ZOOLOGY, PHYSIOLOGY AND ANATOMY

A. V. Hill, London
R. Goldschmidt, Berlin
August Krogh, Copenhagen
Joseph Barcroft, Cambridge
Filippo Bottazzi, Naples

BOTANY

Ludwig Diels, Berlin

PSYCHOLOGY

Emilio Mira, Barcelona
Henri Pieron, Paris
Charles E. Spearman, London

SOCIAL SCIENCES

G. A. Bagge, Sweden
Albrecht Mendelssohn Bartholdy, Hamburg
Henry Clay, Manchester

ENGINEERING

A. P. M. Fleming, Cheshire, England

MEDICAL SCIENCES

Ludwig Aschoff, Freiburg
C. U. A. Kappers, Amsterdam
C. Levaditi, Paris
Cl. Regaud, Paris

AGRICULTURE

Otto Appel, Berlin-Dahlem
Jean Dufrénoy, Brive, France
Sir Daniel Hall, London

SCIENTIFIC NOTES AND NEWS

THE medals of the Royal Society have been awarded as follows: Royal Medals to Professor R. Robinson, for his work in organic chemistry and to Professor E. Mellanby, for his work on dietary factors, especially in connection with rickets; the Copley Medal to Dr. G. E. Hale, foreign member of the Royal Society, for his work on the magnetic field of the sun; the Rumford Medal to Professor F. Haber, for his work in the application of thermodynamics to chemical reactions; the Davy Medal to Professor R. Willstätter, for his researches in organic chemistry; the Darwin Medal to Dr. C. E. Correns, for his researches in genetics; the Buchanan Medal to Professor T. Madsen, for his work on immunity, especially in relation to diphtheria antitoxin, and the Hughes Medal to Dr. J. Chadwick, for his researches on radioactivity.

THE following are recommended by the president and council for election to the council of the Royal Society at the anniversary meeting on November 30: Sir Frederick Hopkins, *president;* Sir Henry Lyons, *treasurer;* Sir Henry Dale and Sir Frank Smith, *secretaries;* Lord Rayleigh, *foreign secretary. Other members of council:* Dr. J. A. Arkwright, Professor W. L. Bragg, Professor C. H. Desch, Dr. G. M. B. Dobson, Mr. A. C. G. Egerton, Dr. J. Gray, Professor A. V. Hill, Professor A. Hutchinson, Professor J. E. Littlewood, Professor E. Mellanby, Professor R. Robinson, Dr. N. V. Sidgwick, Professor A. G. Tansley, Professor D'A. W. Thompson, Dr. W. Trotter and Mr. G. U. Yule.

IN connection with the recent award of a Nobel Prize to Sir Charles Sherrington and Professor E. D. Adrian, *Nature* states that since the foundation of the Nobel Trust in 1901, seventy-six prizes for physics, chemistry and physiology and medicine have been awarded, of which fifteen have gone to scientific men working in Great Britain. The latter are distributed as follows: *Physics:* Lord Rayleigh, 1904; Professor, now Sir, J. J. Thomson, 1906; Professor, now Sir, William Bragg, jointly with Professor W. L. Bragg, 1915; Professor C. G. Barkla, 1917; Professor C. T. R. Wilson, 1927, jointly with Professor A. H. Compton, University of Chicago; Professor O. W. Richardson, 1928. *Chemistry:* Sir William Ramsay, 1904; Professor Ernest, now Lord, Rutherford, 1908; Professor Frederick Soddy, 1921; Dr. Francis W. Aston, 1922; Professor Arthur Harden, 1929, jointly with Professor von Euler. *Physiology and Medicine:* Sir Ronald Ross, 1902; Professor Archibald V. Hill, 1922, jointly with Professor Otto Meyerhof; Sir Frederick Gowland Hopkins, 1929, jointly with Dr. Eijkman; Sir Charles Sherrington and Professor E. D. Adrian, 1932.

AT the University of Chicago, Professors E. H. Moore and H. E. Slaught have retired from active service in the department of mathematics, with the title of professor emeritus. Both have been in the university since it opened its doors in the autumn of 1892. Professor Moore was acting head of the department from 1892 to 1896, and head from 1896 until 1931, when he gave up his administrative duties. He was one of the founders of the Chicago Section of the American Mathematical Society and one of the first editors of its *Transactions*. He has been president of the society and of the American Association for the Advancement of Science, and for many years an associate editor of the *Proceedings* of the National Academy of Sciences. Professor Slaught was a fellow in mathematics at the University of Chicago from 1892 to 1894, and was one of the first group of graduate students who received the Ph.D. degree in mathematics from the university. From 1894 on he has been a member of the staff of the department of mathematics. He was a central figure in the found-

ing of the Mathematical Association of America, and has been for many years a managing editor of its official journal, *The American Mathematical Monthly*. He has served the American Mathematical Society in numerous other capacities and has been president of the Mathematical Association. The correspondent who sends this information writes: "For an adequate record of the services of such men as these, books, not paragraphs, are needed."

RITTER HALL is the name that has been given to the new laboratory building of the Scripps Institution of Oceanography at La Jolla, California, in honor of Dr. William Emerson Ritter, first director of the institution. A suitable inscription, carved in raised letters on a plaque of Mexican mahogany, has been placed in the entrance hall. Dr. Ritter was the first professor of zoology at the University of California, and since his retirement as director of the Scripps Institution has returned to Berkeley, where he is continuing his zoological researches.

DR. FRANK R. LILLIE, professor of embryology and dean of the division of the biological sciences, has been appointed vice-chairman of the faculty of the School of Medicine of the Division of Biological Sciences of the University of Chicago.

THE Seismograph Station of the University of Pittsburgh has recently been transferred to the department of geology, of which Professor H. Leighton is head. H. Morgan Rutherford, of the University of Texas, has been appointed assistant in geology and will be in direct charge of the station.

HAROLD S. OLCOTT, last year National Research fellow in medicine at the department of physiological chemistry, Yale University, has been appointed research associate in biochemistry at the State University of Iowa.

TYRRELL H. WERNER, for the past two years research assistant in chemistry at Harvard University, has become research associate in chemistry at the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine.

AT the University of Manchester, Dr. John Hollingworth has been appointed to succeed Professor Miles Walker, who has held the chair of electrical engineering at the university and the College of Technology since 1912.

AS a special tribute, the Clinical and Pathological Society, Denver, elected Dr. Robert Levy president for the third time on the fortieth anniversary of its organization. He was the first president of the society and was again president in 1922, the thirtieth anniversary of the society.

DR. J. C. FUTRALL, president of the University of Arkansas, was elected president of the Association of Land Grant Colleges at the recent convention of the association at Washington, D. C. T. O. Walton, president of the Agricultural and Mechanical College of Texas, was elected vice-president; Thomas P. Cooper, dean of the University of Kentucky College of Agriculture, was again named secretary-treasurer, and President R. A. Pearson, of the University of Maryland, chairman of the executive committee.

AT the Philadelphia meeting of the American Academy of Physical Therapy, officers were elected as follows: *President,* Dr. William L. Clark, Philadelphia; *Vice-president,* Dr. Frank H. Krusen, Philadelphia; *Secretary-Treasurer,* Dr. Arthur H. Ring, Arlington, Massachusetts; *Assistant Secretary-Treasurer,* Dr. Robert C. Hughes, Paoli, Pennsylvania.

AT a meeting of the New Mexico Association for the Advancement of Science (affiliated with the American Association for the Advancement of Science), held in Roswell, N. M., on November 3 and 4, the following were elected as officers for 1933: *President,* Dr. Sterling B. Talmage, professor of geology at the New Mexico School of Mines, Socorro; *Vice-president,* Dr. Hoyt C. Graham, professor of chemistry at the State Teachers College, Silver City; *Secretary,* Eldred R. Harrington, of the Albuquerque High School, Albuquerque; *Treasurer,* Reginald Fisher, of the New Mexico Museum at Santa Fé.

DR. C. MAX BAUER, formerly with the United States Geological Survey, has been appointed naturalist in charge of research and education in Yellowstone National Park.

DR. HERBERT M. EVANS, professor of anatomy at the University of California, is spending a year working as a guest of the Rockefeller Institute of Medical Research, New York.

DR. H. B. VAN DYKE, professor of pharmacology in the University of Chicago, has sailed for China, where he is on the staff of the Peiping Medical College.

DR. WALTER N. KOELZ, Asiatic expert from the University of Michigan Museum, will spend the winter beyond the outer passes of the Himalayas, in the Kangre Valley, in order to make a study of the life and habits of the people and bring back examples of their art work and handicraft, as well as plant and animal specimens.

DR. FRANK R. LILLIE, professor of embryology at the University of Chicago, will deliver the Charles Sumner Bacon Lectures at the College of Medicine of the University of Illinois on December 7 and 8.

His general subject will be "Problems in the Biology of Sex." The titles for the separate lectures are "Biology of the Ovary in Birds" and "The Effects of the Female Sex Hormone in Birds and the Nature of Sex Characters."

THE speaker for the first meeting of the Sigma Xi Club of the University of Florida on November 2 was Dr. O. L. Tinklepaugh, of the Yale Anthropoid Station, Orange Park, Florida. Dr. Tinklepaugh discussed some aspects of reproduction in primates and closed with a motion picture film.

SIR JAMES C. IRVINE, principal of the University of St. Andrews, Scotland, an authority on the chemistry of the sugars, lectured at Yale University on November 14 on "New Developments in the Chemistry of Starch and Cellulose."

SIR ARTHUR EDDINGTON gave an address on "Physics and Philosophy" under the auspices of the British Institute of Philosophy at University College, London, on November 15. The chair was taken by Bertrand Russell.

THE eighth annual Norman Lockyer Lecture of the British Science Guild was delivered by Sir Frank Smith in London, on November 22. He spoke on "Industrial Research and the Nation's Balance Sheet."

AS reported in the *Journal* of the American Medical Association, the Henry M. Hurd Memorial Building, the Osler Medical Clinic and the Halsted Surgical Clinic, representing a direct outlay of nearly $2,000,000 in addition to an endowment of more than $3,000,000, were dedicated at the Johns Hopkins Hospital, on October 28. An anonymous donor provided the endowment. Dr. Joseph S. Ames, president, the Johns Hopkins University, presided at the dedication. Dr. John M. T. Finney, professor of clinical surgery, gave the Halsted Surgical Clinic dedicatory address, and Dr. William S. Thayer, professor emeritus of medicine, that for the medical clinic. Mr. Henry D. Harlan, president of the board of trustees, gave a eulogy of Dr. Hurd. The building, housing the two clinics, was completed at the Johns Hopkins Hospital last year at a cost of $1,740,000, of which $500,000 was provided by the General Education Board. The clinics are memorials to the late Dr. William S. Halsted, first professor of surgery, and the late Sir William Osler, first professor of medicine at the Johns Hopkins University School of Medicine.

THE Cambridge Philosophical Society celebrated the centenary of the grant of a Royal Charter by a dinner on November 5 held in the hall of Pembroke College. The Master of Pembroke, president of the society, was in the chair. The chancellor of the university, the president of the Royal Society, Prince George and representatives of many scientific societies were present. The toast of the society was proposed by the Prince and replied to by the president. The master of Trinity College, Sir J. J. Thomson, proposed the health of the guests and there were replies by the chancellor and Sir William Bragg.

THE American Soil Survey Association and the American Society of Agronomy held their sessions at Washington, D. C., from November 15 to 18. Members of the two associations discussed soil and crop practices and problems of the soil survey which has covered more than half the arable lands of the United States. In a joint program of the two associations, on November 17, problems of mutual interest, such as plant growth and crop yields in relation to soil fertility and soil type, were discussed. There was a series of discussions on the origin, characteristics and agricultural possibilities of the leading soil families of the United States, including the podsols of New England, the brown forest soils of the Northern States, the prairie soils of the West, and the solonetz soils of California. Dr. Curtis F. Marbut, chief of the division of soil survey of the Bureau of Chemistry and Soils, spoke on the relation of the soil survey to the work of the U. S. Department of Agriculture in developing a land classification upon which to base a federal program for agriculture. Dr. H. G. Byers, of the Bureau of Chemistry and Soils, opened the discussion on the chemical constitution of soil colloids. Several bureaus of the government and many state colleges and experiment stations were represented at the meetings.

THE forty-eighth annual meeting of the Association of Official Agricultural Chemists was held in Washington, from October 31 to November 2. Members of the Bureau of Chemistry and Soils, the Food and Drug Administration, the Bureau of Animal Industry and of the faculties of state colleges and experiment stations, joined in consideration of various phases of agricultural chemistry. Dr. A. F. Woods, director of scientific work of the department, addressed the opening session, welcoming the association to Washington on behalf of the Department of Agriculture. Discussions at the meeting were concerned principally with the practical application of chemistry to foods, drugs, beverages, feedstuffs, insecticides and fertilizers, in which the association has played an important part in the development of new methods of research and in assisting the effort of the department toward purity and honesty in manufacture. The association elected the following officers for the coming year: J. H. Kellogg, Pennsylvania State Department of Agriculture, Harrisburg, *president;* R. Harcourt, Guelph, Canada, *vice-president,* and W. W. Skinner,

U. S. Bureau of Chemistry and Soils, Washington, D. C., *secretary-treasurer.*

THE annual agricultural outlook conference for the Southern States was held at Atlanta, Georgia, from November 8 to 11. Representatives of the department and of most of the agricultural colleges, experiment stations and extension services in the South attended. Outlook reports will be issued on agricultural credit and demand, tobacco, fruits, truck crops, potatoes, rice, sugar, cotton, poultry, dairy products, hogs, beef cattle, sheep, feed crops, farm labor, farm equipment and fertilizers. On the closing day there were round-table discussions of outlook extension and farm-management extension work, and reports on developments in marketing and cooperative purchasing and on the effects of changes in transportation upon marketing problems.

A GARDEN of native plants has this year been established in the part of the alluvial fan directly behind the Yosemite Museum, Yosemite National Park. Planting was begun last April on a two-acre plot, flagstone walks were installed, and a spring developed to supply a running stream and pools. The work was made possible by a gift of $4,000 by Miss Marjorie Montgomery Ward.

MRS. CARLOS F. MACDONALD, widow of the late Dr. Carlos F. MacDonald, a distinguished psychiatrist, of New York, died in Atlantic City on November 5. On May 7, 1928, Mrs. MacDonald established a trust fund, in memory of her husband, to be known as the "Carlos Frederick MacDonald Research Fund," and held in trust by The Girard Trust Company. The income of this fund is used by the Wistar Institute in the promotion of biological research and the publication of research in any Wistar Institute journal. By Mrs. MacDonald's will this fund eventually will be very greatly increased.

AT a recent meeting of the council of the Royal College of Surgeons it was announced that Sir Buckston Browne had now completed his gift of £100,000 for building and endowing the Surgical Research Farm at Downe, Kent.

THE University of Oslo has received a gift of 20,000 kronen from a Norwegian chocolate factory for the foundation of a chair on the physiology of nutrition.

DISCUSSION

EMANUEL SWEDENBORG ON THE THEBESIAN SYSTEM OF THE HEART

THE comparative recency of the published appreciations of Retzius,[1] Ramström,[2] Nordenskiöld[3] and others, shows how long the world at large had been content to permit the luster of Swedenborg the theologian to obscure its estimate of Swedenborg the biological thinker. Pioneer in many fields of the intellect, this gifted physicist and engineer (1688–1772) turned in middle life to the intensive acquisition of the anatomy and physiology of his day. Making full allowance for the tendency to mystical interpretation during this transitional phase of his career, Swedenborg's contributions to biological theory—especially neurological—were noteworthy, and to a degree that has failed of adequate notice even within the present century.

His work on the circulation is essentially unknown to science. Of peculiar interest to the writer has been that part dealing elaborately with the coronary system; for it is here discovered[4] that Swedenborg was the first to conceive of the Thebesian vessels (and their foramina in the inner walls of the heart) as subserving an entrant, nutritional function. To Swedenborg the coronary arteries—on evidence which the present day must find it hard to attach to so subversive a conclusion—are not arteries at all, but veins tributary to the aorta; hence his recourse to the only other apparent source of blood supply to the heart muscle—the *ductus carnosi* of Vieussens, later known as *venae Thebesii.*[5]

In the revival of discussion, with persistent conflict of evidence,[6] as to the rôle of these channels, both normal and vicarious, the contention of Swedenborg forms an appropriate background. It is pictured in his own words, as follows: "For these ducts are so many small and proper arteries of the heart, and have their own small and proper ventricles or chambers, which we have denominated lacunae" [the intertrabecular crypts].[7]

A recent editorialist[8] has drawn attention to the

[1] Gustav Retzius, *Verhandl. d. Anat. Gesellsch.*, 1903.
[2] Ramström, "Emanuel Swedenborg's Investigations in Natural Science," etc., Uppsala, 1910.
[3] Nordenskiöld, "The History of Biology," transl. by Eyre, N. Y. and Lond., 1928.
[4] I owe my first information on the subject (1929) to the courtesy of Dr. John P. Sutherland, of Boston.
[5] The origin and development of Swedenborg's theory is discussed, with bibliographical notes, in the *Annals of Medical History*, N. S., 4: 434, 1932.
[6] For divergence of view *cf.* Wearn, *Jour. Exper. Med.*, 47: 293, 1928; Batson and Bellet, *Am. Heart Jour.*, 6: 206, 1930; Stella, *Jour. Physiol.*, 73: 36, 1931; 75: 18 P, 1932; Löhner, Pfl. Arch., 228: 457, 1931.
[7] "Œconomia Regni Animalis," Amster., 1740–48, I, 412. The extract follows Clissold's translation.
[8] *Jour. A. M. A.*, 98: 233, 1932.