V. Sampson, of Germantown, and Mrs. John Wescott, of Princeton, and a draft for $500 was sent to Dr. Dohrn at Naples to maintain the American Women's Table at the Naples Station for the year 1898–99.

From its inception there was a balance in the treasury of the association over and above the $500 paid yearly for the upkeep of the Naples Table, and for a time the association voted this in the form of grants to scholars working at the table. This plan was abandoned later in favor of the final policy of the association, which was to permit the surplus to accumulate until sufficient in amount to offer as a prize of encouragement for scientific research by women and ultimately, as a recognition of work accomplished. Thus, the Ellen Richards Research Prize, with a value of $1,000, was established. This prize has been offered fourteen times, and has been awarded six times as follows: Dr. Florence Rena Sabin (U. S. A.); Dr. Nettie M. Stevens (U. S. A.); Dr. Florence Buchanan (England); Dr. Ida Smedley McLane (England); Dr. Eleanor Carothers (U. S. A.); Dr. Evelyn Laing (England). Later this prize was increased to $2,000 and awarded to Madame Curie in 1921, and the 1928 $2,000 prize was divided equally between Dr. Lisa Meitner, of the University of Berlin, and Dr. Ramert-Lucas, of the University of Paris.

Throughout the thirty-five years of its existence, the Association to Aid Scientific Research by Women was maintained by annual subscriptions of fifty dollars each. It met annually each April, by invitation from different members. Any institution, association, group of individuals or individual who subscribed fifty dollars annually might be elected to membership in the association during the continuance of the subscription. Each membership could nominate a voting representative to attend the annual April meeting. Its purpose has been to maintain a table for the use of women at the Zoological Station at Naples, and to encourage and recognize, through its Ellen Richards Research Prize, successful achievement in scientific research by women.

As the guests of Dr. Florence R. Sabin at the American Woman's Club in New York on Saturday, April 30, twelve members of the Association to Aid Scientific Research by Women met to make the final award of the Ellen Richards Research Prize. The decision was a most difficult one, so again, as in 1928, the $2,000 prize was equally divided, this time between the two distinguished American scholars, Dr. Helen Dean King, the biologist of the Wistar Institute, University of Pennsylvania, and Dr. Annie Jump Cannon, the astronomer of the Harvard Observatory, Cambridge.

There being no further business, the following resolution, drafted by Dean Nicolson, of Smith College, President Pendleton, of Wellesley, and Dean Gildersleeve, of Barnard, was presented and carried:

*Whereas,* the objects for which this Association has worked for thirty-five years have been achieved, since women are given opportunities to engage in Scientific Research on an equality with men, and to gain recognition for their achievements, be it

*Resolved,* that this Association cease to exist after the adjournment of this meeting.

And thus, with the adjournment of the meeting, the Association to Aid Scientific Research by Women ceased to exist as an active organization. In the minds of those who have had the great happiness of attending its meetings and sharing in its activities, the association shall long live as one that has played a really vital part in the advancement of scientific research by women.

H. JEAN CRAWFORD,
*Secretary*
UNIVERSITY OF PENNSYLVANIA

# THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

## MEDICAL SCIENCES AT ATLANTIC CITY

THE program for Section N (Medical Sciences) at Atlantic City is practically complete. It will be devoted entirely to symposia on timely subjects of medical interest.

Dr. John J. Abel, president of the association, will lead a very important symposium on "The Present Knowledge of the Hypophysis Cerebri (Pituitary Body)," on Wednesday afternoon, December 28. Dr. Herbert M. Evans, of the University of California, will participate in this symposium by discussing the hormones of the anterior hypophysis. In presenting a paper on the pituitary-gonad relationship, Dr. Philip E. Smith, of the College of Physicians and Surgeons, Columbia University, will point out the importance of the receptor organ and the method of administration of extracts. Dr. E. M. K. Geiling, of the Johns Hopkins University, will describe the functions of the posterior lobe of the pituitary body. Dr. George W. Corner, of the University of Rochester, Dr. Harvey W. Cushing, of Harvard University, and Dr. John J. Abel will take part in the discussions.

Dr. Wm. H. Park, chairman of Section N, has organized a symposium on tuberculosis for Wednesday

morning. At this session, Dr. Eugene L. Opie, of Cornell University Medical School, will discuss spontaneous immunization in tuberculosis. Dr. Camille Kereszturi, of the Department of Health, New York City, will consider the fate of the new-born in a tuberculosis home with and without vaccination, and Dr. Lucy Mishulow, of the Department of Health, New York City, will describe preliminary isolation and differentiation of the tuberculosis bacilli on Bordet, Gengou and Lowenstein media.

Important sessions for discussions of filterable viruses and filterable virus diseases have been arranged for Thursday, December 29. Dr. Wm. H. Park will present a paper on the epidemiology, prevention and treatment of poliomyelitis (infantile paralysis). Dr. Edmund V. Cowdry, of Washington University, will discuss nuclear inclusions in virus diseases. Dr. Roscoe R. Hyde, of the Johns Hopkins University, will consider problems presented in the study of filterable viruses, and Dr. Earl B. McKinley, of George Washington University, will discuss filterable virus diseases and the nature of their causative agents. Dr. Max Theiler, of the Rockefeller Foundation, will discuss the susceptibility of common laboratory animals to the virus of yellow fever, and Dr. Thomas M. Rivers, of the Rockefeller Institute, will explain the nature of viruses and the pathology of virus diseases in relation to serum therapy. Dr. Hans Zinsser, of Harvard University, will lead the general discussion.

A joint session of Section L (Historical and Philological Sciences), Section N, the History of Science Society and the American College of Dentists will be held on Thursday evening. Dr. Wm. H. Welch, of the Johns Hopkins University, will preside at this session and present a paper entitled, "Antony van Leeuwenhoek: A Tribute on the Tercentenary of His Birth." The retiring chairman of Section N, Dr. Howard T. Karsner, of Western Reserve University, will give an address on "Medieval Guilds of Medical Interest." Following Dr. Karsner's address, Dr. Henry E. Sigerist, of the Johns Hopkins University, will discuss "The Edwin Smith Surgical Papyrus." Dr. Harvey W. Cushing, of Harvard University, will present a paper entitled "The Anatomical Tables of Ercole Lelli."

On Friday, all day, Section N will hold joint sessions with the American College of Dentists for the reading of invited papers that will show phases of dental science having particular interest for medical men. The chairmen at the morning and afternoon sessions will be Dr. Arthur D. Black, of Northwestern University, and Dr. L. M. Waugh, of Columbia University, respectively. Dr. F. S. McKay, formerly associated with the U. S. Public Health Service, will describe the sequence of scientific observations that led to the discovery of the cause and prevention of mottled enamel. Mottled enamel is a seriously destructive condition in various districts, in Arizona, Arkansas, Colorado and Idaho, especially. Dr. McKay will report that this condition has recently been found to be due to excessive amounts of fluoride in drinking water and will emphasize the importance of measures for its prevention. Dr. Theodor Rosebury, of the College of Physicians and Surgeons, Columbia University, will speak on the experimental production of typical dental caries in animals and its value for the study of decay of teeth in man. Dr. J. J. Enright, of the Mellon Institute, will lead the discussion of Dr. Rosebury's paper. Dr. J. L. T. Appleton, Jr., of the University of Pennsylvania, will discuss the scientific treatment of teeth having infection at their roots. Dr. V. H. Kazanjian, of Harvard University, will present a paper on problems in oral surgery as affecting reconstruction of face and jaws. Dr. Robert H. Ivy, of Philadelphia, will lead the discussion of Dr. Kazanjian's paper. On Friday afternoon Dr. Frederick B. Noyes, of the University of Illinois College of Dentistry, will speak on the advisability of converting orthodontia into a specialty of medical practice. Dr. Milo Hellman, of the American Museum of Natural History, will lead the discussion of Dr. Noyes' paper. Dr. Wilmer Souder, of the U. S. Bureau of Standards, will point out how science aids in improving dental restorations. Dr. W. W. Wright, of the University of Pittsburgh, will discuss morphological changes in the mucous membrane covering edentulous areas of the alveolar process in the human mouth.

At 4:45 P. M., Friday, Dr. R. W. Bunting, of the University of Michigan, director there of the dental research supported by the Couzens Children's Fund, will give an address on recent developments in the study of dental caries (decay). This address, which will be delivered at a general session of the association, will be of interest to every one.

A dinner for members of the American College of Dentists and of Section N, and their guests, will be held on Friday evening. Following the dinner, Dr U. G. Rickert, of the University of Michigan, retiring president of the college, will deliver an address on the present status of dental research. After the address of Dr. Rickert, Dr. Weston A. Price, of Cleveland, will speak on "New Light on the Cause and Control of Tooth Decay in Man, from Field Studies of Primitive Districts Providing Immunity."

A number of papers, which will be given at meetings of the American Society of Parasitologists, will be of special interest to medical men. In particular

Dr. G. F. White, of the U. S. Bureau of Entomology, will present a paper on the production of sterile maggots for surgical use. Dr. G. F. Otts and Dr. W. W. Cort, of the Johns Hopkins University, will speak on post-treatment infestation with Ascaris and hookworm. Other papers of distinct medical interest will be presented by Dr. R. B. H. Gradwohl, of St. Louis, Dr. E. C. Nelson, of the Johns Hopkins University, Dr. Ernest C. Faust, of Tulane University, and Dr. R. W. Glasser, of the Rockefeller Institute for Medical Research. A total of 76 papers will be presented at sessions of the American Society of Parasitologists.

CHARLES F. ROOS,
*Permanent Secretary*

# SCIENTIFIC APPARATUS AND LABORATORY METHODS

## A RELIABLE METHOD FOR THE PRODUCTION OF NUTRITIONAL ANEMIA IN WHITE RATS

IN the production of experimental anemia in albino rats fresh cows' milk is widely used as the sole ingredient of the diet. This ability of fresh cows' milk to produce anemia is evidently dependent on its copper and iron components. In our experience it has been difficult to produce a uniform degree of anemia at the end of a given period of time. This has been due in no small measure to the fact that the iron and copper content of cows' milk varies with the breed of the cow, the diet of the cow, the season of the year (doubtlessly involving the diet) and the method used in collecting and storing the milk. When the fresh milk diet is used the milk rapidly sours in feeding jars and must, on that account, be given in several small doses daily. With such variations and inconveniences it has frequently been necessary to maintain the animals on the fresh milk diet for several months before a severe anemia developed. Because of these difficulties in obtaining consistent anemia in albino rats on the whole milk diet another form of milk has been tested in this laboratory. Klim, a whole dried milk, when fed as such, has caused the development of a severe anemia in albino rats much more consistently than the fresh milk diet. Water was given the animals in a separate container *ad libitum*. The Dryco brand of dried whole milk has not yet been used, for Supplee *et al.*[1] have reported that it does not support the production of anemia.

The mortality among the rats on the Klim diet, in our experience, has been much lower than with the fresh milk ration. The variation in the extent of anemia produced in the animals at the end of a given period of time was less. At the end of four weeks on the diet a typical group of 25 animals showed a maximum hemoglobin content of 3.8, a minimum of 2.5, and a mean of 3.1 grams of hemoglobin per 100 cc of blood. It has been found that occasionally a rat will grow much more rapidly than his fellows in a test. At the same time there is a more rapid decrease in the blood hemoglobin value of this rat with the result that at the end of four weeks there are but 1.8 grams per 100 cc of blood. These occasional exceptions have been discarded from the tests.

The growth of the animals on this diet is rapid and uniform. During the first few days they generally develop a diarrhea (perhaps associated with high lactose intake) but this clears up before the seventh day and has no apparent effect on the curve of weight increase.

The 100 animals whose growth and hemoglobin curves are shown in Fig. 1 were fed the Klim diet

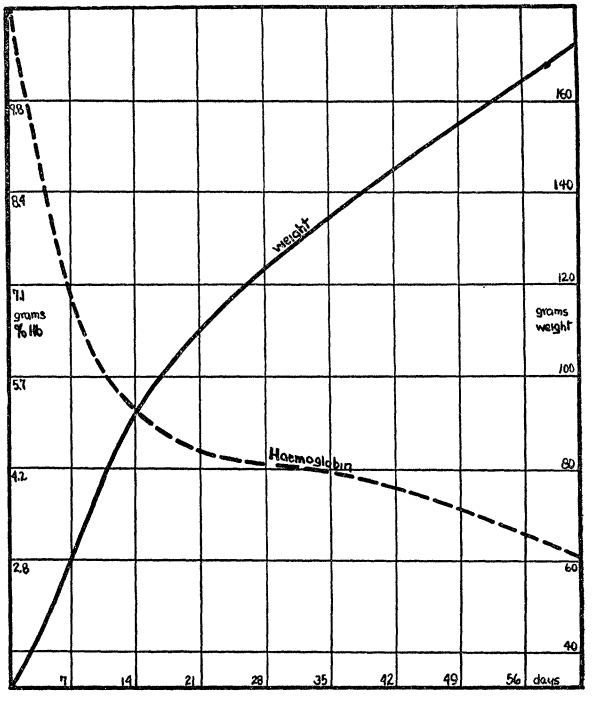


Figure 1

with no supplements. They were housed in heavily galvanized iron wire cages with false bottoms. They were not bred with the precautions recommended by Elvehjem and Kemmerer[2] nor caged in glass compartments,[3] for it appears that this is not necessary. It

[1] G. C. Supplee, O. D. Dow, G. E. Flanigan and O. J. Kahlenberg, *Jour. of Nutrition*, 2, 451, 1930.

[2] C. A. Elvehjem and A. R. Kemmerer, *Jour. Biol. Chem.*, 93, 189, 1931.

[3] (a) W. B. Nevens and D. D. Shaw, SCIENCE, 72, 249, 1930; (b) F. A. Underhill, J. M. Orten and R. C. Lewis, *Jour. Biol. Chem.*, 93, 13, 1931.