

# THE CHESAPEAKE CHEMIST

MAY 1948

VOL. 4 NO. 5

PUBLISHED BY THE  
MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

ELMER V. MCCOLLUM - TEACHER AND INVESTIGATOR  
Elsa Orent Keiles

A man's scientific achievement is the combined result of his scientific ability and his character. In no one is this more clearly exemplified than in Elmer V. McCollum, the Remsen Memorial Lecturer for 1948, and few have enjoyed a life of such intense and long-continued scientific activity as he. His knowledge of the chemistry and physiology of nutrition is broad and deep, and so are his researches. His fertile imagination, breadth of vision, research enthusiasm, unswerving forward look and wide interests have given rise to a variety of important investigations for which he is recognized as one of the outstanding leaders of American science.

Much of Dr. McCollum's success as a scientist and teacher may be ascribed to the fact that he never inhabited an ivory tower. To his students he was a personal inspiration. His enthusiasm for research, unaccompanied by emotional display, kindled a like spirit in his students. Association with him was more than just a teacher-student bond, more than learning biochemistry and nutrition, more than working for an outstanding investigator of international renown. His students, whom he considered members of his own family, received more than mere elbow instruction. McCollum has the unusual faculty of injecting enthusiasm as well as implanting information in the minds of those who come under his guidance. He has always been alert to utilize the special opportunities of the place and time, not for personal prestige, but for his official family and the advancement of science.

A variety of significant developments in the field of nutrition have stemmed from fundamental research initiated by McCollum. His investigations at the University of Wisconsin marked the beginning of study of chemical aspects of animal nutrition and led to major improvement in feeding farm animals. (to page 3)

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THE CHESAPEAKE CHEMIST is published each month from September through May by the Maryland Section, American Chemical Society.  
 Editor: Belle Otto, Goucher College, Baltimore 18, Maryland.

## THE COUNCIL MEETING IN CHICAGO

A brief report of the Chicago meeting of the Council appeared in C&EN for April 26, 1948, and the minutes will be printed later. Three Maryland Section Councillors (Cooke, Otto, Reid) attended.

Your Councillors were impressed by the smoothness, efficiency and dispatch with which the Council conducted its business at this first meeting since the Council reorganization under the new constitution. The system of standing committees appeared to work well. The policy of having special meetings of these committees open to all members of the ACS showed promise.

The reports of the President and the Executive Secretary were especially interesting. Secretary Emery described the activities of President Thomas in connection with selective service legislation, and stressed the fact that the officers of the Society are alert to the need for most effective use of technically trained personnel in any national emergency. These activities are currently reported in C&EN in "Potomac Postscripts."

President Thomas expressed his concern over the financial condition of the Society, and pointed out the dangers involved in our lack of endowment for such expensive undertakings as Chemical Abstracts and in our great dependence upon current income, especially that derived from advertising. In response to questions, Dr. Thomas reminded the Council that ACS does not own or control Universal Oil Products in any way, but that the owners of this company have directed that if, as and when UOP makes a profit, this money is to be given to the ACS for petroleum research.

At Chicago the Standing Committee on Membership Affairs of the Council requested that ACS members be reminded of the existence and functions of the committee. This committee is charged with consideration of all matters pertaining to membership qualifications, methods of election and reinstatement. The committee invites comment from all chemists on these topics and on such related matters as securing additions to membership, and is eager to receive any ideas or grievances which members may care to submit. Send letters to the chairman of the committee, Dr. N. L. Drake, Department of Chemistry, University of Maryland, College Park, Md. If putting pen to paper seems a chore, tell your story to the editor of this paper, who will pass it on to Dr. Drake.

from page 1 Elmer V. McCollum, Teacher and Investigator  
 In fundamental studies with small laboratory animals he demonstrated that nucleic acid, lecithin, cephalin and phosphorized proteins can be synthesized by the body. His next outstanding contribution was discovery of the first of the fat-soluble vitamins, vitamin A. Two years later, Dr. McCollum reported an achievement of equal distinction in discovery of the animal's need for a water soluble nutrient, later known as vitamin B. At the same time he formulated the first adequate working hypothesis concerning what, in chemical terms, constitutes an adequate diet. He was also first to devise a method for the biological analysis of a foodstuff. He then turned his attention to study of the etiology of rickets. He succeeded in producing experimental rickets in the rat and, in collaboration with members of the Department of Pediatrics of the Johns Hopkins Hospital, revealed the relationships of dietary calcium and phosphorus to normal skeletal development. This research also led to his discovery of vitamin D and to development of a biological test for assay of anti-rachitic products. Further studies on vitamins resulted in discovery of the first chemical method for determining vitamin B<sub>1</sub> and in investigation of vitamin E in relation to dietary fat and muscular dystrophy.

Experiments on the role of inorganic elements in nutrition produced a series of reports by McCollum and his associates on the nutritional indispensability of magnesium, sodium and potassium. Work in this field was continued with pioneer investigations on the physiological role of the trace elements aluminum, manganese, fluorine, zinc, nickel, cobalt and boron. Dr. McCollum has recently reentered this field in his capacity as research adviser to the McCollum-Pratt Fund, established in his honor for study of the role of micro-nutrients in plant, animal and human nutrition.

Continuing his earlier studies of food proteins, Professor McCollum and co-workers engaged in a study of the separation of amino acids by chemical means. Since his retirement, he has continued this work and has succeeded in developing methods for the chromatographic fractionation of several of the amino acids.

Almost as active in retirement as in the busy years as professor, Dr. McCollum is continuing his own investigations in his laboratory at Homewood. He is a busy consultant. His writing activities in many fields continue undiminished. Through his own work, and through the work and teachings of his students, Dr. McCollum has exerted, and will long continue to exert, a profound influence upon the sciences of biochemistry and nutrition.

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from page 4) Remsen the Chemist and Teacher  
 Fahlberg, but neither I nor Merck and Company could ever persuade Remsen to enter the suit - his reply being that he would never soil his hands with industry and business.  
 (Editor's note: These sketches by Dr. Dohme will be continued.)



## THE REMSEN MEETING

- THE DATE Friday, May 28, 1948
- THE PLACE The Homewood Campus of The Johns Hopkins University
- THE LECTURER Dr. Elmer V. McCollum, Emeritus Professor of Biochemistry of the School of Hygiene and Public Health of The Johns Hopkins University
- THE DINNER At 6:30 P.M. in Levering Hall. Reservations should be made with Dr. A. H. Corwin, Department of Chemistry, The Johns Hopkins University, Baltimore 18, HOplins 3300, Ext. 58, before Wednesday, May 26. Price \$2.25. Formal dress is optional. The dinner is open to all members of the section and their guests.
- THE REMSEN MEMORIAL LECTURE At 8:15 P.M. in Room 101, Remsen Hall. Dr. McCollum will speak on "Vitamins and the Public Health." The meeting is open to all who are interested.

## REMSSEN THE CHEMIST AND TEACHER

Alfred R. L. Dohme

As one of the few living pupils of Ira Remsen I am very glad to tell some of the experiences, I had in work in his laboratory.

Remsen had secured his Ph. D. at Tubingen under Rudolph Fittig whose assistant he was for a while before returning to this country. When I went to Germany to study in the universities there in 1889, I carried Remsen's regards to his teacher, but learned that Fittig had just committed suicide in his laboratory. I also carried letters of introduction from Remsen to von Hofmann, Wislicenus and many other leading German chemists. My interviews with Kekule at Bonn, Adolph Bayer at Munich, Victor Meyer at Heidelberg, Wilhelm Ostwald at Leipzig and Emil Fischer at Wurzburg were very interesting. They all held Remsen in high esteem, principally because of his textbooks which had been translated into German and were being used by many German students. His "Theoretical Chemistry" they considered superior to Ladenburg's.

Remsen wanted to know how these German chemists felt about the saccharin problems, and, without exception, they thought that Remsen should claim the patent rights upon saccharin (ortho-benzosulfimide). Remsen's pupil and fellow in chemistry, Constantin Fahlberg, had appropriated this product as his own and had patented it in Germany for the world. From it he made a fortune, living for years in a castle on the Rhine. This was a problem of oxidation which Remsen gave Fahlberg who drew the ortho product, while other students drew the meta and para. Fahlberg discovered the sweetness of saccharin by chance at his boarding house one day while eating his dinner. He apparently had not washed his hands, and when his fingers came in contact with his mouth he tasted the sweetness of something on his hands. He got Bill Stewart out and at once tasted the contents of all the beakers on his desk containing products which he had made in the laboratory. One he found very sweet. He did not tell Remsen about the sweetness, but finished his paper for the American Chemical Journal, left for Europe and got his patent. All the German chemists advised that Remsen should sue (to page 3