The CLINICAL Chemist

NEWSLETTER OF THE AMERICAN ASSOCIATION OF CLINICAL CHEMISTS, INC.

VOLUME 4, NUMBER 1. JANUARY 1952

NOMINATING COMMITTEE SUBMITS CANDIDATES

The Nominating Committee, consisting of Joseph Benotti, Louis B. Dotti, Max M. Friedman, Samuel Natelson, Miriam Reiner, Harry Sobotka, and Warren M. Sperry met in New York on November 11, 1951 and proposed the following slate of officers for the National Executive Committee to serve from July 1, 1952 to June 30, 1953.

President: Albert E. Sobel— New York, N.Y.
Vice-President: Hugh J. McDonald— Chicago, Ill.
National Secretary: Max M. Friedman— Queens, N.Y.
National Treasurer: Louis B. Dotti— New York, N.Y.

Members: Arthur Knudson— Albany, N.Y.
Marschelle H. Power Rochester, Minn.
John G. Reinhold— Philadelphia, Pa.
Harry Sobotka— New York, N.Y.
Arnold G. Ware— Los Angeles, Calif.

The procedure for elections is determined by Article IX of the Constitution: "The Nominating Committee shall deliver to the secretary of this Association a list of persons nominated by them for election as officers and members of the Executive Committee not later than sixty days before the Stated Annual Meeting of this Association.

"The Secretary shall mail a letter ballot listing the nominees of the Nominating Committee to the voting members not later than 45 days before the stated Annual Meeting, such letters ballot including a notice that the names of persons other than the nominees may be written in. All ballots received up to but not later than fifteen days before the Stated Annual Meeting shall be counted."

All members in good standing as of January 1, 1952 are eligible to vote. The name of any member of the Association may be substituted for any or all of the names on the enclosed ballot by using the blank lines available under each proposed name. In addition, seven new members of a Nominating Committee are to be elected from among the membership to serve from January 1, 1952 to December 31, 1952.

All ballots must be returned by March 18, 1952 to be counted.

Biographical sketches of the proposed officers and Executive Committee will be found on page 4.

DR. KNUDSON IN SIAM

Dr. Arthur Knudson, Associate Dean and Professor of Biochemistry at Albany Medical College, has been granted a year's leave of absence to teach in the two medical schools at Bangkok Thailand (Siam), it was announced by Dean R. S. Cunningham of Albany Medical College.

Dr. Knudson's Bangkok assignment was the result of his earlier appointment as a Visiting Professor to the Washington University School of Medicine Faculty. In conjunction with the United States Economic Co-operation Administration, Washington University has developed a reciprocal teaching program between the Faculties of its School of Medicine and those of the two medical schools at Thailand.

Dr. and Mrs. Knudson left for Bangkok on June 25.

N.Y. ACADEMY OF SCIENCE

The New York Academy of Science appointed 99 new fellows from among its 6536 members. Forty-three of these newly appointed fellows, singled out for recognition of outstanding scientific achievements, were chemists and chemical engineers.

Dr. Otto Schales, Ochsner Clinic, New Orleans, La. member of the AACC, was in this group. Dr. Schales is Secretary-Treasurer of the Division of Biological Chemistry of the American Chemical Society.

COMPLETE STUDY URGED ON BOARD CERTIFICATION

The following is a chronological record of events and correspondence between the American Board of Clinical Chemistry and the American Association of Clinical Chemists, Inc. The publication of this record has been ordered by a resolution of the National Executive Committee of the AACC for the complete information of the membership.

1948 DECEMBER 15, American Association of Clinical Chemists founded.

1949 APRIL 19, American Association of Clinical Chemists incorporated in the State of New York.

1950 APRIL 12, Dr. W.E. Harrisson addressed the Association Annual Dinner-Meeting at Philadelphia, Pa., as Secretary of the Board of Clinical Chemistry.

APRIL 18, American Board of Clinical Chemistry incorporated in the State of Delaware.

DECEMBER 18, CHEMICAL AND ENGINEERING NEWS published the news release of the formation of the ABCC together with the by-laws concerning the qualifications for certification.

1951 JANUARY, The Certificate of Incorporation of the ABCC was transmitted to the Executive Committee of the American Association of Clinical Chemists. These papers together with the by-laws were published in THE CLINICAL CHEMIST, Vol. 3 No. 1. The editorial statement made at that time invited comments from the membership.

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The CLINICAL Chemist

Newsletter of the American Association of Clinical Chemists, Inc.

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

VOL. 4, NO. 1 JANUARY 1952

DR. JOS KAHN

The Editorial Board and Editorial Advisory Board extends its heartfelt sympathy to the bereaved family of Dr. Jos Kahn, one of its members. The AACC has lost not only an outstanding scientist, but also a kind and gentle man who gave unstintingly of his time and efforts to further the dignity and advance the status of all clinical chemists.

In writing the history of our profession and Association, the memory of Dr. Jos Kahn, Clinical Chemist, will rightfully assume its honored place.

OUR RECORD

We are a scientific organization. Our record, going into the fourth year, shows that we have advanced the scientific status of clinical chemistry.

We are a professional organization. Our activities, through our National Committee on Legislation and Local Section committees, contributed to the establishment of professional status to qualified non-medical scientists. These activities are only motivated in the public interest. Our personal interests lie only along these lines.

Contrary to what some misinformed individuals may think, we are not a pressure group. We would like to see harmonious relations established between the medical and non-medical scientists. We hope that our Association may be an instrument for this harmony.

We are a democratic organization, comprising, we believe, through the efforts of this newsletter, one of the best informed organization memberships.

Members are urged to study the complete correspondence between the American Board of Clinical Chemistry and our Association. All the facts are published in this issue.

ANNOUNCEMENT BY THE EXECUTIVE COMMITTEE

The Executive Committee of the American Association of Clinical Chemists, Inc., has reviewed the statement of the American Board of Clinical Chemistry published in this issue, explaining its principles and objectives. The statement together with the Board's action in making several changes in its By-Laws, disposes of some doubts and questions concerning its requirements for certification and other matters. It also demonstrates that the Board is aware of its responsibilities for the development of clinical chemistry as a profession.

The Executive Committee therefore recinds its previous advice not to apply for certification and urges all clinical chemists to carefully study the exchange of statements printed in this issue. It is suggested that members form their own opinion on certification and act accordingly.

STATED ANNUAL MEETING

Dr. Saul Roseman, Bobs Robert Memorial Hospital, Chicago, Ill., is arranging a program of scientific papers on clinical chemistry to be given as the scientific session of the Stated Annual Meeting. The scientific session will be held jointly with the Division of Biological Chemistry of the American Chemical Society on April 3.

Dr. Margaret M. Kaser, Veterans Administration Center, Wood, Wisc., heads a committee which is making the arrangements for the Annual Dinner, Stated Annual Meeting and other Association activities.

The Stated Annual Meeting will be held in conjunction with the American Chemical Society's 121st Meeting, at Milwaukee, Wisc.

BOX 123

Letters From Members

Dear Sir:

I quite agree with the theme of the editorial published in November and I think it is very well expressed. However, I think that it represents only one facet of the entire picture.

The cost of medical care at present puts it beyond the reach of the average member of the middle class. The employment of trained chemists in hospital laboratories will add more fuel to the flames. The final criterion should be benefit to the public (Dean A. Clark, M.D., New England Journal of Medicine, Nov. 1, 1951, p. 671). On the other hand, hospital administrators are by no means blameless. Most of them will admit that the laboratory makes a profit and that this money is used to reduce deficits elsewhere in the hospital. This gives the public a false impression of laboratory costs. If the laboratory could stand on its own feet, it could employ better trained people with only its current revenue.

I spent an entire month last summer visiting laboratories throughout the state of Florida and some of those problems were repeatedly brought home to me very vividly. I think your argument applies very directly to the larger hospitals but the solution for the smaller installations is not so clear. One suggestion received during the summer from a pathologist, would establish central laboratories in each community to which would automatically be sent all lab work except for the barest routine. This central lab could then afford to employ professionally trained chemists, bacteriologists, etc.

This is not to be taken as in any way a criticism of the argument for the employment of more and better trained clinical chemists. However, I feel that we will be better received if at the same time we show some appreciation of other phases of the problem and what we think can be done aobut it.

Miami, Fla. George T. Lewis, Ph.D.

QUIDNUNCS

WILLIAM H. GOLDWATER, formerly Assistant Professor of Biochemistry and Medicine, Tulane University Medical School, New Orleans, La., is now associated with the U.S. Naval Radiological Defense Laboratory, San Francisco, Calif.

THOMAS H. CONNOR was appointed Clinical Chemist at St. Joseph's Hospital, Providence, R.I.

THE SECRETARY REPORTS

With this issue of the newsletter the membership will receive a directory with the list of members as of January 1, 1952 and a ballot for the annual election of the Executive Committee and the Nominating Committee.

Perhaps the following notes may be of assistance to those who may not be clear as to the procedure in the election of national officers. According to Article V of the Constitution "A Nominating Committee of seven, at least five of whom shall be full members of the Association, shall be elected to hold office for one year." This Nominating Committee is elected by the membership in a manner specified in Article IX. "The Secretary shall, not later than sixty days before the Stated Annual Meeting, mail to each voting member in good standing a list of all the voting members in good standing and the names of the institutions with which they are affiliated, together with a letter ballot on which the voting members may designate their choice for election to the Nominating Committee .....and the seven persons receiving the greatest number of votes shall constitute the Nominating Committee."

The Nominating Committee therefore receives a direct mandate from the membership to propose a slate of officers and members of the Executive Committee. After the personnel of the Nominating Committee is announced the members have at least six months in which to direct to this group their recommendations. And after the Nominating Committee proposes its slate, the voting member further enjoys the privilege of writing in the name of any other member as his choice.

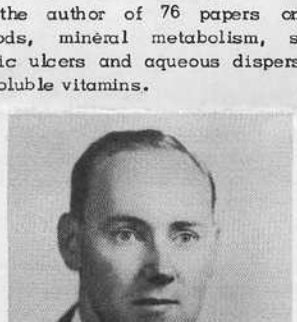
This electoral process may appear cumbersome, but the end-result is an Executive Committee that has been selected by the choice of the membership. In each past election of the Association more than 60 per cent of the members have returned their ballots. Although a much greater percentage vote would be desirable, yet it must be reluctantly admitted that for a scientific society that conducts its ballot by mail a 60 per cent vote may be considered a good response.

Max M. Friedman, National Secretary

Biographical Sketches of Proposed New Officers

PRESIDENT

ALBERT E. SOBEL, Head of the Department of Biochemistry of the Jewish Hospital of Brooklyn is also Adjunct Professor of Chemistry at the Polytechnic Institute of Brooklyn. he was born in Luko, Hungary on September 24, 1906. He holds the degrees of Bachelor of Science (1930) and Chemical Engineer (1935) from Cooper Union. He was awarded a Masters degree from Columbia University in 1936 and received his doctorate from the Polytechnic Institute of Brooklyn in 1940. He is the author of 76 papers on micro methods, mineral metabolism, sterols, gastric ulcers and aqueous dispersion of fat-soluble vitamins.



VICE-PRESIDENT

HUGH J. MCDONALD. Born, Glen Nevis, Ontario, Canada, July 27, 1913; Queen's University, 1930-1932; B.Sc. in Chemistry (with highest honors), McGill University, 1935; M.S., Carnegie Institute of Technology, 1936; D.Sc., 1939. Major work for doctorate in physical chemistry, with minors in organic chemistry, physiological chemistry and physics.

Research fellow, teaching assistant and part time instructor, Carnegie, 1936-1939; instructor in chemistry, Illinois Institute of Technology, 1939-1941; Assistant Professor, 1941-1943; Associate Professor, 1943-1946; Professor, 1946-1948; Professor and Chairman, Department of Biochemistry, Stritch School of Medicine of Loyola University, Chicago, since 1948. Consultant, Argonne National Laboratory, since 1946. Manhattan Project, Columbia University, 1943. Awarded competitive scholarship, Royal Institution for Advancement of Learning, 1933-1934. Sigma Xi research award, 1944; research award, American Academy Arts and Sciences, 1945.

Fellow, A.A.A.S., 1946; Member, American Chemical Society; American Association Clinical Chemists (Chairman, Committee on Education); Electrochemical Society; American Association University Professors; Sigma Xi; Phi Lambda Upsilon; Alpha Chi Sigma, Chaos Club (Chicago).

SECRETARY

MAX M. FRIEDMAN, Senior Chemist at Queens General Hospital, New York, Consultant Chemist at Lebanon Hospital. He was born in Austria on January 24, 1907 and completed his undergraduate work at the University of Alabama in 1930. After also studying at Columbia and New York University he was awarded his Doctorate by the Polytechnic Institute of Brooklyn in 1947. His main scientific interest is body water or, more specifically, extracellular fluids. His research for the past several years has been divided between body fluids and nucleic acid in normal and pathological tissues.

TREASURER

LOUIS BASIL DOTTI is Chemist at St. Luke's Hospital in New York City and Lecturer in Physiology and Biochemistry at the New York Medical College. He was born in New York City on August 13, 1903, and graduated from Columbia University in 1929. He also did his post-graduate work at Columbia, receiving his M.A. in 1931 and his Ph.D. in 1936. He has worked extensively on carbohydrate and calcium metabolism, digestive enzymes and liver function tests.

MEMBERS OF THE EXECUTIVE COMMITTEE

JOHN GUNTHER REINHOLD, Associate in Charge of Chemistry at the William Pepper Laboratory of Clinical Medicine of the University of Pennsylvania Hospital, also holds the rank of Assistant Professor of Physiological Chemistry at the Graduate School of Medicine of the University of Pennsylvania. Born in Milwaukee, Wis., on October 29, 1900, he graduated from the University of Wisconsin in 1924 and received his M.S. degree at Yale in 1926, In 1933 he was awarded a doctorate in physiological chemistry from the University of Pennsylvania. During the war he served as chemical consultant to the Commission on Liver Diseases of the Army Epidemiological Board.

HARRY SOBOTKA is Head of the Department of Chemistry at Mt. Sinai Hospital, New York City. He was born in Vienna, Austria, on August 4, 1899, and after studying at the University of Vienna received his Ph.D. from the University of Munich. He did post-doctorate research at the University of Munich and microbiological studies in Copenhagen. In addition to numerous research papers, reviews, articles and text-book chapters in the fields of clinical chemistry, enzymes, organic chemistry and colloid phenomena, he is the author of two books on steroids and on bile.

MARSCHELLE H. POWER is Professor of Physiological Chemistry in the Mayo Foundation, Graduate School, University of Minnesota, and Head of the Division of Biochemistry at the Mayo Clinic. He was born in Edgar, Nebraska, September 1, 1894, and graduated from the University of Nebraska in 1917. He received his Ph.D. degree in organic chemistry from the University in 1923. His publications have included papers relating to the nature of the blood sugar as studied by means of in vivo dialysis, carbohydrate metabolism, hyperinsulinism, renal function, acid-base equilibrium in the blood, metabolic abnormalities in Addison's disease and in Cushing's syndrome, the use of radioactive iodine in the study of the thyroid gland and the metabolic effects in man of administration of adrenocorticotrophic hormone and of various steroid hormones of the adrenal cortex.

ARTHUR KNUDSON. Associate Dean and Professor of Biochemistry at Albany Medical College, Albany, N.Y. Dr. Knudson was born in Milwaukee, Wisc., August 13,

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American Board of Clinical Chemistry's Program

The American Board of Clinical Chemistry, Inc., came into being after long and thoughtful study of the professional problems of the clinical chemist by the Committee on Clinical Chemistry of the American Chemical Society and the American Society of Biological Chemists, Incorporated *(Chemical and Engineering News, 28, 4446, December 18, 1950).* It was logical and proper that these two organizations and the American Institute of Chemists long established professional societies which have been active for years in raising the standards of chemistry and developing the professional status of the chemist and which include among their membership essentially all chemists in the country, should take the initiative in the organization of such a certifying board. There is a history of more than twenty-five years of efforts by these organizations, through conferences and negotiations with the other professional groups concerned in the operation of the clinical laboratory, to obtain for the clinical chemist the status necessary for his professional development and for the best use of chemistry in the care of the patient. Two articles one by Victor C. Myers ("Some Problems of Clinical Chemistry," *Chemical and Engineering News, 24,* 2615, October 10, 1946) and one by Warren M. Sperry ("The Professional Status of Clinical Chemistry," *Chemical and Engineering News, 28,* 159, January 16, 1950), summarize the status and problems in this field, recount the history of the efforts to improve the standards of clinical chemistry and the status of the clinical chemist. The judgment of the Committee that the organization of such a board would involve many problems that would require time to straighten out proved to be correct. However, the Board is now organized ("Board of Clinical Chemists Open for Business, *"Chemical and Engineering News, 28,* 4446, December 18, 1950) and although there are still problems, there are no basic reasons to feel they can not be solved with time, understanding and patience. The Board asks all those interested to join in making this development as sound and as rapid as possible.

The Board is analogous in purpose and function to the various medical specialty boards which have served for many years to establish standards and qualifications for persons wishing to practice in a specialized field in medicine *(Directory of Medical Specialists,* The A. N. Marquis Company, Chicago). The aim of the Board is to establish and improve a standard of competence for those who practice clinical chemistry in the interest of the public and the development of the science, and to certify as specialists those who voluntarily comply with the requirements of the Board. The action of the Board is based upon the candidate's ethical and professional record, training, experience and attainment, as well as results of a formal examination. While the Articles of Incorporation permit the Board to engage in activities, in addition to certification, in the interest of clinical chemistry, the Board feels that its principal function should be certification and that it should not promote any activity which might prejudice this function.

The Board is founded on the following basic principles which the Board and the sponsoring societies believe are necessary for maintenance of its competence, integrity and sound development:

1. The Board should be an independent organization, free from pressures of any kind from its founding societies or any other organization, group or individual.

2. The structure of the Board should be subject to change to meet new problems and situations, but by a process of due thought, deliberation and substantial agreement.

3. Membership of the Board should be balanced so as to include those persons experienced in the various aspects of the field.

4. While qualifications for certification should be as clearly stated as possible, interpretation and judgment by the Board are necessary for workability.

5. Standards for certification should be set as high as feasible under the present circumstances and raised as conditions permit.

The original members of the Board were necessarily selected by the sponsoring societies. Thereafter, they are to be elected by the Board from lists of nominees requested of these societies and others. After nomination and election the individual serves only as a member of the Board and not as a representative of the society which nominated him. There would be no surer way of undermining confidence in such a board than by having it develop into an organization of competing groups. The Board must be of a judicial, rather than of a legislative character. Tenure is limited to five years to provide for turnover of members of the Board, and provisions have been made by which new or additional members may be elected from nominees requested from other than the sponsoring societies and from at-large. The Board is cognizant of the importance of maintaining balance in the experience and location of its members, and elections from others than the founding societies can be expected as the Board develops.

The requirements for certification as listed in the Bylaws are guiding principles under which the Board functions. Experience has shown that it is practically impossible to state such matters in enough detail to cover all situations which arise or to convey the same meaning to all persons. One of the principal functions of a board is the administration of the principles under which it functions to practical situations not easily foreseen in detail. For this reason it is necessary that the Board be free from pressure and bias and be of the highest integrity.

If the standards of the Board are placed too high the group of Certified Clinical Chemists becomes an honor society and the Board fails in its function just as surely as it fails if it certifies those who are obviously incompetent. The Board has tried to set its present standards at a reasonably workable level. With time it will be possible and even imperative to raise this level. Experience has shown that in the beginning it is necessary in order to avoid unjust action, to certify certain candidates on the basis of their experience in the field in lieu of formal advanced training. It should be made clear that while the Board will undoubtedly make some errors in judgment, its purpose is to certify as to competence in the field of clinical chemistry, and that both competence and activities in the field will be required of candidates.

The Board recognizes the difficulties of stating an exact and unequivocal definition of a clinical chemist, but believes it must consider for certification those who are expert in the understanding and performance of chemical methods as an aid in evaluting the state of health, and in the diagnosis, prognosis and study of disease. The clinical chemist may work in a hospital laboratory, a teaching institution, a private laboratory, a public health laboratory, or a laboratory of pathological chemistry or toxicology. The kind of skills required, the responsibilities involved and the professional problems arising are similar in all these situations and are those in which the Board is interested. It is, therefore, necessary that the membership of the Board be such as to provide experience and judgment in dealing with applications for certification from whomever they may come in this wide group.

Every effort will be made by the Board to co-operate with the specialty boards of other professions which function in the clinical laboratory. This is most necessary for the best service of chemistry to medicine. However, this relationship must be not on the basis of competition between academic degrees and the like, but must be guided by mutual respect for competence and responsibilities in the respective fields, and, above all, by co-operative endeavor of each to contribute the best in the service of a common goal.

Theoretically, certification should im-

(Continued on page 6)

JOS KAHN
(1900-1951)

Long before Jos Kahn's life had run its full course, an unfathomable destiny removed him from his wife and sons, one of whom he has named after the famous French scientist Claude Bernard, from his mother and from his friends and colleagues.

We remember when he landed here in 1930 upon an invitation to join the research staff of the Department of Chemistry at the Mount Sinai Hospital on a Hernsheim Fellowship. He had been highly recommended by an assistant of Professor Richard Willstaetter. In the course of his doctor's thesis at the University of Munich, he had as a student made some ingenious contributions to the chemistry of cancer. He proved to be a most fertile scientist and started a series of valuable contributions and publications in several fields of biochemistry.

Like not too many others – perhaps because of his personal observations during the occupation of Belgium by the Germans during the first world war – he had foreseen in time what was brewing in Germany and decided to settle here. Soon an opportunity arose for an independent job of permanent nature as Chief Chemist of Beth Moses Hospital which later became part of Maimonides Hospital of which he became the Chief Chemist. The position, which he held for twenty years enabled him to marry and to found a family.

The stormy times on the 30s and 40s left their mark on all of us. The quiet of the scientific laboratory was disturbed by the moral and the material repercussions and tribulations of these times. A kind-hearted and sensitive person like Jos Kahn was unable to ignore these things. But what he may have missed in fulfilling scientific passions and ambitions, he made up – and many times over – by his services as hospital chemist. This is a thankless job, but with a sense of duty, such as is rarely found, and with patience, with kindness and tact, he has shown the way for hospital chemists. While he was not given to talking a great deal, his counsel helped to guide us in the foundation of the American Association of Clinical Chemists in which he held various important offices since its inception.

His memory will live through his work and his example, through his friends and his sons. One could suggest no better epitaph for Jos Kahn than the inscription on a Roman tombstone of a physician of old: it shows a flaming torch and reads "While serving others I am being consumed" – *Aliis inserviendo consumor* –

MEMBERSHIP SCROLLS

Some of the newer members may not be familiar with the fact that the Association has available a very attractive engraved membership scroll that is suitable for framing and is obtained upon payment of four dollars to Dr. Louis B. Dotti, National Treasurer, St. Luke's Hospital, New York 25. We regret that there is usually some delay in distributing these scrolls as they are first sent to an artist for name inscription, and this is done only after enough requests have accumulated.

PATRONIZE OUR ADVERTISERS!

MARGARET L. ROSENBERG

It was a great shock to the friends and associates of Margaret L. Rosenberg to learn of her untimely death in a motor accident on August 25, 1951 on a vacation trip to the Adirondacks. She was a native New Yorker, and had received both her B.S. and M.S. degrees from Columbia University with biochemistry as her major subject.

She had worked in the laboratories at College of Physicians and Surgeons, Columbia University, as well as on various research projects at Mt. Sinai, Montifiore and other hospitals. She was always interested in clinical chemistry and was among the first to join the American Association of Clinical Chemists. She was unusually gifted in all sorts of arts and crafts and photography, receiving a license from the New York Board of Education to teach these subjects in recreational classes.

The American Association of Clinical Chemists, Inc., including many of her friends and associates wish to extend heartfelt sympathy to the members of her family.

CALIFORNIA LICENSURE

The Southern California Section continues its activities to secure provision for specialized licensure in the new State Regulations that are now in preliminary stages of formulation. According to reports, the outlook seems favorable. Many medical men fully recognize the special need to encourage qualified chemists to enter the clinical laboratory field, and are sympathetic with the prinicple of specialized licensure, which would permit a qualified chemist to participate in clinical chemistry without the present deterrent of first securing additional training in non-chemical phases of clinical laboratory work. However, full assurance must be given that no licensed biochemist would improperly practice in the non-chemical phases of work. Therefore, as an essential step, efforts are being made to define satisfactorily what phases of work constitute clinical chemistry in the clinical laboratory.

BOARD OF CLINICAL CHEMESTRY'S

(Continued from page 5)

prove the quality of clinical chemistry and the status of the clinical chemist, if chemists and laboratories co-operate in this step. It should be realized, however, that translating this objective into practical results can not be attained without considerable effort and understanding by all.

January – 1952 *Signed:*

AMERICAN BOARD OF CLINICAL CHEMISTRY, INC.

NOW AVAILABLE

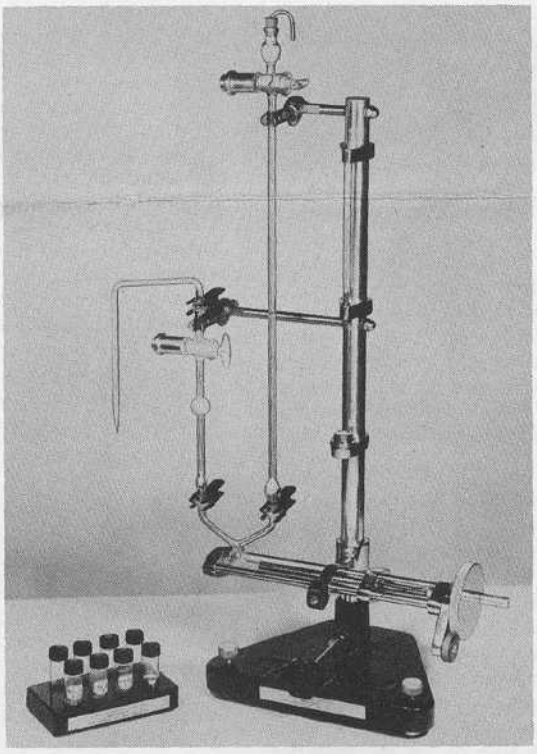
A Major Scientific Development

Kopp-Natelson Microgasometer*

For the Microgasometric Determination of Carbon Dioxide, Oxygen and Other gases

*REF.: NATELSON, S. et al. (1950), Determination of Carbon Dioxide Content with Microgasometer, demonstrated at the Sixth National Chemical Exposition, Chicago, September 5–9.

Patent Pending



Kopp-Natelson Manometric Microgasometer Model 511

- Determination of Carbon Dioxide, Oxygen, Carbon Monoxide, Nitrogen, etc. from ultra-micro volumes (0.03 ml) of Blood, Plasma or Serum.
- No pipette is needed for sampling. Micro-Pipette of precision calibration, contained in the instrument, makes possible direct sampling from fingertip or heel. Pipette is interchangeable, being attached by semi-balljoint.
- Operation is surprisingly simple and rapid. Procedure of drawing in and measuring of sample and reagents, producing of reduced pressure, shaking of mixture in the reaction chamber, and taking of manometric readings at constant volumes is all one continuous operation and is accomplished by manual turning of the wheel.
- No contact with air is possible during sampling or drawing in of reagents because of special technique employed, such as forming mercury seals and mercury globules from the tip of the Pipette.
- A great time saver. Fast and accurate routine clinical analyses. A single determination with washing of the instrument takes but a fraction of the time required with macro devices.
- Easily learned by the technician because of the simplicity of the procedure with a resulting increase in efficiency and comfort.
- The instrument holds less than 7 ounces of mercury and is silent in operation.
- Cuts operating costs drastically because of savings in time, chemicals and mercury, while producing quick positive determinations of unequalled accuracy.
- Thick wall pyrex glass parts which are replaceable and easily interchangeable are used throughout. Vacuum ground stopcocks equipped with Kopp exclusive Tension Lock devices. The manometer is engine graduated in millimeters from 0 to 350 mm.
- Unusually versatile. Macro gasometer analyses, where manometric procedures are used are quickly adaptable to micro quantities with this instrument.
- Portable. Weighs approximately 15 lbs.

KOPP SCIENTIFIC, INC. **405 East 62nd Street** **New York 21, N. Y.**

MANUFACTURERS AND SUPPLIERS OF
SCIENTIFIC INSTRUMENTS AND LABORATORY APPARATUS