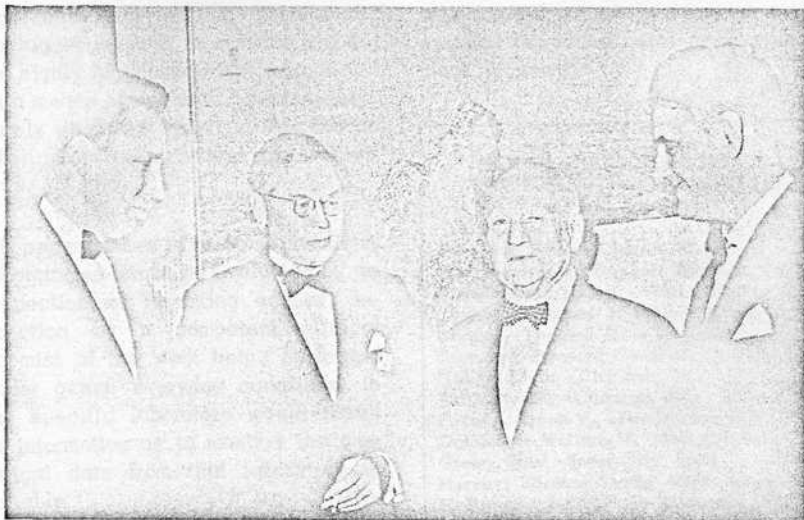
## Van Slyke Made Honorary Member

Boston, Mass: Donald D. Van Slyke, assistant director in charge of biology and medicine of the Brookhaven National Laboratory, Brookhaven, N.Y., was the recipient of the second honorary membership in the American Association of Clinical Chemists, Dr. Van Slyke was presented with a membership scroll by Harry Sobotka, president of the AACC at the Third Annual Dinner held Tuesday evening, April 3rd at the Hotel Statler in this city. The annual dinner was part of the program of the Stated Annual Meeting for 1951 which was held in conjunction with the 119th Meeting of the American Chemical Society.

A.B. Hastings, professor of biochemistry, Harvard University Medical School and former associate to Dr. Van Slyke at the Rockefeller Institute, New York, spoke on "Highlights in the Career of D.D. Van Slyke, Dean of Clinical Chemists". Dr. Hastings, armed with "data charts" depicting the achievements of Dr. Van Slyke's fruitful scientific career, told the audience the little known tales of the manner in which now classical chemical procedures, the first tools of the clinical chemist, were made possible.

The procedures devised by Dr. Van Slyke form much of the basis of modern clinical chemistry. His works include studies on the chemistry and physiology of the amino acids, kidney physiology, blood electrolytes, blood gases, acid-base balance, methods of microanalysis and metabolic diseases. He received his doctorate in chemistry from Michigan University in 1907 and has received honorary Doctor of Science degrees from four American universities and also an honorary doctorate in medicine from the Uni-

(Continued on page 5)



Christensen, A.B. Hastings, D.D. Van Slyke and Benotti at the Association dinner.  
(Courtesy of Chemical and Engineering News)

## RECOMMENDATION ON CERTIFICATION MADE

It has been unanimously recommended by the Executive Committee of the AACC that members should defer any decision to apply for certification by the American Board of Clinical Chemistry.

The suggestion was made at the Annual Meeting held in Boston on April 3rd.

The Committee feels that the articles of incorporation and by-laws as drawn up by the Board are unsatisfactory, and it is in disagreement with a number of points in the qualifications for certification.

On February 1st a memorandum was submitted to the chairman of the Board stating the objections of the Committee. The Board has promised to discuss these points at their next meeting.

Although two members of the AACC are members of the Board the AACC is not officially represented on it.

## GRADUATE TRAINING IN CLINICAL CHEMISTRY URGED

Boston, Mass: The importance of clinical chemical training at a graduate level was emphasized in the talk "An Educational Program for Clinical Chemistry" given by Halvar Christensen, professor of biochemistry, Tufts Medical School, at the Annual Dinner of the AACC held at the Hotel Statler on April 3rd.

"The new clinical chemistry curriculum at the Tufts Medical School, leading to a master's degree in clinical chemistry, arose from the need to train good analysts and better supervisory chemists for laboratories servicing the medical profession," said Dr. Christensen. "At present that need overshadows the one for competent biochemists for pure research."

Dr. Christensen went on to stress that heretofore universities set their graduate training level at research

(Continued on page 5)

Newsletter of the American Association  
of Clinical Chemists, Inc.

P.O. Box 123  
Lenox Hill Station New York 21, N.Y.

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opinions advanced by contributors do not  
necessarily represent the official position  
of the American Association of Clinical  
Chemists.*

**VOL. 3, NO. 3** **MAY 1951**

**EVALUATION BY "UNKNOWN'S"**

The practice of submitting "unknown" specimens by state and municipal agencies and certain professional societies, has in recent years expanded from the identification of a specimen with a positive serological reaction to include bacteriological cultures. Now the vogue has turned to clinical chemical determinations. We are prepared to see published some startling revelations on the poor performances of clinical chemistry laboratories.

Frequently such unknowns are made up in water or organic solvents and the assumption is made that they suffice to reproduce conditions existing when blood or serum is examined. Another expedient is to submit lyophilized serum to be reconstructed by the recipient. The laboratories receive these "unknowns" through the mails and the post office does not supply refrigeration for such material. We can think of few determinations where such analytical data would be reliable.

The fact that former surveys have shown that much work in clinical chemistry is being performed below reasonable standards, we believe, is only fortuitous. To our knowledge there has at no time been published any

comprehensive survey of the training and chemical background of personnel in administrative and technical positions in clinical chemistry laboratories. The daily work load, laboratory facilities, remuneration, and other pertinent matters must also be considered. We suspect that such information would be more valuable than standard deviations of an "unknown". Those of us who have been exposed to sophomore chemistry as one prerequisite for higher degrees in science are not too highly impressed with "unknowns" as a means of evaluating performance. Surely we do not resort to this device when interviewing prospective assistants.

If performances of clinical chemistry laboratories are to be evaluated by an inspection or licensing agency, inspection by a competent clinical chemist of the work being performed under actual everyday conditions in the specific laboratory would result in information as to whether the analytical data from that laboratory is reliable.

**SOME WORDS ABOUT  
OUR ADVERTISERS**

THE CLINICAL CHEMIST is not a commercial venture and is not circulated with any intentions of financial profits. This publication aims merely at strengthening the bonds amongst clinical chemists and acts as a forum to present their view-points.

The advertisers in our newsletter represent commercial enterprises who serve the clinical chemist in their own way. They present to us the recent advances in their products and such information is often useful to us. It is obvious that they do not advertise in a publication of such limited circulation merely from a profit motive. They are patronizing a media which they feel is acting in the public interest. Our members might cooperate with them, when purchasing an item presented in the newsletter, by informing the advertiser that they saw it in THE CLINICAL CHEMIST.

**MEMBERSHIP DUES  
TO BE RAISED**

The annual dues of the AACC will be raised to \$6.00 for full members and \$3.00 for associate members starting October 1st. This will not affect dues already paid for the year.

This measure was passed without dissenting vote at the Annual meeting held in Boston on April 3rd after it was pointed out to the members present that increased costs made such a move necessary.

**NEW MEMBERS ELECTED BY  
THE EXECUTIVE COMMITTEE  
APRIL 27, 1951**

- Andrews, Edna - Detroit, Mich.
- Bavetta, Lucien A. - Los Angeles, Calif.
- Bulashenko, Helen - Philadelphia, Pa.
- Clements, James J. - Binghamton, N.Y.
- Connor, Thomas H. - Providence, R.I.
- Diamond, Bernard I. - Philadelphia, Pa.
- Dubin, Alvin - Chicago, Ill.
- Ellis, Hellen - Chicago, Ill.
- Fiore, Joseph V. - Rochester, N.Y.
- Goldwater, William H. - New Orleans, La.
- Green, Saul - Iowa City, Iowa
- Harvey, Thomas Stoltz - Glenolden, Pa.
- Hollinger, Nell F. - Berkeley, Calif.
- Kurzman, Blossom D. - Brooklyn, N.Y.
- Letonoff, Theodore V. - Coatesville, Pa.
- Mancino, Peter C. - New Castle, Pa.
- Mizuno, Nobuko - St. Paul, Minn.
- Nix, Mary J. - Portland Ore.
- Palma, Anthony Vito - Canandaigua, N.Y.
- Pandiri, Demetra - New York, N.Y.
- Pennall, Ralph - Iowa City, Iowa
- Portnoy, Seymour - Brooklyn, N.Y.
- Reiner, William Knouse - Iowa City, Iowa
- Taylor, Haywood Maurice - Durham, N.C.
- Thompson, Herbert E. - Youngston, Ohio
- Whittemore, Georgina - New York, N.Y.

**EXECUTIVE COMMITTEE TO ACT  
AS LEGISLATIVE COMMITTEE**

At a meeting of the Executive Committee held in Boston on April 2nd it was decided that the Executive Committee should function also as a Legislative Committee to deal with the complexities of proposed legislation and administrative rulings affecting clinical chemistry.

Members who have information on such matters or problems pertaining to them are urged to communicate with Max M. Friedman, secretary of the AACC or any member of the Executive Committee.

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## how it works\*

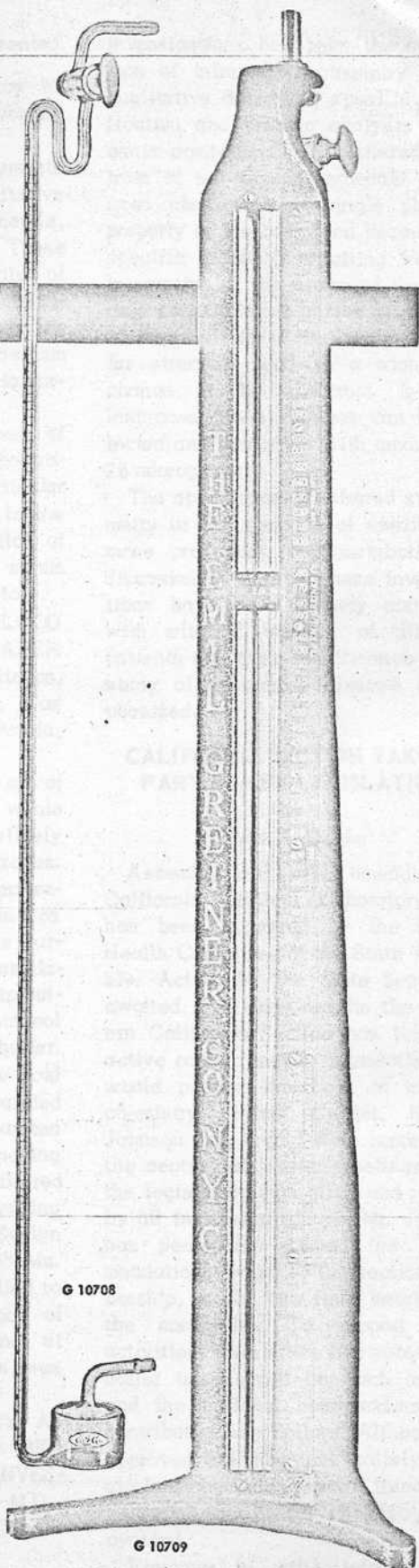
The closed end is effected by means of a U-tube which traps mercury to form the vacuum seal and an oblique bore stopcock above the trap to hold up the mercury seal. For differential readings the stopcock is kept open and connected to the lower source of pressure. The ratio of the diameters of the manometer tube and reservoir is adjusted to exactly counteract the increase in mercury height due to its lower density at room temperature than at 0° C.

\*Gilmont, R., *Anal Chem.* 20 474, (1948)

## price list

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- G 10708 Gauge, Manometer, Similar to G 10709, but glass part only, unmounted with scale directly engraved. .... each \$30.50
- Also available:
- G 10705 Gauge, Manometer, Same as G 10709 but range 0-200 mm. .... each \$29.50
- G 10705A Gauge, Manometer, Same as G 10708 but range 0-200 mm. .... each \$18.75

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## NEW ANALYTICAL TECHNIQUES DISCUSSED IN SYMPOSIUM

Boston, Mass.: A symposium on "Newer Analytical Techniques in Clinical Chemistry" was presented on April 3rd as part of the program for the Third Annual Meeting of the American Association of Clinical Chemists. It was arranged jointly with the Division of Analytical Chemistry of the American Chemical Society. Bernard L. Oser, Ph.D., Food Research Laboratories, Long Island City, N.Y., presided.

The following are short abstracts of the papers delivered.

**QUANTITATIVE ULTRAMICRO-CHEMISTRY IN CLINICAL LABORATORIES.** Albert E. Sobel, Ph.D., Jewish Hospital of Brooklyn, N.Y.

The introduction of ultramicro-methods in clinical chemistry laboratories assumes great importance in pediatrics where multiple analysis are required on very small blood samples. New techniques using micro-burettes, capillary burettes and pipettes with more sensitive indicators, spectrophotometers with micro cuvettes, colorimetric reactions of higher color intensity, allow ultramicro methods with precision and accuracy which compare favorably with standard procedures.

**THE USE OF DISTILLATION FOR ISOLATING TRACE CONSTITUENTS AS APPLIED TO THE DETERMINATION OF PROTEIN-BOUND IODINE.** Albert L. Cheney, Ph.D., Albert L. Chaney Chemical Laboratory, Glendale, Calif.

The conditions governing the quantitative distillation of iodine, and the factors influencing the percentage recovery, have been systematically evaluated. These factors include the temperature and strength of the acid digest, the type of oxidizing agent used, the type and quantity of reducing agents, and the time of distillation. A formula is derived for predicting the relationship between the completeness of distillation and some of the above factors. This method of evaluation is applicable to other types of analysis involving the isolation of the desired constituent by volatilization.

The characteristics and limitations of various reducing agents for use in reducing the excess oxidant and the

reduction of the iodate are presented.

**FLAME PHOTOMETRY,** Roy W. Bonsnes, Ph.D., Cornell University Medical College.

Flame photometers are instruments designed for the rapid quantitative determination of the alkali metals, primarily sodium and potassium. These instruments facilitate the collection of data, previously unattainable by chemical procedures, on the variation in concentration of sodium and potassium in blood, body fluids, and excreta during health and disease.

The history of the development of flame photometry and flame spectrophotometry is discussed with particular emphasis upon their routine use for the determination of the concentration of sodium and potassium in blood serum in the hospital chemistry laboratory.

**ALPHA KETO ACIDS IN BLOOD AND URINE STUDIED BY PAPER CHROMATOGRAPHY.** David Seligson, Ph.D., and Bernard Shapiro, Cox Institute, University of Pennsylvania, Philadelphia, Pa.

The alpha keto acids of 50 ml. of the 1:10 tungstic acid filtrate of whole blood were converted quantitatively to their 2,4 - dinitrophenylhydrazones. The acid hydrazones were then extracted from the neutral hydrazones and the hydrazine reagent. The partially purified fraction was quantitatively transferred as a streak to buffered paper and resolved by butanol saturated with the original buffer. Pyruvic and alpha keto glutaric acid hydrazones were completely separated from other substances. The separated substances were eluted by shaking with 1N sodium hydroxide and filtered into a colorimeter tube. The resulting red solution was read in an Evelyn photo-electric colorimeter at 455 m $\mu$ .

This procedure has been applied to diluted urine and the presence of pyruvic, alpha-ketoglutaric and at least two unidentified keto acids, was established.

**INFRARED SPECTROMETRY AS AN ANALYTICAL TOOL IN BIO-CHEMICAL AND CLINICAL INVESTIGATIONS.** Konrad Dobriner, M.D., Sloan-Kettering Institute for Cancer Research, New York, N.Y.

One of the most important advances in aids for clinical and biochemical

investigations has been the application of infrared spectrometry to the qualitative detection, specific identification and precise analysis of organic compounds. The infrared spectrum of an organic molecule is the most characteristic single physical property of the compound because the specific vibration resulting from the interaction of the atoms of the molecule constitutes a unique property of a compound. Minor changes in molecular structure lead to a significant change in the spectrum. In many instances these changes can be detected and evaluated with amounts of 25 micrograms.

The application of infrared spectrometry in the analysis of steroid hormone production and metabolism is discussed in detail. These investigations have been closely correlated with clinical studies of diseased patients and their significance in the study of neoplastic disease is emphasized.

## CALIFORNIA SECTION TAKES PART IN NEW LEGISLATION

by

Clyde A. Dubbs

Assembly Bill 1541, amending the California Clinical Laboratory Act, has been approved by the Public Health Committee of the State Assembly. Action by the State Senate is awaited. For many months the Southern California Section has taken an active role to secure legislation that would protect the field of clinical chemistry. Frank Cramer, Kenneth Johnson and Arnold Ware represented the section at earlier meetings when the legislation was aired and revised by all interested groups. Mr. Johnson has personally pushed the recommendations, voted by the section membership, at the two final hearings of the committee. To support these activities, the section has voted a ten dollar assessment on each member, and the national headquarters have contributed fifty dollars. Although the approved bill may not satisfy many clinical chemists, several threatening setbacks to clinical chemistry were avoided.

Pressure to write into the law

(Continued on page 7)

The following are some notes from the minutes of the executive committee and the Third Annual Meeting, both held in Boston:

The necessity for increasing the income of the Association in order to cope with the rising costs, was brought to the attention of the membership. Following discussion it was moved, seconded, and approved without dissenting vote, that the annual dues be raised to \$6.00 for members and \$3.00 for associate members, the new rates to take effect October 1, 1951.

It was announced that the Association now has 375 members and that applications from another 25 are under consideration.

The complexity of the problems involved in licensure legislation was discussed. It was urged that members be on the alert for proposed legislation or administrative rulings affecting clinical chemistry. The executive committee as a whole was constituted as the legislative committee, and information pertaining to legislation should be sent to the secretary.

On February 1, 1951 a resolution was submitted to the American Board of Clinical Chemistry for changes in its articles of incorporation and by-laws. The executive committee decided unanimously to recommend to the membership that they defer at this time any decision to apply for certification by the Board.

Votes of thanks to Dr. Bernard L. Oser for his efforts in organizing the Symposium on Newer Analytical Techniques in Clinical Chemistry, and to Drs. H.H. Willard, chairman, and William J. Batt, secretary of the Division of Analytical Chemistry for cooperation in making the joint session possible, were unanimous.

The death of Dr. A.G. Sheftel, member of the Southern California section, was noted with regret, and the sympathy of the Association was expressed to Mrs. Sheftel.

The meetings closed with a vote of thanks to Joseph Benotti and the members of the Boston section for their most successful arrangements.

Respectfully submitted,  
Max M. Friedman



**Abraham George Sheftel**, of Beverly Hills, California, was born May 19, 1892, in Vilna, Russia; received the degree of M.D. from the University of Lausanne, Switzerland, in 1919; was assistant in medicine at the University Hospital in Lausanne (1919-20); interned at St. Marks and Montefiore Hospitals in New York City; and was associated with the metabolic clinic of Mount Sinai Hospital (1927-32).

In 1938 he established a clinical laboratory in Beverly Hills with primary interests in biochemistry, and his emphasis on this field was maintained until he had to retire from active practice because of poor health.

His death occurred on March 22, 1951.

#### MEMBERSHIP CERTIFICATES NOW AVAILABLE

Membership certificates in the AACC are now available to all members. They are 8 by 11 inches, printed in black on parchment paper with gold seals and are suitable for framing.

They may be obtained by sending a check or money order for \$4.00, payable to the American Association of Clinical Chemists, to Dr. Louis B. Dotti, Chemistry Department, St. Luke's Hospital, 113th St. and Amsterdam Ave. New York 25, N.Y. accompanied by a letter stating the way in which the name is to be inscribed on the certificate, and whether or not a degree is to be included with the name. No laboratory or hospital affiliations can be included.

A new catalog "Apparatus, Reagents and Chemicals for Clinical Procedures" has just been published by the Standard Scientific Supply Corp., 34 W. 4th St., New York 12, N.Y. Free copies are available if requested on official letterhead.

The catalog contains 168 pages and is divided into eight sections. Section I, Reagents, is a complete alphabetical listing of reagents for colorimetric and spectrophotometric clinical chemistry. Section II, Chemicals, is made up of an alphabetical listing of chemicals as specified in tests outlined in the "Manual of Standardized Procedures for Spectrophotometric Chemistry" by Harold J. Fister. Section III, Reagents, consists of reagents listed by procedures as outlined in Fister's Manual. Section IV, Standards and Buffers, is an alphabetical listing of calibration standards and reference buffer materials. Section V, Reagents and Stains, contains a listing of miscellaneous laboratory reagents and staining solutions. Section VI, Dyes, is an alphabetical listing of biological dyes. Section VII, Culture Media, lists dehydrated culture media and reagents for microbiological and clinical laboratory procedures. Section VIII, Apparatus, is an alphabetical listing of apparatus for use in clinical methods listed in Fister's Manual.

#### VAN SLYKE MADE (Continued from page 1)

versity of Oslo, Norway.

From 1907-1948, Dr. Van Slyke was associated with the Rockefeller Institute for Medical Research. It was from these laboratories that the classics in science emanated.

World War II saw Dr. Van Slyke taking an active part in the war effort with the Office of Scientific Research and Development.

#### GRADUATE TRAINING (Continued from page 1)

and teaching. Now, with the great dependence of medicine upon clinical chemistry for patient management and differential diagnosis, the needs of the "routine" laboratories are acute. With graduate training as now found in the Tufts Medical School, clinical chemistry can establish itself as a professional specialty. This does not infer that research will be excluded from the "routine" laboratories. Chemists trained to supervise such laboratories would, by capable training of assistants and organization of the large volume of routine services, be in the position to make investigations which are closed to purely research organizations.

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**Boston Section**

The fifth meeting of the 1950-51 season was held on February 15th at the New England Center Hospital. Arnold Seligman, M.D., associate professor of surgery at Harvard Medical School and associate director of surgical research at the Beth Israel Hospital gave a talk on "The Development of New Methods Demonstrating Enzymes and Ketosteroids".

Dr. Seligman's lecture on the research work which he and his organization are doing in histochemical techniques was accompanied by a large collection of slides of histological preparations showing deposition of new synthetic pigments.

His research is based on the fact that Beta Naphthol may be easily diazotized to give a purple pigment with tetrazotized diorthoanisidine. He described other ingenious coupling reactions whereby various other colored pigments were produced.

**Chicago Section**

Lillian Eichelberger, Ph.D., associate professor of biochemistry in the Division of Orthopedic Surgery, Department of Surgery, University of Chicago, addressed the Chicago Section on April 6th. Her talk was entitled "A Histochemical Characterization of the Inorganic Constituents, the Connective Tissue and the Chondroitin Sulfate of the Extra- and Intra-Cellular Compartments of Hyaline Cartilages."

Dr. Eichelberger said, "the gross data for the chemical analysis of hyaline cartilages were presented and were utilized to furnish provisional histochemical description for the tissues, first per 100 grams of cartilage solids and secondly, per kilo of fresh wet cartilage. The following hyaline cartilages were chosen; cartilages from the respiratory passages, (trachea and nasal septum which ordinarily do not calcify); and cartilages from the ventral ends of the ribs, (costal); and cartilages from the surfaces of bones within the joints prior to their calcification, (articular).

"(1) One hundred grams of hyaline cartilage solids is composed of an extracellular mass represented by the weight of the connective tissue solids

plus the weight of chondroitin sulfate phase and an intracellular mass. The derived data led to the following results: in trachea solids, the extracellular mass,  $(E)_S = 80$  gm., the intracellular mass  $(C)_S = 20$  gm.; in nasal septa solids,  $(E)_S = 75$  gm.,  $(C)_S = 25$ ; in costal solids,  $(E)_S = 74$  gm.,  $(C)_S = 26$  gm.; in articular solids,  $(E)_S = 68$  gm.,  $(C)_S = 32$  gm.

"(2) A kilo of fresh cartilage is composed of two compartments, the extracellular phase and the intracellular phase. For articular cartilage; extracellular phase,  $(E)_T = 662$  gm., of which 222 gm. are the solids of this phase and 440 gm., the water; and an intracellular phase  $(C)_T = 338$  gm., of which 74 grams are the solids of this phase and 264 gm., the water. For Costal cartilage the total extracellular phase  $(E)_T = 602$  gm., of which 188 gm., are the solids of this phase and 414 gm., the water and an intracellular phase  $(C)_T = 398$  gm., of which 66 gm. are the solids and 332 gm., the water."

The next meeting will be held on May 4th. Albert Dorfman, M.D., of the Department of Pediatrics of the University of Chicago will speak on "The Biochemistry of Connective Tissues."

**New York Section**

The next and last meeting of the season of the Metropolitan New York Section will be held May 17th at the Medical Arts Center Hospital 57 West 57th Street, New York. A business meeting is scheduled for 7:45 P.M. at which time By-laws for the Section and nominations for officers will be considered. A scientific meeting will be held at 8:30 P.M. Ralph S. Overman, Ph.D., research associate in medicine, Department of Medicine, Cornell University Medical College, New York will speak "On the estimation of prothrombin".

Dr. Overman received his doctorate degree at the University of Wisconsin in 1942 working with Karl P. Linke while his classical work on Dicumerol was in progress. Following his graduation he worked for a pharmaceutical concern for two years. In 1944 he became associated with Irving S. Wright, M.D. associate professor of medicine in the Department of Medicine, Cornell University Medical Col-

lege and the New York Hospital whose group have been conducting both clinical and fundamental research in vascular disorders. Dr. Overman, besides being interested in the estimation of prothrombin, is working on the isolation and properties of thromboplastin inhibitors.

**Philadelphia Section**

Richard B. Singer, M.D., assistant professor of physiological chemistry and of research medicine at the University of Pennsylvania spoke before the Philadelphia Section on March 22nd. The subject of his talk was "Measurement of Blood Acid-Base Balance: A Critical Survey of Methods Currently Used With Special Reference to Finger Blood Studies."

In his talk Dr. Singer explained that "Although the CO<sub>2</sub> combining power (Van Slyke and Cullen) is the most frequently used index of acid-base disturbances, it is less desirable than the CO<sub>2</sub> content of serum handled without significant exposure to air, because it is subject to unpredictable deviations from the latter of the order of ±5%, and occasionally as great as ±25%.

"Blood can be handled in a way that is practical for hospital routine without significant loss of CO<sub>2</sub>, in which case the CO<sub>2</sub> content is a simpler procedure. For more exact studies of acid-base balance, both CO<sub>2</sub> content and pH are generally required, and from these the primary factors in the disturbance, buffer base and CO<sub>2</sub> pressure can be calculated by the method of Singer and Hastings (Medicine, 27,223). Examples of analysis of this type were presented in which the micromethod of Shock and Hastings (J. Biol. Chem., 104,565) was used to determine the CO<sub>2</sub>, pH and hematocrit value in samples of finger blood, ½ to 1 ml."

The next meeting will be held on Thursday, May 24, 1951, at Temple University School of Medicine. The results of the analyses of the pooled sera, which was distributed at the last meeting, will be reported and discussed. A panel consisting of Wm. R. Brown, (Hahnemann Hospital), Charles Grosscup, (Abington Hospital), Margaret Vanderau, (Presbyterian Hospital, and Elizabeth Dudley (Children's Hospital) will discuss the vari-



ous sugar methods in current use.

At the business meeting which will follow the scientific session a constitution for the local section will be presented to the members for their consideration. There will also be election of officers. The nominating committee is composed of Robert Hamilton, chairman (Temple University School of Medicine), Charles Grosscup (Abington Hospital) and Fred Wilson (Claude Brown Laboratories).

#### Southern California Section

The Southern California Section presented its second scientific meeting of the year on February 20 at the University of Southern California campus. Guest speaker, John W. Mehl, Ph.D., professor and head of the department of biochemistry and nutrition, University of Southern California Medical School, discussed "Electrophoresis," with special emphasis on the newer filter paper techniques. Dr. Mehl summarizes his paper as follows:

"The migration of proteins in an electrical field has been known for many years, but methods for studying this phenomenon were severely limited until the developments of Tiselius with respect to technical arrangements for carrying out electrophoresis studies, and the development of optical methods of analysis by Lamm. With these technical advances it became possible to study the influence of various factors upon electrophoretic movement and to make practical applications to the study of protein mixtures.

"Although it is now recognized that both the mobility and apparent concentration of components indicated by electrophoresis are dependent in a rather complicated way upon ionic strength and protein concentration, as well as upon the nature of the protein and the pH, the method has made possible a much more precise study of the changes in plasma proteins in disease than would otherwise have been possible.

"Although the method of electrophoretic analysis has a limited usefulness in the diagnosis and evaluation of liver disease, multiple myeloma, and lupus, it is probably of greatest value in helping to establish the

nature of changes in plasma proteins in various types of disease. Such studies are certainly of importance in suggesting physiological bases for disturbances in plasma proteins, and are often helpful in following the course of a disease. One reason for a somewhat limited usefulness in the past has been the expense in equipment and time involved in electrophoresis."

The next meeting will be held Monday, May 21st, at 8:00 p.m. in the Los Angeles County Hospital. Albert L. Chaney, Ph.D., director of the Chaney Chemical Laboratories, will speak on "Protein-Bound Iodine Determination" to be followed by a talk in "Prothrombin Determination" by Arnold Ware, Ph.D., of the University of Southern California Medical School.

Following the meeting nominations for new officers will be held

#### CALIFORNIA SECTION TAKES

(Continued from page 4)

specific curricula as prerequisite to technologist licensure was finally overcome, and such matters are left, as at present, to the discretion of the State Board of Health. The proposed amendment would have prevented, by written law, a clinical chemist from qualifying as a technologist until he had the equivalent of one half year of college training in bacteriology, hematology, immunology and parasitology. Many highly qualified clinical chemists do not have this specific non-chemical training.

Section 1264, providing for licensure to practice in one specific field, such as chemistry, has been retained. Although fully effective use of this section by the Board has not been made in the past, the principle remains expressed in the law, and the door remains open to special licensure in the future when the Board may see fit.

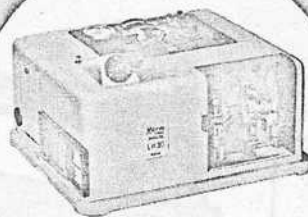
The local section was unsuccessful in its effort to secure permission for training specialized technicians in specialized laboratories, where such training facilities are best. All recognized technician training must be secured in a general clinical laboratory.

Competing Assembly Bill 2478, which could have been very detrimental to clinical chemistry, has apparently gone down to defeat.

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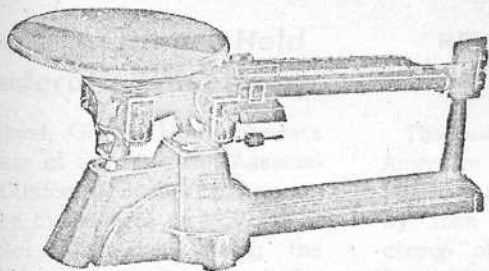
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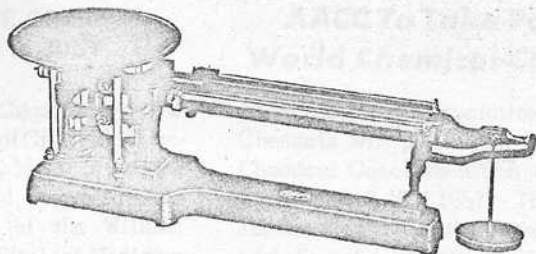
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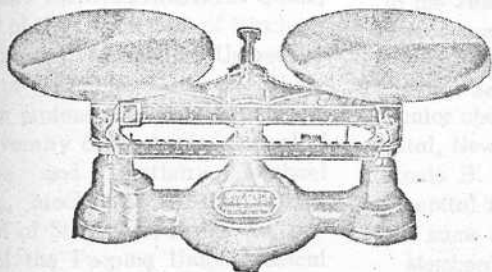
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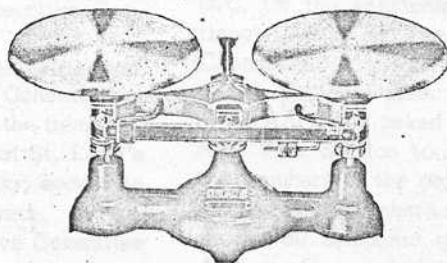
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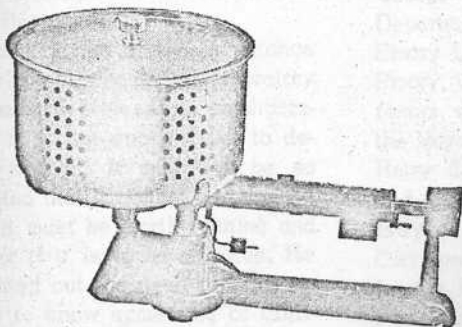
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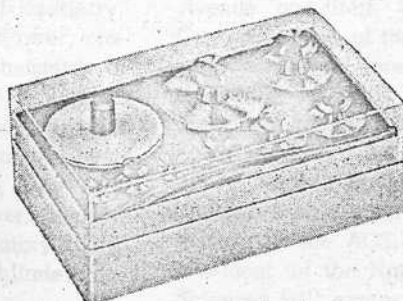
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# The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 3, NUMBER 4

JULY 1951

## Association Dinner Held At Federation Meetings

Cleveland, Ohio - Forty members and guests of the American Association of Clinical Chemists held an unscheduled dinner here on May 2nd at the Hotel Auditorium during the Thirty-fifth Annual Meeting of the Federation of American Societies for Experimental Biology. John G. Reinhold, now president and at that time vice-president of the Association, presided.

Speakers included Armand J. Quick, director of the Department of Biochemistry of the Marquette University School of Medicine, Walter R. Bloor, emeritus professor of Biochemistry at the University of Rochester School of Medicine and Dentistry, Michael Somogyi, biochemist of the Jewish Hospital of St. Louis, Hsien Wu, formerly of the Peiping Union Medical College and now in the Department of Biochemistry at the Medical College of Alabama and Oliver H. Gaebler, head of the Department of Biochemistry at the Edsel B. Ford Institute of Medical Research.

Dr. Quick spoke of the importance of the clinical chemistry laboratory to the medical profession, emphasizing that it is not enough just to develop a method. It must not be so complicated that it cannot be properly run and it must be worth running and paying for if it is to be of value. He also pointed out the need of clinical chemists to know something of clinical application in order to do a thorough job.

Dr. Somogyi related his experiences as a student and told of his trials as one of the pioneer clinical chemists.

In his talk Dr. Bloor said that in order to do a test properly an analyst

(Continued on page 5)

## NEW EXECUTIVE GROUP TAKES OFFICE IN JULY

The new Executive Committee of the American Association of Clinical Chemists took office on July 1st. It is headed by John G. Reinhold, associate in charge of chemistry at the William Pepper Laboratory of Clinical Medicine at the University of Pennsylvania Hospital, Philadelphia, Pa. who will serve as president.

Vice-president is Albert E. Sobel, head of the Department of Biochemistry at the Jewish Hospital of Brooklyn, who was a member of the Executive Committee last year.

The secretary, Max M. Friedman, senior chemist at Queens General Hospital, New York City, and the treasurer, Louis B. Dotti, chemist at St. Luke's Hospital in New York City, served in the same capacities last year.

Members of the Executive Committee include Fritz Bischoff, director of Chemical Research Projects at the Santa Barbara Cottage Hospital Research Institute, Santa Barbara, Calif.; George T. Lewis, chairman of the Department of Biochemistry at the Emory University School of Dentistry, Emory, Ga.; Marschelle H. Power, professor of Physiological Chemistry at the Mayo Foundation, Rochester, Minn.; Harry Sobotka, last year's president and head of the Department of Chemistry at Mt. Sinai Hospital, New York City; and Ellenmae Viergiver, chemist for the Ayer Clinical Laboratory at the Pennsylvania Hospital, Philadelphia, Pa.

The Committee and officers will serve until June 30, 1952.

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## AACC To Take Part in World Chemical Conclave

The American Association of Clinical Chemists will participate in the World Chemical Conclave which will be held September 3-15, 1951. The Diamond Jubilee Meeting of the American Chemical Society, marking the 75th Anniversary of its founding will be held in New York City, September 3-7 and will be followed by the meetings of the International Congress of Pure and Applied Chemistry, September 10-13. The meetings will then move to Washington, D.C. for the sessions of the International Union of Pure and Applied Chemistry.

The National Executive Committee of the AACCC has asked the Metropolitan New York Section to act as hosts to the members of the organization. As a number of our members are participating in the 80 Symposia presented at the ACS meeting and the more than 900 papers on the technical program of the International Congress, the AACCC will not have a separate scientific session.

On Wednesday, September 5th at 2:30 P.M. in the 71st Regiment Armory, Park Avenue and 34th Street, New York City, delegates of the AACCC, with representatives of foreign and domestic scientific societies will present their greetings to the American Chemical Society in honor of the 75th Anniversary of its founding. Each delegate will present a scroll of greeting from his society to the ACS. Detlev W. Bronk, president of the National Academy of Sciences will express the greetings of the domestic organizations and Eric Rideal of Great Britain will speak for the foreign societies. James B. Conant, president of Harvard University, will present the major address of the afternoon.

Israel S. Kleiner, chairman of the

(Continued on page 5)

Newsletter of the American Association  
of Clinical Chemists, Inc.

P.O. Box 123  
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VOL. 3, NO. 4 JULY 1951

## THE DIAMOND JUBILEE

We, who have yet to reach our third birthday, look with a great deal of esteem to our colleagues of the American Chemical Society who are now preparing to celebrate their Diamond Jubilee. Perhaps three-quarters of a century is not a very long time as history is recorded, but the progress made by chemistry during this period is seen in our everyday modern living and health programs. This is a great tribute to the American Chemical Society and its constituent members. Much will yet be written and said in the next few months about the contributions of chemistry in the world's march of progress. To the great men of the American Chemical Society, both past and present, we say "well done".

This jubilee year might perhaps be a good time for us to examine our own ancestry. There are those who would make foundlings of us, and those who might say we are the illegitimate offspring of Hippocrates. There may also be others who say our birthright is unmistakably written in the works of Virchow. The aforementioned men were great scientists and scholars, but they cannot be said to have contributed to our parentage.

The great chemists as Wohler and Liebig, Berzelius and Fresenius,

Folin and Van Slyke, Bloor and Somogyi, to mention but a few, have reached and crossed the frontiers of that discipline known as Clinical Chemistry. Other chemists have opened other worlds of investigation and discovery and presented us with the tools for new disciplines. We, now can see the natural outgrowth of their work, and in the current problems of health and disease and for the general advancement of our civilization, the world is looking to chemistry for its contribution.

As chemists our contributions have advanced other and adjunct sciences, and therefore there was not much surprise when the recent Nobel Awards in medicine went to chemists. In our work we believe that a clear delineation should be made at all times between the science we represent and the sciences we help to advance.

If the above be the case, the Diamond Jubilee of the American Chemical Society is also our legitimate birthday.

## THE SECRETARY REPORTS

This might be a good opportunity to examine some statistics. Beginning with eight members who organized the Association on December 15, 1948, the membership increased to 169 by December 31, 1949. One year later the roster expanded to 330, and at present numbers over 400. This is apparently a normal rate of growth, although no one would be so bold as to attempt extrapolations.

The membership potential of the Association cannot be accurately forecast, but it is interesting to note that according to a report in the New York Times of January 10, 1950 the American College of Surgeons announced that it had given approval to 3,284 hospitals in the United States and Canada as having met the standards of the College. This compares with 89 that qualified in 1918. In the New York metropolitan area alone there were 153 such hospitals, with 122 that had bed capacities exceeding 200. Although this office does not have available any figures on independent clinical chemistry laboratories, their number is also no doubt quite large. The future growth of the Association may be correlated with the above statistics.

Membership certificates have thus far been distributed to some 50 applicants. The art work on this scroll has been praised by many who have seen it, and the scroll helps to decorate any library, den, office, or laboratory. The fee, which is four dollars, has thus far merely defrayed the costs of engraving and distribution. It is available to all members, and details for obtaining this scroll may be found in another section of the newsletter. Also, some members have become impatient when not receiving their certificates soon after they were ordered. These first go to an artist for name inscriptions, and we usually wait until several have first been ordered.

The costs for printing and distribution of the CLINICAL CHEMIST have thus far required about one-third of the Association budget. Even this has been made possible by the fact that all services are contributed voluntarily, including those of our managing editor, who is neither a chemist nor a member of the Association. Some income is obtained from our advertisers, but with a limited circulation such income can only be a fraction of the total costs. The CLINICAL CHEMIST should not only be a means of distributing news of interest to our members, but also a forum for exchange of ideas. The latter function has thus far not been fully utilized. Perhaps our members do not always realize that this is their newsletter.

Respectfully submitted,  
Max M. Friedman

## MEMBERSHIP CERTIFICATES AVAILABLE FROM SECRETARY

Members wishing to order membership certificates may do so by sending a check or money order for \$4.00, payable to the American Association of Clinical Chemists, to Louis B. Dotti, Chemistry Department, St. Luke's Hospital, 113th St. and Amsterdam Ave. New York 25, N.Y. An accompanying letter should state the way in which the name is to be inscribed and whether or not a degree is to be included.

The certificates are 8 by 11 inches, printed in black on parchment paper with a gold seal and are suitable for framing.

## New York Section

Ralph S. Overman, Cornell University Medical School, New York Hospital, was guest speaker at the scientific session of the Metropolitan New York Section held Friday evening, May 25, 1951, at the Medical Arts Center Hospital. Dr. Overman spoke on "Prothrombin Time Determination".

"All quantitative methods based on empirical rather than stoichiometric relationships, can give reliable and reproducible results only by strict conformity to rigidly standardized manipulative conditions. This is especially true for the prothrombin time determination, since one is dealing with the sensitive and variable process of blood coagulation", said Dr. Overman.

Dr. Overman presented the method that he has found very satisfactory in his work on either whole or diluted plasma. He has found that a good constant temperature water bath is important. The whole or diluted plasma are placed in the water bath at 37° C. 0.2 ml. of the thromboplastin-calcium chloride suspension is blown into 100 x 12 mm test tubes and also placed in the constant temperature bath.

When the tubes have reached the bath temperature, the prothrombin time of the plasma is determined as follows: the tube containing the whole plasma is shaken and 0.1 ml. is transferred with 0.1 ml. pipette (micro blood sugar) to a tube containing 0.2 ml. of the thromboplastin calcium chloride suspension. The plasma is quickly blown from the pipette and at the same time the stop watch is started. (The stop watch can be conveniently operated by a foot treadle).

The tube is tapped sharply to mix the solutions. This insures initiation of the clotting process uniformly throughout the solution. A small stirrer made of No. 22 nichrome wire with a small loop on the end is then introduced. If any small droplets are present on the sides of the tube they can be removed by passing the stirrer over them, thus making certain that all the constituents are in the bottom of the tube. At this stage only 2-3

seconds have elapsed since the time the plasma was added to the thromboplastin-calcium chloride suspension. The mixture is stirred so that the stirrer loop sweeps across the test tube from one side to the other at a rate of two times per second. The end point (formation of clot) is that point at which the fibrin clot is sufficiently stable to be drawn to one side by the stirrer, thus bringing into view a clear area. The clot is usually somewhat turbid, since the calcium oxalate formed upon calcifying the oxalated plasma is enmeshed in the clot.

The formation of fibrids, which impart a viscous appearance to the solution before the clot forms, can be disregarded. The number of seconds required for the clot formation is recorded. The same process is repeated for the diluted plasma.

## Philadelphia Section

The ninth scientific meeting of the Philadelphia Section of the American Association of Clinical Chemists was held on Thursday, May 24, 1951, at Temple University School of Medicine.

The results of the analyses of pooled sera which were distributed at the last meeting were reported and discussed.

This was followed by a panel discussion on the preparation of protein-free filtrates and the determination of blood sugar. The merits and demerits of the following procedures were discussed: Folin-Wu, Benedict, Folin micro, Nelson-Somogyi, Hagedorn & Jensen, and the Kaufman Method. Speakers on the panel were W.R. Brown, Hahnemann Medical College; Charles Grosscup, Abington Memorial Hospital; Wm. Spivak, Mt. Sinai Hospital; Margaret Vanderau, Presbyterian Hospital, and Cornelia Freitag-Drabbe.

At the business meeting the following officers for 1951-52 were unanimously elected: president, W.R. Brown, Hahnemann Medical College; vice-president, Albert Sample, Bryn Mawr Hospital; and secretary-treasurer, Cecilia Riegel, Lankenau Hospital.

Prior to the meeting R.W. Hamilton and Herman Siple arranged to show the laboratories of Temple University School of Medicine and of the Samuel Fels Research Institute to all who were interested.

## Southern California Section

Guest speaker, Borroughs R. Hill, Ph.D., biochemist at the Long Beach Veterans Hospital, addressed the third scientific meeting of the year, April 17, at the Los Angeles Veterans Administration Center. Dr. Hill, actively associated with Dr. Philip West in the cancer field, gave an "Evaluation of Diagnostic Tests for Cancer".

"To date there is no specific test that can be used as a diagnostic test for neoplastic disease. The search for such a specific test has been painstaking and many methods have been studied exhaustively, others only briefly. In the final analysis all that have been studied sufficiently have been shown to be nonspecific. Those tests that have been carefully analyzed have at least one thing in common: the diseases that give false positive reactions. These usually include acute and chronic infections; post traumatic states, pregnancy, and less commonly other generalized diseases such as diabetes, hyperthyroidism, etc.

"In reviewing the various procedures for possible diagnostic value, a number of proposed tests were described and evaluated. The following classification was used:

"I. Tests based on chemical changes in urine, blood, and body secretions.

"II. Tests based on immunological principles in urine, blood, and secretions.

"III. Tests based on enzymological principles in urine, blood, and tissues.

"Huggin's work on the Iodoacetate Index, Penn's investigations on tumor lipoids as antigens, and Menke's pentolysis experiments were given a more detailed discussion.

"In the final analysis none of the proposed methods are specific for the diagnosis of neoplastic disease. However, a few, such as acid phosphatase elevation in prostatic cancer with metastases to bone marrow, lymph nodes or liver, greatly increased androgen excretion in adrenal cortical tumors, urinary gonadotropin excretion in testicular tumors, and

## THE VITAMIN B COMPLEX. F.A.

Robinson, Deputy Director of Research, Allen and Hanburys Ltd.—xi—688 pages. John Wiley and Sons, Inc., New York, 1951. \$9.00.

Truly a remarkable book! The author has set out to review an extensive field and this objective has been more than attained. This work is encyclopedic. Following an introduction the author discusses *all phases*, physical through physiological in chapters headed Aneurine (Thiamine), Riboflavine, Nicotinic Acid (Niacin), Pyridoxine (Adermin: Vitamin B<sub>6</sub>), Pantothenic Acid, Biotin, The Folic Acid Complex, Vitamin B<sub>12</sub> (Erythrocin), p-Aminobenzoic Acid, Inositol, Choline and Miscellaneous Water Soluble Growth Factors. The work closes with a short chapter entitled Conclusion which emphasizes the importance of these factors in the metabolic activity of the cell. There is an extensive author index and an ample subject index.

The book may well serve as an example of how the *right man* can condense into a single volume an enormous amount of original literature without jeopardizing scholarship. About 3400 papers are cited. References are given at the end of each small section. Thus they seem to become a part of the text itself, for there they are, either on the page you are reading or a few pages further along. Others have used this device but somehow it hasn't seemed quite as successful. Perhaps it is the type format used here which makes it so pleasing.

The text itself is well written. If it weren't quite so difficult to predict, one might venture to say that this book is the definitive work covering the field to date. Experts in the various fields might find errors or might differ in interpretations. But for those of us who are not experts this book will serve as an indispensable review of this field.

This book would be well worth the price if it contained only the bibliography. With the text it is a distinct bargain. The author must be complimented on writing such an excellent book. To the reviewer, it is also an example of modern bookmaking at its

best for which the publisher and the printer must also be complimented.

Reviewed by Roy W. Bonsnes, Cornell University Medical College, New York, N.Y.

## NEW YORK SECTION HOLDS ELECTIONS

Dr. Israel S. Kleiner, professor of Biochemistry, New York Medical College was elected chairman of the Metropolitan New York Section of the A.A.C.C. The section membership was canvassed by mail ballots which were counted at the Section meeting held Friday evening May 25, 1951, at the Medical Arts Center Hospital.

Kurt G. Stern, adjunct professor of Biochemistry, Brooklyn Polytechnic Institute, was elected vice-chairman. Isadore Gubernick, Goldwater Memorial Hospital was elected secretary and Eliot F. Beach, Metropolitan Life Insurance Co., was elected treasurer.

The Section officers will also serve as members of the Executive Committee with Joseph Kahn, Maimonides Hospital, Harold D. Appleton, Goldwater Memorial Hospital and Bernard Klein, Kingsbridge V.A. Hospital and will hold office until June 1952.

Roy W. Bonsnes, outgoing-chairman appointed Harry Wolfson, Abe Saifer and Alexander I. Greenstein as the Section By-Laws Committee. This committee also functioned as the Nominating Committee for this first election. The proposed by-laws were presented to the newly elected executive committee and to the section membership and were approved. They will now be submitted to the National Executive Committee.

## NEW MEMBERS ELECTED BY THE EXECUTIVE COMMITTEE JULY 3, 1951

Anderson, Dolores E. — Elmhurst, Ill.  
Bruno, Richard B. — Coatesville, Pa.  
Coleman, Roger Dixon — Long Beach, Calif.  
Fenichel, Richard L. — New York, N.Y.  
Gast, Joseph H. — Houston, Tex.  
Holden, Robert J. — Jamaica, N.Y.  
Moreland, Ferrin B. — Houston, Tex.  
McCarthy, John J. — Racine, Wis.  
Melville, Robert Seaman — Flossmoor, Ill.  
Samuelson, George S. — Brooklyn, N.Y.  
Siket, A. — New York, N.Y.  
Smith, Frank A. — Rochester, N.Y.  
Stewart, Gordon S. — Chicago, Ill.

It was with regret that we learned of the recent death of Emil K. Ventre, senior research chemist of the Research Division of Agriculture Chemistry at the United States Bureau of Agriculture and Industrial Chemistry in Houma, La. He was born in Opelousas, La., in 1899 and received his education at the University of Louisiana.

\*\*\*\*\*

Among the members of the American Association of Clinical Chemists who presented papers at the Thirty-fifth Annual Meeting of the Federation of American Societies for Experimental Biology held in Cleveland April 29-May 3 were Carl Alper, Marie A. Andersrsch, Paul D. Bartlett, Emil J. Baumann, Francis Binkley, Russel O. Bowman, Bernard L. Brodie, Albert A. Dietz, William C. Foster, Monroe E. Freeman, Oliver H. Gaebler, Robert M. Hill, George T. Lewis, H.J. McDonald, Harold L. Mason, Morton F. Mason, Samuel Natelson, Norman S. Olsen, John G. Reinhold, J.I. Routh, David Seligson, Herman Sipler, Warren M. Sperry, Donald D. Van Slyke, and Elinor M. Zorn. It has been the policy of THE CLINICAL CHEMIST in the past to publish abstracts of papers by our members but due to the large number of papers given at this meeting and because such papers are available elsewhere we will not do so in this issue.

\*\*\*\*\*

Irving Sunshine has left the Kingston Laboratory in Kingston, N.Y., and will be toxicologist and assistant biochemist to the University Hospital in Cincinnati, Ohio. He will also be connected with the Western Reserve University Medical School.

\*\*\*\*\*

Isidore Gubernick will be chief chemist at Jewish Memorial Hospital in New York City. He was formerly assistant chemist at Goldwater Memorial Hospital in New York City. He succeeds Dan Mishkind who is now serving in the United States Army as an officer in the Medical Specialty Corps.

the presence of melanin precursors in the urine of individuals with melanoma, have been shown to be of aid in diagnosis".

The remainder of Dr. John W. Mehl's summary of his February 20 address on "Electrophoresis" follows. In the last issue, Dr. Mehl evaluated the place of electrophoresis in clinical chemistry, pointing out that time and expense are objections to conventional electrophoresis.

"The development of filter paper electrophoresis according to the techniques of Durrum, and more recently of Cremer and Tiselius, overcomes these objections to a considerable extent. The cost of equipment becomes reasonably small, and since a number of samples may be run simultaneously, the time factor becomes less important.

"From theoretical considerations, and experience with the methods, the Cremer and Tiselius procedure is superior. The use of chlorobenzene to seal the system and provide temperature control is not entirely unobjectionable from the standpoint of hazard and unpleasantness. The alternative of controlling temperature by using aluminum or copper blocks in close proximity to the filter paper appears to be satisfactory, provided that the edges of the filter paper are sealed to prevent evaporation. The problem of equilibration of the filter paper with buffer before adding the protein has been solved by Dr. R. J. Winzler, and evaluation of electroosmosis can be made by using an uncharged substance. Certain problems remain to be studied, and methods for analysis of the filter paper strips at the end of a run are not entirely satisfactory. However, the method is useful in its present form, and shows great promise for future development".

#### AACC TO TAKE PART IN

(Continued from page 1)

New York Section, has appointed Kurt G. Stern, chairman of the Program Committee. He will be aided by Joseph Kahn and Isadore Gubernick. This committee plans an Association dinner at which foreign scientists whose interests lie in clinical chemistry will have a chance to meet their fellow

American scientists who practice in this field. Tickets to the dinner will be on sale at the ACS. Event-booth at the Hotel Statler. The time and place will be announced in the special events program to be published in the "Chemical and Engineering News."

The AACC will also have an exhibit which will emphasize to the public the role clinical chemistry plays in the protection of the public health. This exhibit will be held in the New York Academy of Science. Albert E. Sobel is chairman of the Exhibit Committee.

The technical program of the World Chemical Conclave features many symposia and papers of interest to clinical chemists. It is published in Chemical and Engineering News, Volume 29 No. 26, June 25, 1951.

Due to post office regulations only mail addressed to THE CLINICAL CHEMIST may be sent to Box 123. For the benefit of members wishing to write to the officers of the Executive Committee of the American Association of Clinical Chemists we are printing their addresses.

**PRESIDENT**—John C. Reinhold, Pepper Laboratory of Clinical Medicine, University of Pennsylvania Hospital, Eighth and Spruce Streets, Philadelphia, Pa.

**VICE-PRESIDENT** — Albert E. Sobel, The Jewish Hospital of Brooklyn, 555 Prospect Place, Brooklyn 16, N.Y.

**SECRETARY** — Max M. Friedman, Chemistry Department, Queens General Hospital, Jamaica 4, N.Y.

**TREASURER** — Louis B. Dotti, Chemistry Department, St. Luke's Hospital, 113th Street and Amsterdam Avenue, New York 25, N.Y.

Do you know any clinical chemists who would be benefited by joining the American Association of Clinical Chemists? If so, why not tell them about your Association?

#### ASSOCIATION DINNER HELD

(Continued from page 1)

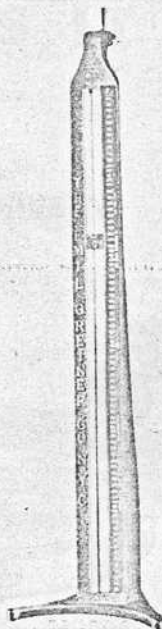
must live with the test for awhile before he can possibly understand it or perform it correctly.

The contributions of D. D. Van

#### NEW APPARATUS

A new, large range Absolute and Differential Manometer designed to cover more than one atmosphere pressure, has recently been introduced by the Emil Greiner Company, 20-26 North Moore Street, New York 13, New York.

In the same manner as the Greiner small Manometer, this large range instrument provides absolute or differential manometric measurements with simplicity and high precision.



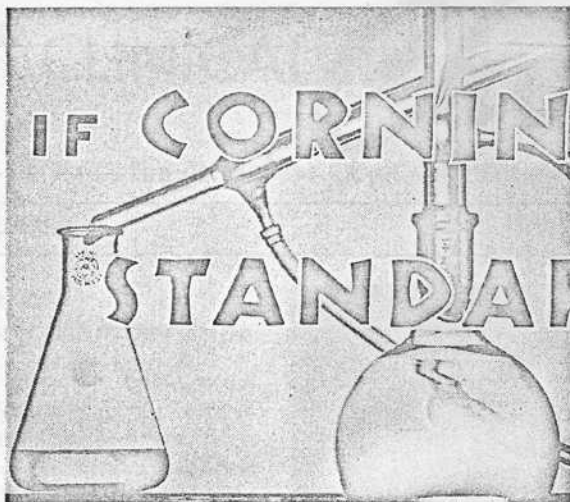
Designed with a new silk screened scale on saran, the Manometer is extremely durable and accurate. Now, temperature coefficient of expansion of saran exactly compensates for changes in mercury density due to room temperature variations.

Other features include: two rods for easy mounting on a frame; protective bracket for stopcock; metal rod to carry vernier; U cut-out on vernier carrying block to eliminate parallax in reading the meniscus; rigid aluminum casting to support glass assembly.

Slyke and Otto Folin to the field of clinical chemistry were praised by Dr. Wu who was impressed with the way the Association has grown. He said that although clinical chemistry meant very little during the early part of the century it has now become an established profession.

Drs. Reinhold and Gæbler discussed the current problems which confront the clinical chemist.

(The report of this meeting was submitted by Virginia C. Brown, Lancaster, Pa.)



## SAFETY--ECONOMY--CONVENIENCE

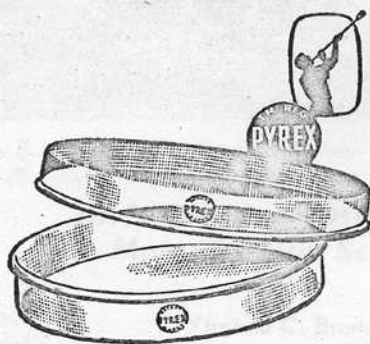
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# The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 3, NUMBER 5

SEPT. - OCT. 1951

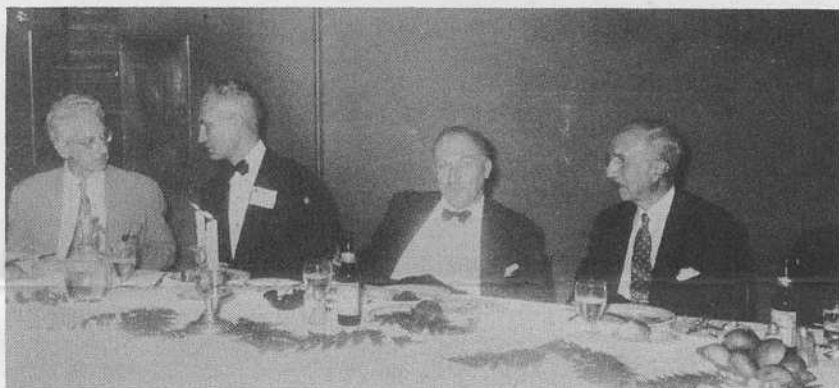
## Bestow Three Honorary Memberships

In keeping with the International flavor of the World Chemical Conclave held in New York City beginning September 3rd, two of the three men honored by election to Honorary Membership in the American Association of Clinical Chemists, were distinguished foreign clinical chemists, Dr. Earl Judson King, Professor of Chemical Pathology, University of London and Professor Doctor E.C. Noyons, Nijmegen University, Holland. Dr. Norman R. Blatherwick, was the American designee for this honor because of his scientific work and his work on behalf of the Association. Dr. Noyons and Dr. Blatherwick were unable to attend the Association Dinner, September 7th, and the National Secretary Dr. Max M. Friedman received the membership scrolls on their behalf. Professor Noyons sent a letter of acceptance (page 3) which was read to the assembled group by Dr. John G. Reinhold, President of the A.A.C.C.

Earl Judson King, B. A., M. A., Ph. D., D. Sc., F. R. I. C., Professor of Chemical Pathology, University of London at Post Graduate Medical School, spoke on the "Chemistry of Silicosis". He was educated in Canada at McMaster University and University of Toronto, later at Lister Institute in London and University of Munich. He became Director of the Biochemical Section at the Banting Institute, University of Toronto. Subsequently he was appointed Reader in Pathological Chemistry at the British Post Graduate Medical School. After returning temporarily to the University of Toronto, he was appointed to his present post in 1944.

Professor King has attained outstanding rank in two fields. His name is familiar the world over to clinical chemists as a result of his numerous

(Continued on page 3)



Dr. Jos Kahn, Dr. John G. Reinhold, Dr. E.J. King and Dr. Israel S. Kleiner. (Courtesy of Chemical & Engineering News.)

## E.J. KING SPEAKS ON SILICOSIS

Professor E.J. King, University of London, Post-Graduate Medical School, discussed "The Chemistry of Silicosis" as part of the AACC scientific contribution to the 75th Anniversary Meeting of the ACS. The lecture was given after the AACC Dinner, the evening of September 7, and was held in the Grand Ball Room of the Hotel Statler, New York.

Dr. King showed that the specific lung nodules described in medicine as typical of silicosis only occur from dusts that contain large amounts of silica. The size of the silica particles determine its solubility. If the particle size is three microns or less, then silica becomes relatively soluble. It is this solubility and deposition of the mineral in the tissues that cause the nodules of necrotic tissue. If the tissue is ashed the silica in these nodules can be demonstrated.

In animal experiments it was shown that if a silica solution was given intravenously the typical nodules will appear in other organs. Thus, the injurious effect is chemical rather than mechanical, as formerly believed.

(Continued on page 11)

## AACC Meeting Attracts Many Foreign Scientists

by  
Virginia C. Brown

The largest gathering of scientists from all parts of the world, interested in Clinical Chemistry, took place on Friday, September 7, at the Hotel Statler, N.Y., when members and friends of the AACC attended the association dinner-meeting which was part of the program of the 75th Anniversary Meeting of the ACS. The meeting was sponsored by the Metropolitan—New York Section of the AACC. Dr. Jos Kahn, Maimonides Hospital, was chairman of the program committee.

Prof. Israel S. Kleiner, New York Medical College, Chairman of the New York Section acted as toastmaster and welcomed the many members from the United States and Canada as well as the distinguished scientists from all over the world. Dr. Kleiner emphasized the importance of meetings such as this and pointed out how much they help to overcome the handicaps of the clinical chemist by presenting the opportunity to talk over mutual problems. Dr. Kleiner then turned the meeting over to Dr. John Reinhold, President of the AACC.

(Continued on page 11)

Newsletter of the American Association  
of Clinical Chemists, Inc.

P.O. Box 123  
Lenox Hill Station New York 21, N.Y.

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*Views expressed in the editorials and  
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of the American Association of Clinical  
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VOL. 3, NO. 5 SEPT.-OCT. 1951

## PENNSYLVANIA BILL 1205

On Page 5 of this issue will be seen an abstract of Pennsylvania House Bill 1205, dealing with regulation of private laboratories. This bill passed the State House of Representatives 200-6 and on September 17, as we were going to press was passed by the State Senate 49-1. Its enactment seems assured.

The purpose of this bill is to protect against incompetent supervision of clinical laboratories. It requires that such laboratories be directed by scientists with certain qualifications in education and experience. It also requires that the laboratories maintain proper standards of accuracy and ethical conduct upon penalty of revocation of their permits.

The American Association of Clinical Chemists, Inc., through action of its Executive Committee on Sept. 6, has given qualified approval to this act, because this legislation, for the first time in the history of that State, extends legal recognition to the laboratory operated and supervised by non-medical scientists.

Bill 1205 cannot be considered more than a first step toward the accomplishment of its purpose. Whether it can immediately eliminate the submarginal laboratory is doubtful. The emphasis on degrees and on time served in the laboratory will not assure competence. The exemption of licensed physicians from the requirements of the act leaves

a serious loophole. The possession of a license to practice medicine does not automatically endow its holder with knowledge and skills required in the laboratory. However, to apply similar requirements to physicians directing laboratories, it is said, would necessitate amendment of the medical practice act.

The bill, however, is a move in the right direction. The publicity attending the debate of the bill has educated both legislators and public concerning the existence of a serious problem. Its definition of "qualified persons" is broad. In principle, it will permit clinical chemists to direct private laboratories restricted to clinical chemistry without having to qualify, as is true in some states, in all branches of laboratory science. Clinical chemists await with interest the manner in which this law is administered and how it will effect their professional status.

On January 19, 1950 the A.A.C.C. Executive Committee passed a resolution defining the Association's policy in matters of legislation, (The Clinical Chemist Vol. 2 No. 2). This resolution, which contains a preamble defining the practice of clinical chemistry, three cardinal points are made.

"1 - We oppose any concept which defines the Practice of Clinical Chemistry as the Practice of Medicine."

"2 - We disapprove of any regulation requiring Clinical Chemists to pass examinations in techniques other than the field of Clinical Chemistry."

"3 - We propose to encourage the establishment of laboratories engaged in clinical chemistry, as defined, and directed by clinical chemists. Where such separate units are not available, we hope that the procedures in Clinical Chemistry shall nevertheless be supervised and performed by those whose training and experience is adequate in this science."

The abstract of Pennsylvania Bill 1205, and the articles pro and con by Drs. Dickman and Samson, appearing with it, make interesting reading, and should enable every member to visualize how new legislation of this type will affect him as an individual and his profession as a Clinical Chemist.

## NO CHANGE ON BOARD STATUS

In view of the fact that the American Board of Clinical Chemistry, Inc. has not as yet taken any action on the communications addressed to it by the Executive Committee of the AACC on February 7, 1951, the Executive Committee continues to urge the membership to refrain from any application for certification to the Board at this time.

The Committee still feels that the articles of incorporation and by-laws, as drawn up by the Board are unsatisfactory and it is in disagreement with a number of points on the qualifications for certification.

## To the members of the AACC

You will surely agree with us that the newsletter of the Association could play an important part in the advancement of our specialty. The Editorial Board would like at this time to present a few considerations to you.

We are anxious to make this publication self-supporting. This can only be accomplished by an increase in advertisements. However, the volume of advertisements we can accept is of necessity limited to the proportion of space devoted to news items. Which brings us to our point.

The members have not been adequately supporting this publication in the matter of news contributions. May we suggest the following items from you, which would be of reading interest to all our members.

1. Personal notes such as degrees, honors, change of employment, etc.
2. Letters to the Editor of less than 250 words concerning subjects of general interest, "gripes", etc.
3. Leading stories on subjects of general interest to clinical chemistry (subject to editing by the Board).
4. Anything else that pertains to the Association and to clinical chemistry.

We would deeply appreciate if you helped to make the CLINICAL CHEMIST a bigger and better newsletter.

Cordially yours,  
Editorial Board

\*\*\*\*\*



Dr. Norman Blatherwick

studies on phosphatases and other blood constituents. His work in Industrial Hygiene and Toxicology has been equally outstanding and he has participated in International Silicosis Conferences, also is a member of the Industrial Hygiene Section of the Q.L.O.

His many publications include two books "Microanalysis in Medical Biochemistry" and "Chronic Pulmonary Diseases in South Wales Mines". Since 1942 he has been Editor of the Biochemical Journal and Chairman of the Editorial Board since 1946. He is a member of the National Research Council (Great Britain) and of numerous Boards and Committees.

Dr. Norman R. Blatherwick was born in Rock Valley, Idaho and was educated at Grinnell College and the University of Illinois. He received his doctorate at Yale University in 1914. He was assistant chemist at Montefiore Hospital, New York 1914-1915, and also physiological chemist for the Bureau of Animal Husbandry of the U.S. Dept. of Agriculture from 1915-1920. From 1920-1928 Dr. Blatherwick was biochemist at the Potter Metabolic Clinic. In 1928 he joined the Metropolitan Life Insurance Company as director of their biochemistry laboratory.

He served with the Armed Forces in World War I as a Captain in the Sanitation Corps. Besides being a member of the American Association of Clinical Chemists. He is a member of the Physiological Society, Society of Biological Chemistry, American Chemical Society, Society Experimental Biology, Harvey Society and Institute of Nutrition. He has published papers in various

To the Committee and Members of the American Association of Clinical Chemists.

Ladies and Gentleman,

There is nothing that would have pleased me more than to have been able to stand before you (in person) in order to thank you most heartily for the honor you have bestowed upon me by the nomination of Honorary Membership in your Association. This letter came into being at my writing desk in far-away Holland: no doubt my words would have been far more spontaneous and cordial if spoken in the actual presence of your illustrious company. Unfortunately this is not possible, owing partly to the fact that I am too busily engaged with the organization of the only very recently instituted Faculty of Medicine at Nijmegen, partly to the fact that I am suffering from rheumatism, which restricts my ability to move to such a degree that I cannot undertake so long a journey.

Extraordinarily great is the gratitude I feel for the honor conferred upon me, but I should like to accept it less for myself personally than in the function of Chairman of the Netherlands Clinical Chemical Association, in which function I was succeeded some months ago by Dr. J.C.M. Verschure of Utrecht, physician as well as chemist.

In view of the enormous development of clinical chemistry and the concomitant expansion of the laboratories attached to hospitals and clinics we did not think it any longer justifiable to leave these institutions deprived of expert chemical direction. That is why a considerable number of hospitals in our country have already appointed clinical chemists at the head of their laboratories, whose tasks (as biochemists) might be defined as follows:

- 1) To direct and control the auxiliary staff attached to the clinical-chemical laboratories, and to be responsible for the trustworthiness of the analyses and determinations carried out by the laboratory on behalf of the clinical department.
- 2) To carry out scientific research in the domain of clinical chemistry. (At present the main interest is focussed on the

journals on his work in carbohydrate and fat metabolism, food composition, parathyroidectomy, experimental nephritis, milk secretion and insulin.

Professor Dr. E.C. Noyons is past president and one of the founders of Netherlands Clinical Chemical Association, Netherlands Klinisch Chemische Vereniging. He was recently appointed Professor of Physiological Chemistry at the newly instituted Faculty of Medicine at Nijmegen University. Dr. Noyons edited a four volume work on Clinical Chemistry "Chemic en Klinick". Two volumes of this work have already been published.

analytical aspect of the clinical-chemical research, but by and by, problems of chemical pathology will be tackled to an increasing extent.)

- 3) To afford scientific chemical assistance to physicians with regard to diagnosis and therapy, etc.

In an increasing degree, the clinical chemist in our country is looked upon as equally important as the other members of the staff of a hospital or clinic: naturally this circumstance gives rise to problems in connection with the question: ought the practice of the clinical chemist attached to a hospital to be officially recognized as a separate specialism? In Holland this question has not yet been definitely answered, in spite of the steps already taken by The Netherlands Clinical Chemical Association, in conjunction with the bodies concerned to secure this recognition. If I am not mistaken this question is also under consideration in the U.S.A. The establishing of such a new specialism inevitably entails all kinds of consequences with regard to the person of the clinical chemist, e.g. his salary, his relations to the "sick-funds", and his cooperation with the physicians attached to the same hospital. In order to promote the realization of this specialism a committee ad hoc has been recently set up. This committee has not yet brought its activities to an end.

The importance of the institution of the Netherlands Clinical Chemical Association has already clearly manifested itself. It has already gained the confidence of the clinicians and tries to arouse greater interest in clinical chemistry by organizing meetings, to instruct its members and to promote that determinations carried out at hospital laboratories are as exact as possible. Although our association numbers about 100 members it is not yet in a position to offer them anything like your splendid periodical "The Clinical Chemist". The membership of our association is only open to those physicians, chemists and pharmacists that have had a university training. In my opinion it is a matter of paramount importance for the Dutch Association to establish contact with sister-associations abroad, to prevent self-complacency and chauvinism. And since clinical chemistry is a science that is neither specifically European or specifically American, cooperation in this field is as essential as it is in many other fields. As chairman of our Association I was therefore extremely glad to learn from the publications and the correspondence arisen from them that a sister-association had seen the light in your great and wonderful country. Let us hope that the near future will see a close cooperation between you and our association and that, thanks to an extensive and frank exchange of ideas and ideals, efforts and findings, between the two societies, clinical chemistry may rise to that eminence to which it is entitled for the sake of our suffering fellow-creatures. There is the possibility for this bilateral cooperation to develop into a mighty world-organization.

I should like to conclude this letter of thanks with the wish that our united endeavours may contribute to the realization of this ideal.

God bless you all!

In another section of this issue may be found a complete financial statement of the Association as submitted by the National Treasurer. Examination of this statement does not disclose any vast resources at our disposal, nor does it indicate that the Association is prepared for undertakings that require major financial outlays. It does show, however, that a relatively small organization with minimal annual dues could function well within its budget and maintain its solvency despite the rising costs with which we have been confronted in the past few years.

The accomplishments on this limited budget are self-evident and need not be detailed. Our membership is now carefully selected and international in scope. Honorary members of world renown grace our roster. Our scientific programs in the field of clinical chemistry have been unexcelled. Our professional accomplishments in the realms of legislation and liaison with other scientific specialties have added immeasurably in raising the standards of clinical chemistry.

It may especially be noted that a major share of the costs are those diverted to this newsletter. The Executive Committee has on several occasions expressed its desire that our funds be used unsparingly in an effort to keep our membership informed as to the progress of the Association. The Editorial Committee, as well as this Report, has on frequent occasions expressed the desire that the members of the Association use the facilities of the newsletter for exchange of ideas and suggestions. Our attention has been called to various instances where releases pertaining to clinical chemistry appear in other news columns and no comparable copy submitted to our newsletter. Perhaps a constant reminder on this point would be valuable.

The function of an "associate member" is frequently misunderstood by applicants who refuse membership at this designation. An associate member is one who does not meet the requirements of full membership, and according to Article III of the constitution may be admitted to the Association as "Other persons who are interested in

the field of clinical chemistry and are engaged in scientific activities in clinical chemistry may be admitted to membership as associate members." Such individuals enjoy all the privileges of membership in the Association, have equal voting rights with full members and are only limited in that neither the President nor Vice-President may be an associate member, and "at least six members of the Executive Committee shall be full members of this Association (Art. IV)". Also every associate member has the privilege of periodically asking for a review of his status with the request to be designated a full member.

*Max M. Friedman, National Secretary*

**SCHALES ELECTED**

Dr. Otto Schales, Tulane University, New Orleans, La. was elected Secretary-Treasurer of the Division of Biological Chemistry of the American Chemical Society, at the division business meeting held at the Hotel Statler New York, on September 6. Dr. Schales is an active member of the AACC. He will serve for a term of three years succeeding Dr. Paul W. Preisler of St. Louis, Mo., also a member of the AACC.

The California law for the regulation of clinical laboratories and the licensing of directors and personnel (The Clinical Chemist, Vol. 3 No. 1 Jan. 51), was passed by the State Legislature and signed by Gov. Earl Warren.

The negotiations for this law was carried out by the Legislative Committee of the Southern California Section AACC and had the approval of the National Legislative Committee.

**MEMBERSHIP CERTIFICATES AVAILABLE FROM SECRETARY**

Members wishing to order membership certificates may do so by sending a check or money order for \$4.00, payable to the American Association of Clinical Chemists, to Louis B. Dotti, Chemistry Department, St. Luke's Hospital, 113th St. and Amsterdam Ave. New York 25, N.Y. An accompanying letter should state the way in which the name is to be inscribed and whether or not a degree is to be included.

The certificates are 8 by 11 inches, printed in black on parchment paper with a gold seal and are suitable for framing.

**MEMBERSHIP REPORT as of August 31, 1951**

Honorary Members	2
Full members	292
Associate Members	<u>108</u>
Total	402

Dues in arrears for 1 year	Full	18
	Associate	<u>9</u>
	Total	27

Dues in arrears for two years	Full	3
	Associate	<u>2</u>
	Total	5

New Members 1951	Full	49
	Associate	<u>26</u>
	Total	75

**REPORT OF TREASURER  
July 1, 1950 to June 30, 1951**

Income		Expenses	
Membership dues	\$1530.50	Secretary	\$144.46
CLINICAL CHEMIST	434.70	President	81.43
Certificates	212.00	Treasurer and Membership	71.75
Bank Interest	15.61	Executive Committee	118.38
Total	<u>2192.81</u>	Section Allotments	99.50
Income	\$2192.81	CLINICAL CHEMIST	1142.50
Expenses	<u>1904.27</u>	Certificates	<u>246.25</u>
Balance	288.54	Total	1904.27
Balance, 1950	826.35		
Balance as of July 1, 1951	-	\$1114.89	

## LOCAL SECTION NEWS CALIFORNIA SECTION ELECTS OFFICERS

Arnold G. Ware, Ph.D., head chemist, Los Angeles County Hospital, and assistant professor of biochemistry, University of Southern California School of Medicine, has assumed duties as new chairman of the Southern California Section of the A.A.C.C. Newly elected officers are: program chairman and chairman-elect, Richard J. Henry, M.D., Bio-Science Laboratories, Inc.; and secretary-treasurer, Kenneth D. Johnson, Albert L. Chaney Chemical Laboratory.

### Southern California Section

Albert L. Chaney, Ph.D., and Arnold G. Ware, Ph.D., were joint speakers at the May 21 scientific meeting held at the Los Angeles County Hospital. An abstract of Dr. Chaney's paper, "Use of Distillation for Isolating Trace Constituents as Applied to the Determination of Protein-Bound Iodine", delivered earlier in Boston at the national meetings, can be found in the May issue of the newsletter. Dr. Ware summarizes his address, "Elimination of Errors in Prothrombin-Time Determinations with the Use of a Simple Controlled Test", as follows:

"Including several of the recently discovered clotting factors, there are at least seven variables which affect the Quick test:

"1. Oxalate concentration in the unknown plasma - determined to a significant degree by the hematocrit value of the blood being tested.

"2. Fibrinogen- occasionally absent or present in amounts low enough to affect the test.

"3. Anti-thrombin (heparin)- a profound problem when heparin is administered or when released under certain conditions in vivo.

"4. Anti-thromboplastin- a newly discovered anticoagulant which is normally present in plasma and which is one of the more important factors affecting the Quick test.

"5. Accelerator globulin (labile factor)- originally Quick's prothrombin

A, discovered because of its marked instability in oxalated plasma; markedly affects the Quick test.

"6. Thromboplastin- the activity and stability of the reagent used for the test is a perennial problem. There is no such thing as a stable thromboplastin with constant activity. In addition, the so-called "normal" patient, used as a reference, is subject to variation.

"7. Changes in prothrombin activity on standing- it is usually impractical to run a prothrombin test immediately after drawing the specimen. In numerous instances four to six hours will elapse. There are at least two changes which take place: (1) the rapid disappearance of accelerator globulin and (2) a newly recognized phenomenon which causes the prothrombin time to become more rapid. These changes are ordinarily not apparent because they tend to counteract each other, but they can produce a marked effect on the prothrombin time.

"The above mentioned difficulties are successfully avoided by using a revised prothrombin-time test similar to the one described by Paul Owren *Scand. J. Clin. and Lab. Invest.*, Vol. 1, page 81, 1949). It differs from the Quick test mainly in two respects: "(a) It requires dilution of the unknown plasma.

"(b) It requires the addition of an aliquot prothrombin-free beef plasma. Dilution successfully avoids the effects of anti-thrombin (heparin) and anti-thromboplastin, whereas the prothrombin-free beef plasma provides constant stable amounts of accelerator globulin and fibrinogen.

"In addition, a dried, stable prothrombin standard has been devised which provides a simple way of evaluating thromboplastin activity. Using a new anticoagulant in place of 0.1 M oxalate, the above noted changes in prothrombin activity may be avoided so that periods of at least seven hours elapse without introducing significant changes in the prothrombin-time.

"This test apparently measures prothrombin specifically. Because of its simplicity and reproducibility, it is thought to be an ideal approach to the problems of dicumarol therapy,

## Chicago Section

The May 25 meeting of the Chicago Section, Dr. Saul Roseman, Secretary of the local section AACC, and Instructor in Pediatrics and Biochemistry, University of Chicago Medical School, was substitute speaker of the evening. Dr. Albert Dorfman of the Department of Pediatrics, University of Chicago, was scheduled to lecture on "Biochemistry of Connective Tissue", but was unable to be present at the meeting. Dr. Roseman spoke on "Metabolism of Dicumarol".

On June 1, Dr. William S. Hoffman, Head of the Department of Biochemistry, Cook County Hospital, spoke on "Problems of Disturbed Potassium Metabolism".

The program committee of the Chicago section is planning to have several of the local hospitals, members and non-members of the AACC, do certain clinical chemical determinations on a large batch of pooled serum. No final plans have as yet been made. However, one of the prime features is that no one laboratory will act as the referee. The results will be handed in anonymously and each chemist will know, for his own information, just how far off from the average his results are. The section members will be notified by the Secretary when this feature will take place.

## New York Section

The secretary will inform the membership by mail, the date and program for the next meeting of the Metropolitan New York Section. The meeting will be held in the Auditorium of the New York Medical College.

The first scientific meeting of the section was held in conjunction with the Association Dinner-Meeting, held during the Diamond Jubilee of the ACS.

### NEW MEMBERS ELECTED BY THE EXECUTIVE COMMITTEE SEPTEMBER 11, 1951

Arthur W. Wenger, Salt Lake City, Utah  
James E. Barlow, Hudson, Mass.  
Roger S. Hubbard, Buffalo, N.Y.  
Sidney Roberts, Los Angeles, Calif.  
Charles Sobel, Los Angeles, Calif.  
Robert L. Dryer, Indianapolis, Indiana  
Ruth Eyles, Atlanta, Ga.

(Continued from page 1)

Dr. Reinhold introduced many of the distinguished guests among whom were Prof. J. Courtois, President of the Associe de Chimie Clinique, France, Prof. Reno Truhoit and Prof. Cl. Fromageot, of the Sorbonne, France, Dr. E.J. King, University of London, England, His Excellency Prof. P. Rondoni, Dean of the Medical School, University of Milan, Italy, Prof. Edward J. Conway, University of Dublin, Ireland, Dr. Cuic Ashelof, University of Uppsala, Sweden, Dr. Pier G. Mar, St. Joseph's Hospital, Victoria BC, Canada, and one of the first Canadian members of the AACC was also introduced.

Dr. Reinhold pointed out that ours was a young organization, having been founded in New York City in 1948, with the purpose of aiding the clinical chemist and his profession. To fulfill this goal the association now has committees that are busily working on a book of fundamentals and tested procedures, a university level, program for the training of clinical chemists, and a Committee on Standards to evaluate laboratories and personnel.

"State legislation is a most important consideration at the present time," said Dr. Reinhold, "it is the responsibility of the AACC to investigate just what type of law is necessary to best benefit both the public and the practice of clinical chemistry."

Dr. Reinhold then presented Honorary Memberships to Dr. Norman Blatherwick, United States, Prof. Dr. E.C. Noyons, The Netherlands, and Prof. E.J. King, England. Dr. King, Professor of Chemical Pathology at the University of London, was the main speaker of the evening. His lecture, "The Chemistry of Silicosis" is reported in this issue.

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The animal studies also showed that the relative dangerousness of dusts is proportional to the concentration of free silica, as well as the particle size of this mineral. The other constituents of dusts are inert or exert a modifying effect on lung reaction to the silica. Dr. King showed slides in which pure coal dust showed no harmful effects on lung tissue, yet the lung picture was completely changed when this dust contained silica.

Dr. King also described the work being done to combat the incidence of silicosis among those who work in dusty atmospheres. One prophylactic measure discovered in the chemical laboratories, was the effect of hydrated alumina dust in contact with silica dust. The presence of alumina decreases the incidence of silicosis. This is due to the fact that aluminum hydroxide coats the silica particles and greatly decreases their solubility. The presence of alumina as dust has no harmful effects on animals.

#### EXECUTIVE SECRETARIES MEET

A meeting of the World Conference of Executive Secretaries of Chemical Societies was held at the Hotel Statler in New York City on September 10, 1951. The Association was represented by Max M. Friedman, National Secretary.

Chemical societies from about thirty countries were represented. This international group was officially welcomed by Alden H. Emery, Executive Secretary of the American Chemical Society. The main address of the session was given by Dr. P. Auger, Director of Department of Natural Sciences of UNESCO. Dr. Auger indicated some of the work undertaken by his Department, and especially the attempts at circulating the vast literature in the sciences amongst all the nations of the world. This was followed by a general discussion of topics of common interest to secretaries of chemical societies.

The arrangements for this unusual meeting were made by Dr. Garnet T. Page, General Manager of the Chemical Institute of Canada.

Two members of the AACC, Dr. O. Francis Binkley, University of Utah, and Dr. Kurt G. Stern, Brooklyn Polytechnic Institute, participated in a three-day biochemistry meeting held August 15-17 at the Brookhaven National Laboratory, Upton, N.Y.

Dr. Stern told an audience of more than two hundred scientists from the United States, Canada and England, that his laboratory had discovered that cell genes are probably all of the same chemical composition. Heretofore, it was believed that each gene had a different composition. Dr. Stern showed that the chemical makeup of each gene is perhaps similar, but that the physical shape of the molecule make the genes perform different functions. He believes genes to be made up of chains of similar chemical material, and that each chain is different in length. The length of the chain determines it's function.

Dr. O. Francis Binkley, told how he found a new and unexpected function of a nucleic acid, that can break down proteins in the same manner as enzymatic action. This nucleic acid is closely associated with cell genes. The exciting part of this work is that all enzymes so far detected are proteins, and if other enzymatic factors are nucleic acid, they will be easier to handle and detect.

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#### THE EDITOR'S NOTEBOOK

*Members, who read the Clinical Chemist from cover to cover, will probably wonder at the omission of Marjory Prager as Managing Editor. Miss Prager, (Mrs. Roy W. Bonsnes), volunteered her services and former newspaper experience to our organization. If any plaudits are received for a fine young publication and of better communication between fellow clinical chemists throughout the world, it was because Mrs. Bonsnes gave unselfishly of her time and efforts.*

*The Bonsnes' are now on an extended motor trip across country. We wish them the very best of vacations and hope that the pleasant association will be revived on their return.*

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# The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 3, NUMBER 6

NOVEMBER 1951

## DUTCH SOCIETY INVITES AACC

Dr. J.C.M. Verschure, M.D. President of the Netherlands Klinisch Chemische Vereeniging, the counterpart of the American Association of Clinical Chemists in Holland, described the program and activities of the Dutch association in a letter to the President of the AACC, Dr. John G. Reinhold.

Dr. Verschure proposes an international meeting of clinical chemists to be held in Amsterdam, Holland, September 1952. This would be the fifth anniversary of that organization. Dr. Verschure's letter follows, with Dr. Reinhold's reply.

Dear Dr. Reinhold,

Prof. E. Noyons at Nijmegen told me you were interested in the activities of the Dutch Association of Clinical Chemists from which I have the honour of being the chairman after Prof. Noyons went to Nijmegen and finished his task of leading the Dutch Association.

I gladly conformed to your wishes and will give you the following information. The Dutch Association of Clinical Chemists was founded in 1947 as a section of the Netherlands' chemical association.

Already from the very first it showed a strong development and now it counts 123 members. As members only the academical graduates are accepted. They are mostly chemical men, but there is also a considerable group of pharmacists, specialized in this direction.

In 1949 a specialization-programme was developed and a board elected to control a specialists' registration. A two-years stage in clinico-chemical laboratory was accepted and besides that the prospective members must have their doctor's degree and have to conform to a biological training-programme.

The registered specialists form a separate group within this association, which promotes their specific, social, financial and scientific progress. At present 31 people are registered.

At the beginning some difficulties were encountered with the medical profession because some medical men had specialized for laboratory-work and claimed a monopoly in the field of clinical chemistry.

However every-day practice chose the chemists in practically all the big hospitals of this country.

## INTERNATIONAL GROUP FORMED

The recent ACS Diamond Jubilee, that brought chemists from all over the world to attend the ACS meetings and those of the International Congress and Union, brought clinical chemistry to world wide attention.

An International Committee on Clinical Chemistry was appointed by the international chemists groups. Prof. E.J. King, University of London Post-Graduate Medical School, recently elected Honorary Member of the AACC, was appointed chairman of a committee of three. Dr. Warren Sperry, will represent the United States. Prof. J. Courtois, President of the Associe de Chimie Clinique, France, is the third member.

## METHODS COMMITTEE REPORTS

Miriam Reiner, chief chemist at the Gallinger Municipal Hospital, Washington, D.C., and chairman of the Methods Committee of the AACC, reported her committee's progress to the Executive Committee at the last meeting held in New York City, September 6.

Miss Reiner stated that the first volume of the compendium on methods, to be published under the auspices of the American Association of Clinical Chemists, Inc., is now well under way, with prospects of completion within the next few months. Methods selected for publication in the first volume have been distributed for evaluation to all participating laboratories. About 80% of the laboratory data is in the hands of the Editorial Committee of the publication.

The committee is following a procedure, much like that used by Organic Synthesis, published by John Wiley and Sons. Methods selected for publication are checked and evaluated in several different laboratories. Those methods found satisfactory will be published in volumes which will appear at regular intervals.

## ACS PRESIDENT GREETS CLINICAL CHEMISTS

Dr. N.H. Furman, President of the American Chemical Society, replied to the felicitation offered to the ACS on the occasion of that organization's Diamond Jubilee. Dr. Harry Sobotka, first elected president of the AACC, represented the Association at the colorful Ceremonial Session held in the 71st Regiment Armory, New York City, September 5.

Dr. Furman's letter to Dr. John G. Reinhold, President of the AACC, follows.

Dear Doctor Reinhold:

The certificate presented by the American Association of Clinical Chemists, Inc. to the American Chemical Society on the occasion of our Diamond Jubilee is one of the valued mementos of this event. The celebration has left happy memories in the minds of thousands. In the years to come reexamination of the certificates, scrolls, and gracious letters from our sister societies, presented at this time, will bring back these recollections.

I was gratified that the society of which you are president could participate in the celebration of our seventy-fifth birthday. The American Chemical Society values the close relations which it has with other scientific and engineering organizations. We have watched with interest the birth of your organization and have attempted to aid in its development. Your field is one which the ACS has encompassed for many years since there was no organized group specifically serving it. Truly the relationship between our two societies has been and must remain an intimate one.

It is hoped that success will crown the efforts of the American Association of Clinical Chemists as it carries on an activity started many years ago by the ACS. We hope it will expand its service beyond that which we could hope to provide.

N.H. Furman, President

Dr. Reinhold, in answering Dr. Furman's letter on behalf of the members of the AACC wrote:

Dear Dr. Furman:

I wish to thank you in behalf of the American Association of Clinical Chemists for your gracious letter acknowledging its felicitation of the American Chemical Society on the occasion of the Society's

(Continued on page 5)

(Continued on page 5)



Newsletter of the American Association  
of Clinical Chemists, Inc.

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*Views expressed in the editorials and opinions advanced by contributors do not necessarily represent the official position of the American Association of Clinical Chemists.*

VOL. 3, NO. 6 NOVEMBER 1951

## A STANDARD SOLUTION

The September issue of THE SECRETARY'S NEWSLETTER, distributed by The College of American Pathologists, announces that they have "1000 boxes of highly standardized solutions .... (containing) .... glucose solution which was very accurately standardized and was reassayed before packaging.... small units of nitrogen standard.... re-assayed after careful and accurate mixing. Test samples were sent to five authorities in widely separated geographic areas. The *physicians* (italics ours) in each case have reanalyzed these solutions quite accurately before the college labels were printed. etc. etc.."

The vials contain, Glucose 1 ml = 2 mg; Nitrogen, (Ammonium Sulphate), 5 ml = 1 mg N.

In the May 1951 issue of this newsletter (Vol. 3, No. 3) we took issue with a certain Health Department which had decided to send to clinical laboratories lyophilized sera as unknown checks. Assuming this Health Department needed checks, it approached the problem correctly. They knew they would have to send specimens very similar to those that the laboratories ordinarily receive. The drawbacks to the use of this particular type of specimen are, reconstituting the sera, and the uncertainty as to whether the reconstituted specimen will assay correctly after being sent through the-mails.

Standards, inspections, unknowns, etc. are not substitutions for the em-

ployment of individuals adequately trained to do the job. Modern medicine has become "laboratory medicine". A large number of clinicians await laboratory reports before they venture an opinion. Faced with this situation, and currently being endowed with directorships of the complete hospital laboratory setups, we realize the problems that confront the pathologists. "Is the laboratory report, above which my name is being stamped as having been done under my direction, accurate?"

We first mentioned adequate training. This, as we see it, begins with good university level training in quantitative analysis. With this training, one has an individual that is trained in the use of the analytical balance, the use of calibrated glassware, one who pipettes correctly and has a certain reverence for the volumetric flask, pipette and burette. This person knows enough not to dry them in a 300 degree drying oven, and knows how clean they should be for good work. Once you have such an individual, you have the building blocks for a good operator. If one can add a good knowledge of biochemistry, graduate work in pure chemistry, courses in physiology, pharmacology, toxicology, and adequate work in physical chemistry, and instrumentation, then you have a professional laboratory scientist that can ease your worries.

This scientist would know that the National Bureau of Standards will supply purified dextrose. With his knowledge and use of the analytical balance and his calibrated glassware, he would be able to supply the laboratory all the standards that they need. In fact he would be able to supply standards for any determination.

Even though clinical chemists consider a blood glucose determination, "simple," let us consider the errors and the pitfalls that are inherent in such a determination. The errors may start as soon as the blood is drawn. There should be good methods of collecting and preserving specimens. The correct anticoagulant and the correct amount of this reagent should be used. Glucose may disappear from a blood specimen at a rate of 5% per hour if this is not done. There are correct and incorrect techniques for pipetting whole blood. Methods for precipitating proteins are many. The sequence in which these reagents are added many greatly

influence the specificity of the method used and the recovery. The pH of the filtrate brings another factor to bear, and we still have not touched on methods for determining glucose.

In methods for glucose determination, the chemist has a choice of many. Some are, picrate, copper reduction, ferricyanide, and iodometry. Most of these methods can be made specific for glucose, dependent upon the handling of the blood. The method errors are, purity of reagents, pH of filtrate, time and temperature of heating, calibration of glassware, etc. When we choose an instrument to compare our unknown with our standard, we must realize that though the instrument is in perfect condition, there is a certain instrument error, which may be as high as 2%. Certain colors may follow the Beer-Lambert Law only over a narrow concentration range. Readings outside this range are not valid.

Now we have the "simple" blood sugar determination becoming a rather complicated procedure, quite dependent upon human error and technique. The busy clinician may say that he is satisfied, if his patients fall within the normal range, 70-120 mg%. Yet if the true glucose was 100 mg% one can run an error of  $\pm 25\%$  and still be within the normal limits. These are the bad determinations that untrained personnel do not pick up.

What we have illustrated for blood glucose applies more or less to every determination in clinical chemistry. The more time, reagents, aliquots, pH adjustments, etc. a determination needs, the more errors that are possible. Having a good accurate standard is not enough. Having good *laboratory standards* is the more important.

The AACC Committee on Education has submitted its report. We have published this in full with comments from noted science educators. Though these men differ slightly in their concept of training a good clinical chemist, their concepts differ not on how little formal training one should have, but how much. The hospitals must now realize that in order to bring modern medicine to their communities, they will have to compete with industrial institutions and other agencies for the services of the non-medical scientist. Their laboratory budgets will have to include something attractive for a graduate clinical chemist.

## A GOOD SUGGESTION

Gentlemen,

In response to your plea for letters from members, I would like to submit a suggestion. Would it be possible to have short courses of one to three weeks for clinical chemists comparable to the courses offered by the U.S. Public Health Service at Atlanta, Georgia for bacteriologists? Most recent theories, new methods, especially for such determinations as protein-bound iodine, 17-keto-steroids, etc.; new instruments, flame photometers, electrophoresis apparatus; comparison of different methods, and discussion of common problems would be of interest. I am sure many of us feel the need for such a course and would come back to our jobs stimulated with a new outlook.

Wadsworth, Kansas

Marie H. Carr

## WE ASK FOR VOLUNTEERS

Dear Editor:

The service that the newsletter has performed in keeping its members informed, is unquestionably praise worthy. Activities of the society and its members have been both faithfully and accurately reported. There is, however, another service which I would like to see initiated. This is the inclusion of an index of current literature and short digests of articles of particular interest to this field.

My own ideas would be to list articles dealing with the determination of different constituents in body fluids. As we all know, there are many such papers which appear constantly in all of the various journals of medicine and other fields allied to clinical chemistry. We should follow most of these, to keep abreast of the progress of analytical chemistry in the clinical field. Very often some of these articles are of particular interest since they deal with the analysis of new constituents, or since they involve unusual advancements in established methods. It is these that I believe **The Clinical Chemist** should abstract.

The clinical chemists' need for such an index to keep up with current periodicals are hampered by the tremendous volume of regularly published material and the inadequate facilities of most hospital libraries. Duties and studies pertaining to their jobs require most of their daytime hours. While the valuable evening hours could be utilized, the facilities of libraries open at this time are not available without the additional financial burden of membership in the societies providing these reading facilities.

As a supplement to our already very fine newsletter, I feel that such an addition would be deeply appreciated, not only by myself, but by the majority of the members of our Association. I would like to hear the opinion of other members.

New York

S. J. Skupp

Dear Sir:

Both the editorial on Pennsylvania Bill 1205 and the splendid summary of the legislative situation by Dr. Samson in the September-October, 1951, issue of the "Clinical Chemist" are items of considerable interest to the thoughtful clinical chemist and pathologist. The editorial writer, after reviewing the principles of the AACC, says that the passage of Bill 1205 was definitely a step in the right direction, but then points out that emphasis on degrees and on time served does not assure competence. He then states that the exclusion of physicians from the provisions of the act leaves a serious loophole. It seems to me that such a statement is indicative of the unfortunate animosity which has sprung up in some quarters between the clinical chemists and clinical pathologists. Surely it is a more serious loophole for the bill to allow a M.S. in any science, even Zoology, to practice all the branches of clinical pathology after a few years of "experience". It seems evident that the young physician having completed his schooling and internship, has already acquired a considerable non-technical knowledge in each branch of clinical pathology, and that hospital pathologists, certified or not, are not as a rule incompetent or unethical. The Belk-Sundeman report, often cited as THE horrible example, should be reviewed for several reasons; were it valid, most hospital laboratories would have been closed long ago by angry clinicians.

Dr. Samson's analysis and his statement of ideals deserves the highest praise. Both groups should hold fast to his dicta that there is no security which does not rest on principal and that "recognition" must not be gained by a loss in principal. Surely both groups, in recognizing their own limitations, recognize the need for each other; an example of such feeling is noted in the same issue of the "Clinical Chemist", wherein Dr. E.C. Noyons of Holland upon being granted honorary membership in the AACC, pointed out that membership in the Dutch association is open to "physicians, chemists and pharmacists" and that his successor as chairman is "Dr. J.C.M. Benschure, physician as well as chemist". Both groups after cogitating and conferring may come to realize that it was a serious mistake not to oppose strongly Bill 1205 instead of partly supporting its proponents. The bill should be recognized as a bad bill. It will be awkward and expensive to enforce and neither the public nor the ethical scientist will gain by it. The American College of Surgeons regularly inspects cancer clinics and the A.M.A. keeps close watch over hospitals. If reform of laboratories is necessary, should we blithely allow the State to be the reformer? Must not the chemists decide whether or not they wish to be drawn into the defense of directors of certain laboratories who desire to practice not only chemistry but hematology, serology, bacteriology, parasitology and possibly in the future even cytology?

Coatesville

V.A. Hospital

Coatesville, Pa.

Very truly yours,

H. B. LOCHHEAD, M.D.  
Chief, Laboratory Service

*We are sorry that our editorial statements were misunderstood. Pathologists, due to their specialty training, do have the qualifications to direct clinical laboratories. Some, have more than cursory chemical training, qualify to direct clinical chemistry laboratories. We can count many of these well trained scientists among our membership. Yet, this law excludes all physicians, and as we see it, anyone holding an M.D. degree can now direct a clinical laboratory in Pennsylvania, including the clinical chemistry laboratory, without state supervision. We believe that our principles are in keeping with those of the various groups of pathologists, in stating that the holder of an M.D. degree does not automatically endow that individual to direct a laboratory. Neither an MS with zoology training is qualified to do clinical chemistry. A graduate in chemistry might be much better qualified in the chemistry laboratory than those with considerable non-technical knowledge. We say once again, Bill 1205 left much to be desired. THE EDITORS*

## SEE EDITORIAL

Gentlemen:

The American College of Pathologists has mailed solutions containing analyzed amounts of glucose and ammonium sulfate to members of the college requesting them. The purpose of this distribution is to enable pathologists to check their standards, the technical ability of their staff, and as control samples. Confronted with the shocking results of surveys showing gross inaccuracies among pathologist directed laboratories the College is now attempting to redeem itself. The secretary's newsletter reminds the membership that no group other than pathologists has made an organized effort to improve the accuracy of laboratory tests.

A significant challenge is now presented to the American Association of Clinical Chemists. Those among us with experience in surveys are aware of the shortcomings entailed in the analysis of pure solutions as they do not approximate actual working conditions using biologic fluids or materials, which contain interfering and interacting substances. Separations, coprecipitation and all the hazards encountered in quantitative analysis are not found. Some progress has been made in the use of lyophilized serum but even there many "bugs" have to be ironed out. For example, in the writer's experience reconstitution presents a practical difficulty as it means working with fractional volumes. Different laboratories use procedures in which recommended methods of protein precipitation are not applicable. Much development is needed in that direction.

However, no matter how carefully standardized the solution or how the sample is presented there is still no substitute for the triad of (1) Supervision of analysis by responsible clinical chemists, (2) Standardiz-

*(Continued on page 10)*

The training in clinical chemistry should be at the level of the graduate school, and the attainment of a Ph. D., or D. Sc., degree should be the goal, if not the "norm," of those preparing to make clinical chemistry their life work. It is felt that at present the best environment in which graduate training might be pursued is that of a biochemistry department (perhaps in a hospital) operating within the framework of a medical school. The medical school, in turn, should form an integral part of a university which supports a graduate science program. The availability of certain medical school courses and clinics makes this set-up a desirable one.

The obtaining of an M. D. degree, followed by a period of about two years in fundamental biochemistry, would be an alternative acceptable path, provided sufficient course work in the sciences, including mathematics, was included to strengthen the background of basic science training.

For some years yet it may also be expected that a certain percentage of clinical chemists will enter the profession through less formalized channels. At present the educational background of clinical chemists is perhaps more heterogeneous than that of chemists in any other corresponding field. As long as the percentage does not exceed too large a figure, the absorption of members into the field of clinical chemistry who have obtained the doctorate in such fields as organic, physical, or inorganic chemistry could often add to the advance of the profession. As is well known, the unorthodox approach to, and the focusing of non-traditional skills on an old problem may often provide the stimulus which ends in a solution.

Admission to graduate study should generally require the completion of a program to a bachelor's degree in the field of chemistry from an accredited institution, with a minimum of one year of undergraduate training (including laboratory), in general, analytical, organic and physical chemistry, and biology (including zoology). In addition to these the student should have had at least one year of physics, mathematics through calculus, and a reading knowledge of German, French or Russian. As an alternative preparation for graduate work in clinical chemistry, a student who has completed a standard pre-medical program or a four year program in medical technology, and obtained a bachelor's degree, would be acceptable, although it would be necessary in most of the latter cases to complete a course in differential and integral calculus and a full year course in physical chemistry with laboratory before completing the work for the master's degree.

Students seeking an advanced degree in clinical chemistry should devote the first year's work to the consolidation of their knowledge of chemistry and to the completion of medical biochemistry and physiology. The latter courses had best be the courses offered to medical students. During the first year the student should also be given the opportunity to demonstrate competence to do research by beginning work on a research problem of a preliminary nature. In selecting his program, each student should be required to make up any deficiencies in his undergradu-

ate training. If the student plans to qualify for the doctor's degree, he should start on a "minor" in a related field outside the department of biochemistry, such as chemistry, microbiology, pharmacology, physics, physiology. In general, about two thirds of the semester hours required for the master's degree should be obtained from courses in the department of biochemistry and the remaining credits in other departments which offer work of value toward the professional objective desired. Students should not be permitted to register for more than about forty semester hours of graduate work without proving their ability by examination and by making satisfactory progress in research. Each student should participate in a regularly scheduled seminar devoted to aspects of biochemistry and clinical chemistry. In general, two full academic years should be required for the master's degree, and two additional full years for completion for the work for the doctorate.

Throughout the first year, the graduate student in clinical chemistry should attend the clinics presented to first year medical students. The clinics should be conducted periodically for the purpose of correlating basic knowledge and illustrating its application to clinical medicine. These clinics ought to be presented by the basic science teachers of the medical school and staff members of the related clinical departments.

Some cooperative plan, with hospitals associated with the medical school, whereby graduate students in clinical chemistry could spend summer vacations and a certain amount of time during the school year as assistants in hospital laboratories should be mutually beneficial.

#### Master's Research and Thesis

The preparation of a thesis should be a part of the requirements for the master's degree in clinical chemistry. The purposes of the research are to acquaint the student with the methods of scientific investigation, to stimulate his interest in such work, to place his knowledge on a firmer foundation, and to further his educational development. Much of the value of the research lies in the development in the student of some ability to work independently and to think critically. The thesis is a comprehensive report on the research.

#### Doctor's Research and Thesis

A thesis embodying the results of an extended program of research work is an essential part of the requirements for the doctorate. The research for the doctorate should be much more comprehensive than that for the master's degree, and it should be expected that it will represent a substantial contribution to *basic* knowledge (not methodology) in clinical chemistry. One of the major purposes of the research is to develop the student's power of independent investigation and analysis, and it should be expected that the student will take the initiative in planning and conducting the work with only general guidance from the research advisor. Thoroughness, accuracy, and a knowledge of the common tools of research, as well as the particular methods applicable to one's chosen field of study, are indispensable to the doctorate candidate.

**Acknowledgement:** Special thanks are due to Dr. Douglas A. MacFayden, Presbyterian Hospital, Chicago, for his constructive criticism and comments during the preparation of this report.

#### SOME COMMENTS

by Dr. Robert M. Hill  
University of Colorado

"In the first line of the second paragraph, 'The obtaining of an M.D. degree, followed by a period of about two years in fundamental biochemistry. . . .' For 'about two years. . . .' I should like to see 'at least two years in fundamental biochemistry (not methodology). . . .'"

"We must be sure to keep the standards as high as possible. If they prove to be too high they can be lowered, but if we start with standards that are too low raising them will be difficult. The standards for degrees in clinical chemistry should be in no way less rigorous than for degrees in any other subject. I repeat these convictions of mine so that you will understand my position and not as a criticism of your paper, which I think is excellent."

"The training of clinical chemists and the training of technicians are certainly two distinct problems and I think you are right in separating them."

by Dr. Arthur Knudson  
Albany Medical College

"There are several suggestions that I would like to make in regard to your educational program in clinical chemistry. In paragraph 1 it would seem to me desirable for the Biochemistry Department in the Medical School to be active in the operation of the clinical chemistry laboratory in their associate hospitals."

"In paragraph 2 the basic requirements for specialization in clinical chemistry could be stated. Then those individuals desiring to enter this field with an unusual background training should be expected to make up for any lack in the basic training."

"In paragraph 3 it is, no doubt, probable that persons with a wide variety of background will continue to enter the profession. This is desirable and should be encouraged. However, they should also be advised to make up any deficiencies in basic training."

"In paragraph 4 you used the term 'accredited institution.' Does this mean accreditation by the ACS?"

"In paragraph 5 the research work suggested for the first year students should be carried out in cooperation with a research program directed by a member of the Department. It would also be desirable to state the principal courses which the student should take in qualifying for a Master's and Doctor's degree, i.e.:

For a Master's Degree—Courses such as medical biochemistry, physiology, pharmacology and advanced biochemistry.

For a Doctor's Degree—In addition to above, microbiology, advanced analytical chemistry and clinical pathology.

"It would also seem to me attendance at basic science medical clinics and work in hospital laboratories is very important."

"I am in agreement with the remainder of your material discussed in your paper."

(Continued on page 8)

(Continued from page 1)

The programme of the Association is mainly composed of 3 meetings.

1. The annual session about all the interests of the Association, and mainly composed also of short scientific reports of the members on their current activities.
2. A chemical symposium; that of last year on the development of flame-photometry, that of this year on absorption-analysis.
3. Biological symposium, that of last year on renal-function, that of this year on adrenalin-function.

September 1952 brings us the fifth anniversary of the Dutch Clinical Chemical Association. The time seems to be ripe for assembling all forces in several countries that are working in this field.

We are in contact with various European countries.

In this item we now should like unofficially to invite you to join us September 1952 in Amsterdam and start with us the foundation of "The International Society of Clinical Chemists."

Doubtless you are in contact with other American countries and might represent American continent. A worldwide association of clinical chemists may promote the work of the individual research-man, for regular contacts between the countries and for many other points, that might come under discussion.

We hope you will take our proposal into kind consideration and expect your honoured answers as soon as it is convenient to you.

With the best greetings from  
the Dutch Association of  
Clinical Chemists  
and kind personal regards

Dr. J.C.M. Verschure, M.D.

Dear Dr. Verschure:

We have been hearing periodic reports of the activities of the Dutch Association of Clinical Chemists, however, I had no idea that such substantial progress had been made as that you describe in your letter. I am interested especially in your description of the specialists' registration program and the formation of a separate group within your Association by the Specialists. The American Board of Clinical Chemistry for certifying specialists began to organize independently before our Association was formed three years ago. It has been most dilatory and has still to announce the first list of certified clinical chemists.

Our Association meets at the same time and place as the American Chemical Society and most members also belong to the latter. The meetings include a program of papers on clinical chemistry or a symposium, together with a dinner. Our membership is so scattered that we have difficulty in assembling more than 50 of our 400 members. We have encouraged the formation of local Sections, of which there are now five. Each of these carries on its own scientific programs and has considerable autonomy. Our news letter "The Clinical Chemist" thus is of great importance in maintaining cohesion among members, Sections, and officers.

Your proposal to convene a meeting of

(Continued from page 1)

Diamond Jubilee. The opportunity to participate in the ceremonies was regarded by the Association as an honor and privilege that can rarely be equalled.

The benevolent interest of the American Chemical Society has done much to facilitate the growth of the Association. The privileges extended to the Association, that enable it to coordinate its meetings with those of the American Chemical Society and to utilize the admirable and efficient arrangements for such meetings serve as one example of the tangible help received. We are, indeed, grateful for this assistance.

The last few years have been characterized by a growing awareness of the problems presented by clinical chemistry and of the responsibilities chemists must assume to safeguard the public welfare. The public welfare requires that a sufficient number of scientists be trained in clinical chemistry to enable any physician to utilize at will the resources of chemistry in overcoming the inroads of disease. This will become possible only if clinical chemistry is accorded recognition as a field of professional activity fully as important as any other concerned with alleviation of human suffering. The American Association of Clinical Chemists will welcome the cooperation of the American Chemical Society as well as that of other interested Societies in achieving this recognition.

Sincerely yours,  
John G. Reinhold, Ph.D.

### NACL CONVENTION 1952

A three day convention is planned for 1952, by the National Association of Clinical Laboratories. This convention will be held in Chicago, May 8-10.

Business meetings, scientific sessions, laboratory tours, and social activities are planned. For further information contact, Donald Abel, Abel Laboratories, 7 W. Madison St., Chicago, 2, Ill.

clinical chemists in Amsterdam has great appeal. I am presenting the matter to our Executive Committee by mail, we will be unable to assemble again until December 26th. Amsterdam would be an excellent location for such a meeting. I am sure that some of our members have already planned to attend the 2nd International Congress of Biochemistry in Paris July 21-27. Perhaps the date of the clinical chemist's meeting could be moved closer to that of the International Congress.

It is indeed a pleasure to have been favored with your letter. I shall report to you the opinions of my colleagues regarding the Amsterdam meeting at my earliest opportunity.

Yours sincerely,  
John G. Reinhold, Ph.D.

Donald D. Van Slyke has become a counselor of the Lilly Research Grants, sponsored by Eli Lilly and Co., Indianapolis. Since 1948, Dr. Van Slyke has been Assistant Director of the Brookhaven National Laboratories, Upton, L.I. He was one of the organizers of the departments of biology and medicine.

\* \* \*

C.M. Mezey, M.D. is now associated with the Veteran's Administration Hospital in Shreveport, Louisiana.

\* \* \*

James J. Clements, formerly clinical chemist to the Binghamton City Hospital, Binghamton, N.Y., is now with the Laboratory Department, Reading Hospital, West Reading, Pa.

\* \* \*

George T. Lewis, member of the Executive Committee of the AACC, is now Chief, Division of Biochemistry of the Medical Research Foundation of Dade County, Miami, Fla. Dr. Lewis formerly was professor in the Department of Biochemistry, Emory University. He is also a member of the Advisory Board of **The Clinical Chemist**.

\* \* \*

Frank B. Cramer, Jr. has announced his availability as a consultant in medical basic sciences and statistics in association with the Los Angeles Biometrics Service, Pasadena, California. Mr. Cramer has had many years experience with Dr. Fred J. Moore, Professor of Experimental Medicine at the University of Southern Medical School and a strong advocate of statistical methods of analysis.

\* \* \*

George R. Kingsley, M.S., Chief Biochemist, Laboratory Service, Los Angeles Veterans Administration Center and Sidney Roberts, Ph.D., Assistant Clinical Professor of Physiological Chemistry and Acting Head of the department, University of California at Los Angeles, have for the past year been conducting weekly evening classes in Clinical Chemistry for Laboratory Technicians, an extension course of the University of California at Los Angeles.

**STATISTICAL METHODS FOR CHEMISTS**

By W.J. Youden. 126 pp. New York John Wiley & Sons. \$3.00

Knowledge of statistics is usually gained by word of mouth. The investigator who first looks for information, needs the assurance of another voice to say he is "doing it right" or the investigator tries to manage time from his daily duties to "take a course somewhere". There have been texts available. Homer Smith's *Plato and Clementine* is a delightful discussion of the meaning of the normal and the standard deviation, yet the size of "Herring boxes, without topes" does not quite tell the beginner what to do with a series of analytical data. Smith's discussion was not written with that purpose. Alan Trevor's "Random Sampling Distributions" presents in detail the derivation of the various formulae used in statistics, but the beginner is usually not quite sure as to what formula goes with which data, without the help of someone who has had previous training in statistics. Trevor's discussion is concerned with why the statistician does what he does and rightly objects to an approach limited to how statistical tests are made.

Dr. William J. Youden of the National Bureau of Standards has recently written *Statistical Methods for Chemists* as part of the series of Wiley Publications in Statistics. In degree of complexity this book is neatly placed midway between Smith and Trevor. It is quite an excellent text and can be followed easily by the beginner. It is oriented in particular to the problems of the analytical chemist. As Youden states in the preface, "The book is characterized by an absence of statistical theory and proofs". The use of formulae to substitute data therein is avoided almost entirely. Statistics is demonstrated by the use of example problems. These problems are preceded by a discussion of the purpose and application of degrees of freedom, comparison of standard deviations, the "t" test, etc. The topics covered are limited to those which commonly occur in the ordinary course of work.

There has been an acute need for a primer in statistics for those investi-

The National Executive Committee met at the Medical Arts Center Hospital in New York City on September 7, 1951. Those present included: John G. Reinhold, President; Albert E. Sobel, Vice-President; Max M. Friedman, National Secretary; Louis B. Dotti, National Treasurer; Marschelle H. Power, Harry Sobotka, Ellenmae Viergiver, Harold D. Appleton (by invitation) and Miriam Reiner (by invitation). Telegram messages were received from Executive Committee members Fritz Bischoff and George T. Lewis.

Membership and Treasurer's reports were made by Louis B. Dotti (previously published in *The CLINICAL CHEMIST*). Andre C. Kibrick and Jos Kahn were appointed to audit the financial statement.

Hugh J. McDonald, chairman of the Committee on Education, submitted a report for his Committee (published elsewhere in this issue).

Harold D. Appleton reported for the Editorial Committee and Miriam Reiner reported for the Committee on Methods.

Eliot F. Beach was proposed for appointment to the Editorial Committee for a period of one year, and Nelson F. Young was proposed as chairman of the Committee on Standards.

The pending legislation in Pennsylvania, House Bill No. 1205, was discussed at great length. The advantages as well as the shortcomings of the present bill were pointed out. The consensus of the Executive Committee was that despite the obvious shortcomings of the present bill, the clinical chemist would benefit from some of the advantages.

No communication has as yet been received from the American Board of Clinical Chemistry in response to a letter sent by the Association on February 7, 1951. In that letter the Board was requested to institute certain changes in its requirements for certification, as well as other amendments

gators dealing in measurements; a primer which would stand as a source of information independent of the word of mouth to answer questions. Youden's text fulfills this need.

*N. Y. U. Research Service*

*Eugene Y. Berger*

to the by-laws of the ABCC. Therefore the Executive Committee retains its present policy in recommending that the members of the Association refrain from applying for certification by the ABCC until further clarification.

It was voted that the fourth Stated Annual Meeting of the Association be held at the time of the ACS spring meetings, at Milwaukee, Wisc.

Respectfully submitted,

*Max M. Friedman, National Secretary*

**D. A. MacFADYEN ELECTED**

Douglas A. MacFadyen, M.D., Ph.D., President of the Chicago Section AACC, was elected to the Board of Trustees of the American Board of Pathology. Dr. MacFadyen is associated with Presbyterian Hospital, Chicago, and is well known for his work in biochemistry. He is Chairman of the Department of Biochemistry, Presbyterian Hospital and Professor of Biochemistry, University of Illinois.

Dr. MacFadyen is Associate Editor of the *Journal of Laboratory and Clinical Medicine* and was consultant for pathology and biochemistry to the Surgeon General, USA.

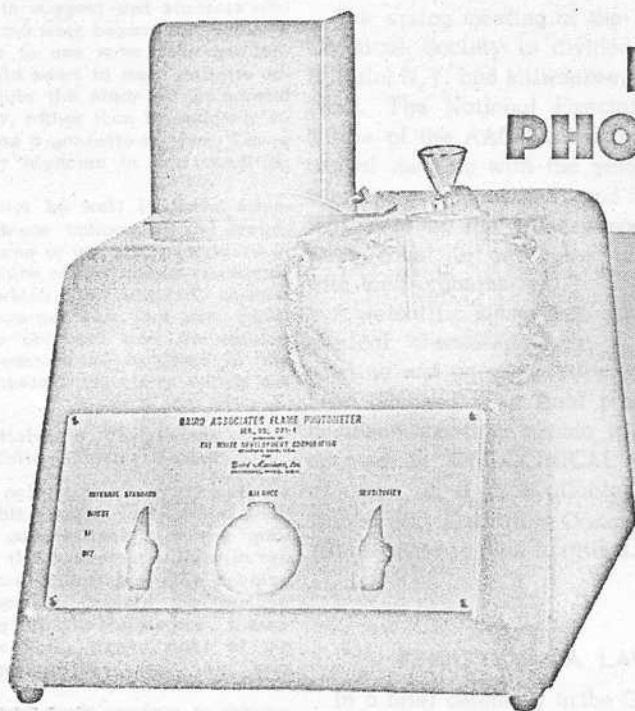
When the Chicago Section of the AACC was organized, Dr. MacFadyen was elected its first president, an office which he still holds.

**STANDARDIZATION OF THYMOL TURBIDITY MEASUREMENTS**

The Commission on Liver Disease of the Armed Forces Epidemiological Board has authorized a survey of representative laboratories to find the prevalent scales of values for thymol turbidity measurements. This was made by distributing samples of a colloidal pyrex glass suspension previously standardized by optical density measurements under controlled conditions. Standards were sent to laboratories from which papers had appeared dealing with the thymol turbidity test. Samples of the standard were also made available to those interested, at the recent AACC Meeting in New York. Thus, country wide distribution was accomplished. Participants were requested to measure the absorbance of the standard and to report the results in terms of the thymol turbidity units used in their laboratories.

Reports have been returned by nearly all who received samples of the standard. The results are now undergoing statistical analysis and will provide the basis for a recommendation by the Commission for a single standard. It is hoped that acceptance of such a recommendation will resolve the confusion now existing as a result of the use of several different units for thymol turbidity measurements.

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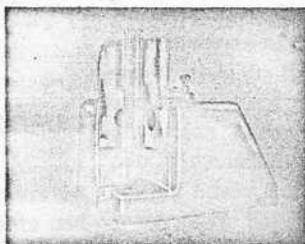
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(Continued from page 4)

by Dr. George T. Lewis  
Emory University

"The outline of an educational program in clinical chemistry was read with a great deal of interest. In general I am in hearty agreement with it. Would it not be wise when foreign languages are mentioned (paragraph 4) to suggest that students who are contemplating work beyond the master's must be able to use more than one language? It would seem to me a definite advantage to begin the study of the second language early, rather than to suddenly be faced with it as a graduate student. I have seen too many students in that condition in my office.

"Would it not be well to insert somewhere a sentence concerning the desirability of a course or at least experience in the theory and use of the various measuring instruments which the clinical chemist must use? I am not sure that such knowledge will be obtained from the routine courses in quantitative analysis or the courses in physical chemistry which are mentioned."

by Dr. Halvar N. Christensen  
Tufts College Medical School

"I believe only a small fraction of the hospitals in this country will be in a position to bid competitively for the good Ph. D., or for the competent M.D. with two additional years of training. The opening paragraph seems to deplore the termination of training with the M.S. degree. I suggest that the M.S., aimed right at the clinical responsibility, may be very realistic.

"The fifth paragraph appears to require a qualifying examination during the second or third semester of study, in addition to the examination in various courses. If this is correct the biochemistry Ph.D.'s of several prominent medical schools would not qualify at present, since only "preliminary" and "final" examinations are required.

"The rejection of methodology as a suitable area for the Ph.D. research problem seems unfortunate, considering that many of the mileposts in the history of clinical chemistry are in this area. The writer's intent, I think, is to deplore the trivial study and modification of existing methods which occupies much of our methodological literature."

### AAAS SYMPOSIUM

Harry Sobotka, Chemist to the Mount Sinai Hospital, New York, and past president of the AACC, will preside at a symposium on monomolecular layers at the Philadelphia meeting of the American Association for the Advancement of Science. This symposium, (Section C-Chemistry) will be held on Wednesday, December 26, 1-5 P.M.

Five review papers will be presented on methodological subjects and applications. Several of the papers will be of particular interest to clinical microchemists.

### STATED ANNUAL MEETING

The Stated Annual Meeting of the American Association of Clinical Chemists, Inc., will be held in conjunction with the American Chemical Society's 121st National Meeting. This meeting will be held in Milwaukee, Wisconsin, March 30 to April 3, 1952.

The spring meeting of the American Chemical Society is divided between Buffalo, N.Y. and Milwaukee, Wisc., for 1952. The National Executive Committee of the AACC voted to hold the annual meeting with the group in Milwaukee to help members and friends in that area of the country and on the west coast to get better acquainted with their organization.

A scientific symposium on a current clinical chemistry topic, a business meeting and an association dinner has been planned. The final program and business meeting agenda will be announced in **THE CLINICAL CHEMIST** as soon as it is available. The Officers and Executive Committee urge all members to plan to attend.

### PENNSYLVANIA LAW

In a brief ceremony in the Governor's Office, Harrisburg, Pa., Governor Fine of Pennsylvania signed House Bill 1205 for the regulation of clinical laboratories in that State. Representatives of the various interested groups were present.

This law, providing for the licensing of privately operated clinical laboratories, will go into effect January 1, 1952.

### ACS NEW YORK SECTION LECTURES

The New York Section of the ACS is planning to hold a series of ten spring lectures on "Recent Developments and Trends in Medicinal Chemistry".

The first lecture will take place on Wednesday evening, February 13, 1952 and will be held at the Engineering Societies Building, 29 West 39th Street, New York City. The nine subsequent lectures are scheduled for the following consecutive Wednesday evenings. The lecture announcements will be distributed to all ACS members residing in New York area as soon as the final program is ready.

Registration fee for the series is \$10.

### N.Y. TIMES EDITORIAL

The following is an editorial which appeared in the *New York Times*, November 5. The *Clinical Chemist* has received permission from that newspaper to republish the complete editorial for the information of our readers.

### DIAGNOSIS AT COST

Accurate diagnosis is the essence of good medical practice. Hospitals know it, for which reason laboratories staffed by well-trained men and women are under the same roof with beds and operating rooms. Indeed, without good laboratories the scientific practice of medicine is virtually impossible. Though physicians realize this they sometimes hesitate to send their patients to laboratories because of the expense involved. X-ray pictures may cost from \$10 to \$100, chemical analysis of body fluids from \$5 to \$50, a biopsy and a pathological report as much as \$100, depending on its scope. Several hundred dollars may thus be expended in diagnosing a puzzling case. Hence the inauguration of a diagnostic service by the Fanny Markel Medical Group, a non-profit organization which is sponsored by the Madison Foundation for Biochemical Research and which has been approved by the Comitia Minora of the Medical Society of the County of New York.

For \$75 the patient who is referred to the Group by his physician or consults it of his own accord receives all the diagnostic attention that his case needs. There are no "extras," not even for expensive X-rays or other special examinations of organs and tissues. A report goes to the patient's physician and to him alone. Thus armed, the physician knows exactly what therapeutic measures are to be taken. His patient saves time and money.

We have here an important experiment. Preventive medicine is preached by every conscientious physician. One reason why his insistence on periodic examinations and laboratory tests is not always heeded is the high cost of diagnosis. The Fanny Markel Medical Group seems to have indicated how the cost can be kept within bounds and the healing task of the physician simplified.

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## LOCAL SECTION NEWS

### New York Section

Dr. Warren M. Sperry, Biochemist at the Psychiatric Institute and Dr. David Adlersberg, Mount Sinai Hospital, New York City, were the guest speakers at the second meeting of the Metropolitan New York Section on October 30. The topic was "Some Observations On Cholesterol". The meeting was held in the auditorium of the New York Medical College.

Dr. Albert A. Sobel of the Jewish Hospital of Brooklyn, introduced the speakers.

Dr. Sperry introduced the subject by giving a history of the cholesterol procedure, for which he is so very well known. He told how the method was suggested by Dr. Schoenheimer when he visited him in his laboratory in Germany in the early 1930's. Dr. Schoenheimer suggested that a colorimetric reaction could possibly be worked out in addition to the reaction of cholesterol with digitonin.

Dr. Sperry did not recommend any specific method for cholesterol determination in the laboratory. He stated that methods and modifications should be tested with pure cholesterol and as investigations have shown that the ratio of cholesterol to esters in normal sera is a biological constant, the methods proposed for use should give this constant ratio with normal controls.

The reaction between digitonin and cholesterol has not been adequately explained, the speaker said. Chromatography has separated free and combined cholesterol and has given a ratio 65%-70%. The values for the digitonin precipitation gives values of 70%-76%. The determination should be done on serum. Whole blood determinations will give erroneous results, as digitonin will cause lysing of red cells. The red cells contain increased amounts of free cholesterol, which will alter the free-ester ratio. Plasma prepared from citrated or oxalated blood may change the cholesterol concentration due to osmotic effects.

"What good is a cholesterol determination after you get it" is a question that clinical chemists can explain", Dr. Sperry stated. "They can explain what a particular determination may mean." The free-ester ratio may de-

viate from normal in any type of liver damage and in acute infections in children. In children this ratio may even be altered in patients with an acute cold. In hepatitis the esters may disappear entirely.

Dr. Sperry explained that there is a wide variation in the normal total cholesterol value in healthy subjects. This may be as high as 200% variation. Cases have been noted of apparently healthy individuals having rather high levels, 500mg %. Abnormalities for a given individual have to be related to that person's normal constitutional level. Normally there is very little change in an individual's level.

The average cholesterol concentration slowly increases with age to a high at the 50-55 year. Then this level decreases. This was noted by Dr. Ancel Keyes, and confirmed by Dr. Sperry's experiments.

Dr. Adlersberg of Mount Sinai Hospital, discussed some of the clinical aspects of cholesterol determinations. He also noted the fact that one particular cholesterol determination in a given individual does not give any information. "The results do not have the immediate clinical value in comparison to the blood sugar".

The altered ratio can be observed in liver damage. Abnormalities occur in xanthomatoses with their familiar skin lesions. In premature arteriosclerosis one can find entire families with abnormal cholesterol values. These patients die young, 34-43 years of age.

This familial anomaly has been found to be an incomplete dominant trait, genetically. Dr. Adlersberg has made 122 observations on this type of coronary disease. One third had all members of the family with high cholesterol values. Arteriosclerosis of young people is another disturbance that acts the same way, and may be explained by a disturbed lipid metabolism.

In studying hypercholesterolemia clinically, Dr. Adlersberg has records of more than 500 families, in which three members or more show abnormality. This is a higher incidence than diabetes and is observed to a larger extent among the Hebrew population.

An open discussion with audience participation followed the speakers. Dr. Israel S. Kleiner, Chairman of the

New York Section, presided at the meeting.

### Chicago Section

The Chicago Section of the AACC has not as yet held an official meeting for the 1951-1952 academic year. An interesting scientific program is planned for the very near future.

On October 23, Harry F. Weisberg, Division of Clinical Chemistry, Mount Sinai Hospital, Chicago, discussed "Diabetes—What You Can Do About It", before the Mount Sinai Public Health Forum. This was part of the preparation for Diabetes Detection Week, Nov. 11-17. Dr. Weisberg is a Contributing Editor to **THE CLINICAL CHEMIST**.

### Philadelphia Section

The first meeting of the Philadelphia Section for the 1951-1952 season was held Thursday evening October 25, at the Lankenau Hospital.

Dr. John G. Reinhold, Pepper Laboratory, University of Pennsylvania, addressed the meeting on "Standardization of Turbidity Measurements with Special Reference to Thymol Turbidity".

Dr. Reinhold described the present activities of the Commission on Liver Disease of the Armed Forces Epidemiological Board. This Board has authorized a survey to determine the prevalent scales of values used for thymol turbidity measurements. They have prepared a standardized colloidal pyrex glass suspension to be used as a standard for turbidity measurements.

A short business meeting followed.

The November meeting will be held November 29, at which time Dr. Alpers will speak on Lipases.

### Boston Section

The Boston Section of the American Association of Clinical Chemists held its first meeting of the 1951-1952 season on October 24, 1951, at the New England Center Hospital.

The meeting was preceded by the election of officers for the ensuing year. Harry Ziskind of the Norwood Clinical Laboratory was elected Chairman, to succeed Joseph Benotti. Joane Boddie was elected Vice-Chairman to succeed Helen Connors, and Esther Thomas was re-elected to the office of Secretary-Treasurer.



**Boston Section (Continued)**

Harold Reinstein has been appointed by the new Chairman to succeed Ilona D. Lesnyak as Contributing Editor to **THE CLINICAL CHEMIST** and Joseph Benotti has been appointed Program Chairman.

The speaker of the evening was Mr. B.C. Wiggin of the Baird Associates, who spoke and demonstrated a new flame photometer recently put on the market by that company. He gave a very interesting historical discussion of the development of flame photometry and discussed the several on the market at present. He brought out the advantages and disadvantages of the electrical and optical systems of the various models.

He discussed the new Baird Flame Photometer in some detail, including the electrical system and explained why the Baird instrument was designed and engineered to overcome certain inherent features of this type instrument.

Following the discussion, the audience visited the Chemistry Laboratory of the hospital where the instrument was demonstrated. The group in general was very much interested in seeing this instrument perform. Everyone present had an opportunity to operate the instrument with standard solutions.

Robert R. Commons, M.D., Instructor in Medicine, University of Southern California Medical School, was guest speaker before the local section on September 18 at the Cedars of Lebanon Hospital, Los Angeles. Dr. Commons discussed "Fluid and Electrolyte Balance", a field in which he is actively engaged and has written several recent papers.

Max S. Dunn, Ph.D., Professor of Chemistry, University of California at Los Angeles, was guest speaker on October 2 at the Los Angeles Veterans Administration Center. A well-known authority on the subject of amino acids, Dr. Dunn spoke on "Amino Acids in Clinical Medicine", including analysis by microbiological and chromatographic methods and by automatic instrumentation. Dr. Dunn prefaced his address with several remarks encouraging and commending the objectives of the AACC.

Suitable abstracts of these addresses should appear in future issues.

The local section is now conducting an interlaboratory comparison of analytical results under the direction of a special committee: Richard J. Henry, M.D., Chairman, Harry Sobel, Ph.D., and Maxine Wertman. Aliquots of pooled sera have been furnished to approximately 16 local laboratories, with which the local membership is affiliated, for determinations of sodium, potas-

sium, calcium, total protein, albumin globulin ratio and cholesterol.

Now that the new California Clinical Laboratory Act has been passed and becomes effective January 1, 1952, new Regulations under the act must be prepared by the California Public Health Commission. An advisory committee is now conducting hearings on this matter, preliminary to submitting its recommendations to the commission.

The local section, pursuing its established policy, intends to make its voice heard at the present hearings through its legislative committee: Merle L. Lewis, Ph.D., Chairman, Lucian A. Bavetta, Ph.D. and Sam Berkman, Ph.D. The local membership seeks particularly to implement Section 1264 of the act, which section provides for special licensure in a particular field or specialty of clinical laboratory practice. At a meeting November 6, the membership voted the following recommendations:

1. The prerequisite for special technician licensure should include a bachelor's degree and one year of experience in the specialty.

2. Definite provision should be made for special licensure on the technologist (laboratory director) level.

3. Provision for special technologist licensure in Biochemistry should be made at this time, the prerequisites for which should include the M.S. plus three years experience or the Ph.D. plus two years experience in appropriate chemical work.

To support these activities, the members present at the October 2 meeting unanimously proposed a special assessment of five dollars per year on each member (effective immediately on present members, effective in July on new members). A letter vote on this proposal is proceeding.

### LETTERS FROM MEMBERS (Continued from page 3)

ed clinical methods, (3) Careful control analysis of accurately analyzed pooled serum samples or recovery studies.

By the way, what happened to the Committee for Analytical Methods? The American Association of Clinical Chemists had better get started or else they will have missed the bus.

BERNARD KLEIN Ph.D.

## NATIONAL AND LOCAL SECTION OFFICERS

### NATIONAL OFFICERS

President—John G. Reinhold, Pepper Laboratory of Clinical Medicine, University of Pennsylvania Hospital, Philadelphia, Pa.  
 Vice-President—Albert E. Sobel, The Jewish Hospital of Brooklyn, Brooklyn 16, N.Y.  
 Secretary—Max M. Friedman, Chemistry Dept., Queens General Hospital, Jamaica 2, N.Y.  
 Treasurer—Louis B. Dotti, Chemistry Dept., St. Luke's Hospital, New York 25, N.Y.

### BOSTON SECTION

Chairman—Harry Ziskind, Norwood Clinical Laboratory, 881 Washington St., Norwood, Mass.  
 Secretary-Treasurer—Esther Thomas, 143 Court Road, Winthrop, 52, Mass.

### CALIFORNIA SECTION

Chairman—Arnold G. Ware, Los Angeles County Hospital, Los Angeles, Calif.  
 Secretary-Treasurer—Kenneth D. Johnson, 4816 Ocean View Blvd. Montrose, Calif.

### CHICAGO SECTION

Chairman—Douglas A. MacFadyen, Presbyterian Hospital, Chicago 12, Ill.  
 Secretary—Saul Roseman, Bobs Robert Memorial Hospital, Chicago 37, Ill.

### NEW YORK SECTION

Chairman—Israel S. Kleiner, New York Medical College, New York 29, N.Y.  
 Secretary—Isidore Gubernick, 139-19 34th Road, Flushing, N.Y.

### PHILADELPHIA SECTION

Chairman—William R. Brown, Hahnemann Hospital, 230 N. Broad St. Philadelphia, Pa.  
 Secretary Treasurer—Cecilia Riegel, Chemistry Department, Lankenau Hospital, Philadelphia, Pa.

## NEW FLAME PHOTOMETER

Baird Associates is entering the flame photometer field with an instrument designed by Dr. John U. White of the White Development Company. It is primarily intended for the analysis of sodium and potassium although calcium and lithium can be determined as well. While principal applications will be in the analysis of biological fluids in medical laboratories, it should also prove useful in agriculture, food petroleum, cement testing, and in biological and university laboratories.



Simplicity and precision, said to be 0.5%, are outstanding features of this instrument. In addition, a completely sealed flame system, using compressed air, eliminates contamination from tobacco smoke or soap powder in the laboratory. Another important feature is that the optical system and photo-cells are free of thermal problems, because the flame system is external. Laboratory gas and compressed air are the only utilities required in setting up this instrument and untrained personnel can be trained to use it very quickly.

The analyst using this flame photometer will have very little trouble with mixed samples; the reading of Na as K or vice versa. The use of Multilayer interference filters for the internal standard (9 mu narrow band) reduces the amount of lithium being read as K or Na to a factor of 1 in 3000 or more. Special filters are available for mixed calcium-sodium samples.

Drifting of the instrument caused by thermal effects on the photocells or by electronic circuits is completely eliminated. There are no electronic circuits, and the flame, while located on the frame-work of the instrument, is completely outside the instrument and the heat is entirely blocked by reflective shielding between the flame and the instrument and by low infrared transmission of the optics. The housing of the instrument itself, immediately adjacent to the flame, never loses its chill-metal feeling even after protracted operation.

Maintenance of the instrument is exceedingly simple and is completely handled by the user. Similarly, the simple control system has obvious advantages for the unskilled user.

Price, approximately \$750 including galvanometer and all pressure regulators and other auxiliary equipment; delivery six months. Orders may be placed at this time to assure preference of delivery. Defense Orders, especially DO 97 or M-71, are applicable and will facilitate delivery.

As we approach the third anniversary of our founding on December 15, 1948 it might be of interest to note the distribution of our membership amongst the various States. Below is a listing as of October 15th of the fourteen most represented States and the per cent of the total membership in each.

	Members	per cent
New York	105	25.9
Massachusetts	41	10.1
Pennsylvania	40	9.9
Illinois	39	9.6
California	35	8.6
New Jersey	13	3.2
Iowa	11	2.7
Ohio	11	2.7
Michigan	10	2.5
Missouri	10	2.5
Connecticut	8	2.0
Maryland	8	2.0
Texas	8	2.0
Wisconsin	8	2.0

The remaining membership is distributed in 24 other States, the District of Columbia, Hawaii, Porto Rico, Canada, Brazil, Great Britain, and the Netherlands.

The reader may further take these computations and arrive at various conclusions. He may wonder why such populous States as Colorado, Minnesota, Nebraska, Oregon, and others, are not better represented. He may wonder why the first five States on this list comprise almost two-thirds of the total membership, a ratio certainly out of proportion in terms of population of these States.

The answers to some of the above questions are quite apparent. The five largest States, in terms of membership, are also those that contain local sections. There are likewise large metropolitan areas in other States, such as Cleveland, Detroit, Minneapolis, St. Paul, New Orleans, St. Louis, Denver, to mention but a few. In the less populous areas local sections may be formed on a wider geographical basis. Article XI of the constitution states that "Local sections of this Association may be formed subject to the approval of the Executive Committee by ten or more voting members in good standing residing in a geographical area, but any metropolitan area shall constitute but one geographical local section."

Membership in the Association becomes more valuable to an individual if at the same time he is also permitted

**NEW MEMBERS ELECTED BY  
THE EXECUTIVE COMMITTEE**  
Sept. 14 - Nov. 15, 1951

Esther E. Jenkins	Mansfield, Ohio
Frances Krasnow	New York, N.Y.
Gene Hays Parker, Lt. USAF	Las Vegas, Nev.
Maxine Wertman	Alhambra, Calif.
Leola Westover	Los Angeles, Calif.

**MEMBERS PARTICIPATE IN  
PATHOLOGY MEETING**

Dr. Clarence Cohn, Michael Reese Hospital, Chicago and Vice-President of the Chicago Section AACC participated in the symposium on Azotemia at the recent meeting of the American Society of Clinical Pathologists, held October 16-19. Dr. Cohn also served as discussion leader at a luncheon conference on Flame Photometry.

Dr. Carroll F. Shukers, University of Arkansas, Little Rock, Ark., presented a paper, "Clinical Laboratory Methods for Serum Sodium and Potassium," at the same meeting.

**CHEMICAL INDUSTRIES EXPOSITION**

The 23rd Chemical Industries Exposition was held November 26 to December 1 at the Grand Central Palace, New York City.

More than 400 companies dealing in scientific apparatus and processing equipment were represented. Of interest to clinical chemists, were the newly designed instruments for laboratory precision, flame photometers, pH meters, electrical and optical testing instruments, as well as laboratory reagents and precision glassware.

the opportunity to participate in the activities of a local section. The scientific advantages in exchange of ideas and symposia programs are but a few of the benefits to be received. The professional advancement of clinical chemistry would also benefit from the programs of local sections. We need only suggest the possibilities in this direction from the point of view of legislation. The Executive Committee, in its desire to encourage local sections, has provided for a partial rebate of the annual dues for each member of the section.

Max M. Friedman, National Secretary

of

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