

teaching centers: Lower East Side with New York University College of Medicine; Kips Bay-Yorkville with New York Hospital-Cornell University Medical College; East Harlem with New York Medical College and Flower Hospital, and Red Hook-Gowanus with Long Island College of Medicine.

Three additional new health centers are planned for completion this summer and fall, namely, the Corona Health Center in Queens, the Tremont Health Center and Borough Office Building in the Bronx and the Fort Greene Health Center and Borough Office Building in Brooklyn. Plans are also under way and funds have been provided in the budget of the Department of Health for a new health center and borough office building in Jamaica, Queens. When these units are completed, New York City will have fifteen new health center buildings in the five boroughs, or half the goal set for establishing a health center in each of the city's thirty health center districts.

#### NOMINATIONS FOR OFFICERS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

NOMINATIONS for officers for 1941 of the American Society of Mechanical Engineers have been announced. O. A. Leutwiler, head of the department of mechanical engineering at the University of Illinois, is chairman of the National Nominating Committee, which held sessions during the semi-annual meeting of the society in New York City from June 17 to 20. Election will be held by letter ballot of the entire membership of 15,000, closing on September 24.

The nominees as presented by the committee are:

*President*, William A. Hanley, in charge of engineering, Eli Lilly and Company, Indianapolis.

*Vice-presidents*, Dean Samuel B. Earle, School of Engineering, Clemson Agricultural College, South Carolina; Frank H. Prouty, partner, Prouty Bros. Engineering Company, Denver; Edwin B. Ricketts, mechanical engineer, Consolidated Edison Company of New York, Inc.

*Managers*, Professor Huber O. Croft, head of the department of mechanical engineering, the State University of Iowa; Professor Paul B. Eaton, in charge of the department of mechanical engineering, Lafayette College; George E. Hulse, chief engineer, Safety Car Heating and Lighting Company, New Haven.

#### PROMOTIONS AND APPOINTMENTS AT THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

THE Board of Scientific Directors of the Rocke-

feller Institute for Medical Research announces the following appointments and promotions on the scientific staff to take effect on or after July 1.

*Promotions*: Associate Member to Member. Dr. Duncan A. MacInnes, Dr. Richard E. Shope, Dr. Wendell M. Stanley.

Associate to Associate Member. Dr. Moses Kunitz, Dr. Alfred E. Mirsky.

Assistant to Associate. Dr. Douglas A. MacFadyen, Dr. William Trager.

Fellow to Assistant. Dr. Armin C. Braun, Dr. Malcolm S. Ferguson, Dr. Birdsey Renshaw, Dr. William C. Spring, Jr.

*New Appointments*: Assistants. Dr. Gail L. Miller, Dr. Howard A. Schneider, Dr. Armine T. Wilson.

Fellows. Dr. James A. Baker, Claude A. Knight, Jr., Dr. Kermit W. Kreitlow, Dr. Margaret R. McDonald, Dr. R. Walter Schlesinger.

The board also announces that Dr. Leonor Michaelis, who has reached the age of retirement, has been made member emeritus of the institute.

#### HONORARY DEGREES CONFERRED BY HARVARD UNIVERSITY

AT the two hundred and eighty-ninth commencement on June 20 of Harvard University ten honorary degrees were conferred. Dr. James Bryant Conant, president of the university, read the citations. Those conferred in the sciences were as follows:

##### DOCTOR OF LAWS

Julian L. Coolidge, professor of mathematics, LL.D.—The first master of Lowell House, one of the founding fathers of a new era in collegiate education, magnanimous in his friendships, resolute in his labors.

##### DOCTOR OF SCIENCE

Alfred N. Richards, professor of pharmacology, University of Pennsylvania, D.S.—An ingenious experimenter with living animals, a learned student of the action of drugs in alleviating human suffering.

Thomas Barbour, director of the Harvard University Museum, D.S.—A born naturalist, who has extended our vision of the age-old world of animal life; a generous leader; an able director of a great museum.

Elliott P. Joslin, clinical professor of medicine, emeritus, D.S.—A pioneer in applying scientific knowledge to the treatment of diabetes; to his hospital have come a multitude of physicians eager to improve their skill.

## SCIENTIFIC NOTES AND NEWS

MEMBERS of the new National Defense Research Committee instituted by President Roosevelt have been appointed as follows: Dr. Vannevar Bush, president of the Carnegie Institution of Washington,

chairman; Dr. Frank B. Jewett, president of the National Academy of Sciences and president of the Bell Telephone Laboratories; Dr. Lyman J. Briggs, director of the National Bureau of Standards; Presi-

dent James B. Conant, of Harvard University; President Karl T. Compton, of the Massachusetts Institute of Technology; Dr. Richard C. Tolman, of the California Institute of Technology; Commissioner of Patents Coe, representing the Department of Commerce, and representatives of the War and Navy Departments.

DR. PETER J. W. DEBYE, of the Kaiser Wilhelm Institute of Physics at Berlin-Dahlem, Nobel laureate in chemistry in 1936, has been appointed professor and chairman of the department of chemistry at Cornell University. Dr. Debye has been George F. Baker visiting lecturer in chemistry at Cornell University during the past term. His son, Peter Paul Debye, will be associated with Professor Debye in research in the Baker Laboratory of Chemistry at Cornell. Professor Jacob Papish, who has been chairman of the department, will continue as vice-chairman.

PROFESSOR OTTO LOEWI, who was awarded the Nobel Prize in medicine in 1936, has become research professor in pharmacology at the New York University College of Medicine.

At the commencement exercises on June 9 of Yale University the degree of doctor of science was awarded to Dr. Edward Adelbert Doisy, professor of biochemistry at St. Louis University. The citation made by President Seymour reads: "For your brilliant investigations in the chemistry of vital processes which have led to the isolation and synthesis of chemical compounds important for human life, thus contributing to the conservation of health and the prevention of disease."

DR. WARDER CLYDE ALLEE, professor of zoology at the University of Chicago, on June 10 received the honorary degree of doctor of laws from Earlham College, Richmond, Ind. The citation reads: "He is a scholar who believes that scholarship should serve society, a scientist and an author who seeks to apply natural laws to the social, the economic and the spiritual world." Dr. Allee has been elected an alumni trustee of the college.

At the commencement exercises on June 6 of Wesleyan University the degree of doctor of science was conferred on Dr. Frank Burnett Dains, professor of chemistry at the University of Kansas, and on Dr. Lewis Gardner Westgate, professor emeritus of geology of the Ohio Wesleyan University.

THE degree of doctor of laws was conferred on Professor Maria M. Roberts by the Iowa State College on June 10, "in recognition of fifty years of devoted and distinguished service to the college in the department of mathematics, as dean of the Junior College and as administrator of the student loan funds."

THE degree of doctor of science was conferred on Dr. Melville Thurston Cook, director of the Insular Experiment Station at Rio Piedras, at the graduating exercises of the College of Agriculture and Mechanic Arts of the University of Puerto Rico, at Mayaguez, in recognition of his work in tropical plant pathology. Dr. Cook delivered the commencement address.

MEMBERS of the staff of the State Education Department and the Regents of the University of the State of New York gave a testimonial dinner on June 18 in the Education Building in honor of Dr. Frank P. Graves, State Commissioner of Education, who will retire on July 1. An oil painting of Dr. Graves, which will be hung in the main corridor of the Education Building, was unveiled at the dinner.

MRS. EDITH H. QUIMBY, associate physicist of Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, was presented with the Janeway Medal for distinguished service in radiological physics of the American Radium Society at the twenty-fifth annual dinner of the society at the Waldorf-Astoria on June 6.

OFFICERS of the American Society of Plant Physiologists elected for the year beginning on July 1 are: F. P. Cullinan, Beltsville, Md., *president*; B. S. Meyer, the Ohio State University, *vice-president*; J. W. Shive, New Jersey Agricultural Experiment Station, member of the executive committee, and H. R. Kraybill, Purdue University, member of the editorial board of *Plant Physiology*. W. E. Loomis, of the Iowa State College, will continue as *secretary-treasurer*.

DR. EDWARD ELLERY, professor of chemistry of Union College, gave the address at the commencement exercises of the college. He is retiring at the close of the year after thirty-six years of service as professor. He has been successively dean of the faculty, acting president, chairman of the faculty and of the division of science. On July 1 he will become national president of Sigma Xi, of which he has been executive secretary for eighteen years.

DR. WILLIAM E. HENDERSON, professor of chemistry, and Dr. Edwin F. Coddington, professor of geodetic engineering, of the Ohio State University, are retiring with the title emeritus at the close of the academic year.

DR. JOSEPH ALLEN, professor of mathematics at the College of the City of New York, a member of the faculty since 1897, will retire on September 1.

DR. BURTON D. MYERS, dean of the Indiana University School of Medicine at Bloomington, will retire at the end of the current semester. He has been affiliated with the school since 1903, when he was made

professor of anatomy. The retirement is also announced of the following part-time members of the medical and dental faculty: Dr. Alois B. Graham, chairman of the division of gastro-enterology and professor of surgery; Dr. Charles E. Cottingham, associate in neurology and psychiatry; Dr. John Tipton Wheeler, professor of anatomy at the dental school, and Dr. Louis DeKeyser Belden, associate professor of pathology, bacteriology and histology.

PROFESSOR E. S. HABER has been named head of the vegetable crops subsection of the Iowa Agricultural Experiment Station. He succeeds Professor A. T. Erwin, who continues to be a member of the staff. Professor Haber has been at the Iowa State College since 1920, both as member of the Experiment Station and of the department of horticulture.

DR. J. HOLMES MARTIN, director of the U. S. Regional Poultry Research Laboratory of East Lansing, Michigan, has been appointed head of the poultry department at Purdue University effective on July 1. Dr. Martin was in charge of poultry husbandry and genetics at the University of Kentucky before going to the Bureau of Animal Industry in January, 1939. Professor C. W. Carriek, who has been serving as head of the department at Purdue, has, at his own request, been relieved of administrative work, so that he may give his undivided time to research and teaching.

DR. BRYCE L. CRAWFORD, JR., instructor at Yale University, has been appointed assistant professor of physical chemistry at the University of Minnesota.

DR. L. P. ALFORD, chairman of the department of administrative engineering at New York University, has not joined the faculty of Cornell University as was erroneously stated in the issue of *SCIENCE* for May 24.

DR. GEORGE WALTER MCCOY, professor of preventive medicine and public health at the Louisiana State University School of Medicine, New Orleans, will retire from the U. S. Public Health Service on June 30 after forty years of active service.

NEWTON B. DRURY, of California, has been appointed director of the National Park Service to succeed Arno B. Cammerer, who in accordance with his request will be relieved for reasons of health. Mr. Cammerer will remain with the National Park Service and will be appointed to an advisory position.

DR. A. C. SMITH, associate curator of the New York Botanical Garden, has been appointed curator of the Arnold Arboretum of Harvard University at Jamaica Plain.

PROFESSOR A. M. CHICKERING of Albion College, will spend several weeks during the coming summer at

the Museum of Comparative Zoology of Harvard College working on his extensive collections of spiders made as a result of five summers of field work in Panama and Honduras.

PROFESSOR CARL F. CORI, of the department of pharmacology, Washington University School of Medicine, lectured at the Iowa State College on June 21. His subject was "Enzymatic Synthesis of Carbohydrates."

DR. KARL T. COMPTON, president of the Massachusetts Institute of Technology, gave the commencement address at Wellesley College on June 17.

THE Genetics Society of America will hold its usual meeting at the Marine Biological Laboratory, Woods Hole, Mass., on Thursday and Friday, on August 29 and 30.

SIGMA PI SIGMA, physics honor society, recently installed new chapters at the San Diego State College, California, and at Muskingum College, New Concord, Ohio. On May 23 Dr. Carl F. Eyring, dean of the College of Arts and Sciences of Brigham Young University, installed the San Diego State College chapter. Thirty-three students, faculty members and alumni constituted the charter group. At an open meeting following the installation banquet, Dr. Vern O. Knudsen, dean of the Graduate Division of the University of California at Los Angeles, delivered an address on "An Ear to the Future." The Muskingum College Chapter was installed on May 31, with Dr. Marsh W. White, Pennsylvania State College, as senior installing officer, assisted by a number of alumni members of the society. Dr. Elmer Hutchisson, head of the department of physics at the University of Pittsburgh, addressed an open meeting in the evening, speaking on "Robots Return to Reason," and presenting an appeal for a new and more effective approach to the teaching of physics to non-technical students.

A NEW department of psychology has been established in the College of Arts and Sciences at the University of Nebraska, with Dr. Arthur Jenness, associate professor of psychology, as chairman. The psychological laboratory at Nebraska has existed since 1889, but until now it has been a part of the department of philosophy and psychology. The staff of the new department, in addition to Dr. Jenness, consists of Dr. Donald W. Dysinger, assistant professor, Dr. William E. Walton, assistant professor, Dr. Wilbur S. Gregory, instructor, and Dr. Roger W. Russell, instructor. No change has been made in the department of educational psychology and measurements in the Teachers College or in the work in child development and family life in the department of home economics in the College of Agriculture.

THE *Journal* of the American Medical Association

states that the division of medical sciences of the National Research Council has appointed the following committees to cooperate with the medical corps of the U. S. Army and Navy: *Committee on Chemotherapeutic and Other Agents*: Dr. Perrin H. Long, *chairman*, Baltimore; Dr. Francis G. Blake, New Haven; Dr. John S. Lockwood, Philadelphia; Dr. John F. Mahoney, Staten Island, N. Y.; Dr. Eli Kennerly Marshall, Jr., Baltimore. *Subcommittees*: Infectious Diseases, Dr. Blake, *chairman*; Tropical Diseases, Dr. Wilbur A. Sawyer, New York, *chairman*; Venereal

Diseases, Dr. Joseph E. Moore, Baltimore, *chairman*; Wounds and Burns, Dr. Evarts A. Graham, St. Louis, *chairman*. *Committee on Transfusions*: Dr. Walter B. Cannon, Boston, *chairman*; Dr. Alfred Blalock, Nashville, Tenn.; Dr. Everett D. Plass, Iowa City; Dr. Max M. Strumia, Bryn Mawr, Pa.; Dr. Cyrus C. Sturgis, Ann Arbor. *Subcommittees*: Blood Substitutes, Dr. Sturgis, *chairman*; Anesthesia in Shock, Dr. Blalock, *chairman*. These committees are the result of an informal request for advice from the two medical corps.

## DISCUSSION

### THE RELATIONSHIP OF HISTAMINE TO ANAPHYLAXIS IN THE RABBIT

THE long-suspected possibility that histamine might play a rôle in the symptomatology of acute anaphylaxis in experimental animals was demonstrated by Dragstedt and Gebauer-Fuelnegg<sup>1</sup> for the dog, and by Bartosch, Feldberg and Nagel<sup>2</sup> for the guinea-pig. The significant relationship of histamine to the reactions in these animals has been confirmed by a number of workers.<sup>3</sup> The postulate of Dale that the effects of histamine are a prominent feature of the anaphylactic reaction has thus been verified for these animals. Recently Rose and Weil<sup>4</sup> have reported that during anaphylactic shock in the rabbit there is a marked decrease in the total blood histamine in contrast to the increased amounts that are found in the dog and guinea-pig. This observation has been confirmed in our laboratory. This apparent discrepancy would not be disturbing to any general concept of the anaphylactic reaction, were it not for the fact that the symptomatology of the reaction in the rabbit bears the imprint of the effects of histamine nearly to the same extent that the reactions in the dog and guinea-pig do.

We believe that the following observations explain this apparent contradiction, and indicate that histamine does indeed play a rôle in the reaction in the rabbit.

Of the rabbit's tissues, blood is one of the richest sources of histamine, and Code<sup>5</sup> has shown that the greater part of this is contained within the leukocytes. Leukopenia is a common manifestation of anaphylaxis in many animals, and is particularly striking in the rabbit. Abell and Schenck<sup>6</sup> have shown that during

an anaphylactic reaction in a rabbit, the leukocytes become sticky, adhering in clumps to the endothelium of the smaller vessels and actually form leukocytic emboli, which may completely obstruct some of these vessels. A rapid reduction in the leukocytes would necessarily result in a reduction in the histamine content of the circulating blood unless histamine from other sources was added in quantities to compensate for such a loss. Since the lungs would provide the first filter for sticky leukocytes in an anaphylactic experiment when the antigen is injected intravenously, the following experiment was performed. A sensitized rabbit was killed and the lungs arranged for perfusion through the pulmonary vessels and for rhythmical ventilation through the trachea. The animal's blood was obtained, kept from clotting by means of heparin, and perfused through the lungs. Histamine determinations and leukocyte counts were made on the blood during several passages through the lungs. Antigen was then added to the blood and the determinations repeated. There was a marked reduction in the total blood histamine and in the leukocyte count after the first passage through the lungs following the addition of antigen, amounting to approximately 50 per cent. of the preceding values. Continued perfusion resulted in a still further reduction.

These observations explain why the total blood histamine is reduced in rabbits during anaphylactic shock. The question remains—does histamine play a rôle in the anaphylactic reaction? Katz<sup>7</sup> has shown that if antigen is added to blood from a sensitized rabbit, there is a release of a considerable fraction of the cellular histamine into the plasma. We have confirmed this observation. On the basis of the *in vitro* experiment, the calculated amount of histamine that could be liberated *in vivo* is in the neighborhood of 0.1 to 0.3 mgm of histamine base per kilo. Such a dose of histamine would undoubtedly produce marked effects. That histamine is released *in vivo* as it is *in vitro* is indicated by Abell and Schenck's observations

<sup>1</sup> C. A. Dragstedt and E. Gebauer-Fuelnegg, *Am. Jour. Physiol.*, 102: 512, 520, 1932.

<sup>2</sup> R. Bartosch, W. Feldberg and E. Nagel, *Pflüger's Arch.*, 230: 129, 674, 1932.

<sup>3</sup> C. A. Dragstedt and F. B. Mead, *Jour. Pharm. and Exp. Ther.*, 57: 419, 1936; G. Unger and J. L. Parrott, *Ann. de Physiol.*, 13: 939, 1937; C. F. Code, *Am. Jour. Physiol.*, 123: 40, 1938.

<sup>4</sup> B. Rose and P. Weil, *Proc. Soc. Exp. Biol. and Med.*, 42: 494, 1939.

<sup>5</sup> C. F. Code, *Jour. Physiol.*, 90: 485, 1937.

<sup>6</sup> R. G. Abell and H. P. Schenck, *Jour. Immunol.*, 34: 195, 1938.

<sup>7</sup> G. Katz, *SCIENCE*, 91: 221, 1940.