SCIENTIFIC NOTES AND NEWS

THE House of Representatives has passed a bill conferring the Congressional Medal of Honor on Major General A. W. Greely, the Arctic explorer. General Greely celebrated his ninety-first birthday on March 27.

THE New York-New Jersey Alumni Association of the Johns Hopkins University will hold a dinner at the Hotel Plaza, New York City, on the evening of April 5 in honor of Dr. Joseph S. Ames, who retires as president of the university in June, and of Dr. Isaiah Bowman, president-elect, now chairman of the National Research Council and director of the American Geographical Society of New York.

DR. E. D. MERRILL, director of the New York Botanical Garden, and Dr. A. B. Stout, director of the laboratories of the garden, have been elected honorary fellows of the British Royal Horticultural Society and also honorary life members of the Pennsylvania Horticultural Society.

THE Hillebrand Prize, awarded annually by the Washington Chemical Society for the best paper read before it during the preceding year, was presented at the Cosmos Club on March 14 to Frederick Rossini, of the Bureau of Standards, for his paper on "The Thermal Decomposition of Alcohols."

THE gold Moulton Medal of the British Institution of Chemical Engineers for 1934 has been awarded to J. Davidson Pratt and G. S. W. Marlow, for a paper entitled "Legal Pitfalls for the Chemical Engineer." The Junior Moulton Medal in silver, for the best paper of the year read before the graduates and students' section of the institution, was awarded to D. Gordon Bagg for his paper entitled "Determination of the Efficiency of a Multi-Stage Washer."

THE Paris Academy of Sciences has awarded the Jean Dagnan-Bouveret prize of 15,000 francs to Drs. Auguste Charles Marie and Paul Remlinger for their work on rabies, and the Lacage prize of 10,000 francs to Professor Portier for his physiological studies.

Nature states that the University of Toronto has awarded the Charles Mickle fellowship for 1935 jointly to Dr. Edward Mellanby and Mrs. May Mellanby. The fellowship is endowed under a bequest by the late Dr. W. J. Mickle, and is awarded annually "to that member of the medical profession who is considered by the council of the Faculty of Medicine of the University of Toronto to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science."

W. A. S. CALDER, delegate director of the general chemicals group of Imperial Chemical Industries, Limited, has been elected president of the British Society of Chemical Industry for the year 1935–36.

OFFICERS of the British Institute of Chemistry were elected at the annual meeting on March 1 as follows: *President,* Professor Jocelyn Field Thorpe; *Vice-presidents,* W. J. A. Butterfield, Sir George Clayton, Dr. A. E. Dunstan, F. G. Edmed, Dr. H. H. Hodgson and W. H. Roberts; *Honorary Treasurer,* P. H. Kirkaldy.

DR. BENJAMIN LINCOLN ROBINSON has resigned from the Asa Gray professorship of systematic botany and the curatorship of the Gray Herbarium of Harvard University. His resignation, though accepted by the president and fellows of Harvard College at the meeting on March 18, is to date from September 1, from which time he has been appointed Asa Gray professor of systematic botany and curator of the Gray Herbarium, emeritus. As he completes his service at the close of the present academic year, Dr. Robinson will have held the curatorship of the Gray Herbarium for forty-three years and will have occupied the endowed chair connected with it for thirty-five years. Dr. Robinson will continue his monographic studies of the *Compositae-Eupatorieae* on which he has long been engaged.

F. TRUBEE DAVISON, president of the American Museum of Natural History of New York City, whose term as alumni fellow of the corporation of Yale University expires in June, has been nominated unanimously for reelection.

DR. WILLIAM T. BOVIE, formerly assistant professor of biophysics at the Harvard Medical School and a member of the Harvard Cancer Commission, is continuing his work on the biological effects of rays in the Shannon Physical Laboratory at Colby College.

DR. REGINALD M. ATWATER, for eight years health commissioner of Cattaraugus County, N. Y., has been appointed executive secretary of the American Public Health Association. The appointment became effective on March 15.

DR. LEONARD GREENBURG, acting health officer of New Haven, has been placed in full charge of the department of health. He succeeds Dr. John L. Rice, who left New Haven to become health officer of New York City.

PROFESSOR LEO M. CHRISTENSEN, of the department of chemistry at Iowa State College, has resigned in order to join the staff of the Chemical Foundation. His work will be connected with the production of alcohol from farm products and the formulation of legislation fostering its use.

WILLIAM BRIDGES, lately of the New York *Sun*, has been appointed editor and curator of publications at the New York Zoological Society. He fills the vacancy left by the retirement on December 31 of Elwin R. Sanborn.

DR. ALFRED E. EMERSON, professor of zoology at the University of Chicago, left on March 22 for the Panama Canal Zone, where he plans to analyze the effect of changes of temperature, humidity and light upon the social life of termites. His headquarters will be on the island of Barro Colorado in Gatun Lake, Canal Zone, where the National Research Council maintains a biological station.

DR. L. J. KLOTZ, plant pathologist at the Citrus Experiment Station of the University of California at Riverside, has been granted five months' leave to study disease-resistant plants. He left Riverside on March 25 for Michigan State College, where he plans to carry on this research.

DR. CLARENCE A. NEYMANN, associate professor of psychiatry at Northwestern University, sailed on March 16 to give a special course of lectures at Liége, Louvain, Brussels and Ghent. He will speak also before the Royal Medical Society of London.

DR. A. RAYMOND DOCHEZ, professor of medicine of the College of Physicians and Surgeons of Columbia University, is visiting at the School of Tropical Medicine, San Juan, Puerto Rico, where he gave a lecture before the faculty and staff of the school and before the physicians of the island on "Influenza and Acute Infections of the Respiratory Tract."

THE Alpha-Beta Chapter of Sigma Pi Sigma, honorary physics society, at Syracuse University, recently sponsored two open meetings which were addressed by Dr. Harlow Shapley, director of the Harvard College Observatory, and Dr. W. F. G. Swann, director of the Bartol Research Foundation.

DR. RAYMOND PEARL, professor of biology in the School of Hygiene and Public Health of the Johns Hopkins University, delivered an address before the Washington Academy of Sciences on March 21. He spoke on "Biology and Human Trends."

THREE lectures on "Recent Progress in Astronomy" were given during March by Dr. Samuel Alfred Mitchell, director of the Leander McCormick Observatory of the University of Virginia, at the Wagner Free Institute of Science, Philadelphia. The titles of the separate lectures were "The Sun and Its Spectrum," "A Trip to the South Seas to Observe a Total Eclipse" and "The Distances of the Stars."

PROFESSOR H. RIES, of Cornell University, delivered the Orton Fellowship Lecture at the recent convention of the American Ceramic Society. He spoke on "Geology in Clay Research."

DR. CARL J. P. SKOTTSBERG, of Göteborg, Sweden, visiting professor at the Osborn Botanical Laboratory of Yale University, gave an illustrated lecture before the department of botany of Wellesley College on March 15 on "A Survey of Robinson Crusoe's Island."

THE Stuart McGuire lectures at the Medical College of Virginia will be given by Dr. Gunnar Nyström, professor of surgery, Uppsala University, Sweden, on the evenings of April 29 and 30. The subjects of the lectures will be "Embolism of the Arteries of the Extremities" and "Pulmonary Embolism."

DR. JOSEPH NEEDHAM, of the University of Cambridge, delivered two lectures on the Mead-Swing Foundation at Oberlin College on March 27 and 28, on "The Continuity of Chemical and Morphological Order."

THE psychologists of New York State, outside of the Metropolitan area, will hold their annual spring meetings at Colgate University, Hamilton, N. Y., on April 12 and 13. Dr. Fred S. Keller is in charge of local arrangements. Dr. B. F. Skinner, of Harvard University, will be the speaker at the dinner meeting.

THE dates for the May and June soirées of the Royal Society have been altered to Friday, May 3, and Friday, June 14.

THE tenth congress of the International Society of Surgery will be held in Cairo from December 30, 1935, to January 4, 1936, under the presidency of Professor A. von Eiselsberg, of Vienna.

THE seventh International Congress on Industrial Accidents and Diseases will be held at Brussels, Belgium, from July 22 to 27. The American Committee of the congress is under the chairmanship of Dr. Fred H. Albee, New York, for the Section on Accidents and that of Dr. Emery R. Hayhurst, Columbus, Ohio, for Industrial Diseases.

THE British Medical Association will hold its one hundred and third annual meeting in Melbourne, Australia, during the week beginning on September 9, under the presidency of Sir Richard Stawell, consulting physician to the Melbourne Hospital. The *Journal* of the British Medical Association reports that the sectional sessions for scientific and clinical work will be held on Wednesday, Thursday and Friday, September 11, 12 and 13. The annual representative meeting for the transaction of medico-political business will take place in London at the association's house on Friday, July 19, and following days. Members traveling to Australia through the United

States will sail for New York from Southampton on Saturday, July 27; if traveling by the Canadian route to San Francisco, they will sail for Montreal from Liverpool on July 26, or from Glasgow on July 27. The honorary local general secretary for this year's annual meeting is Dr. J. P. Major, Medical Society Hall, East Melbourne, Victoria.

THE trustees of the Surdna Foundation announce that Wesleyan University and ten welfare and religious institutions in Yonkers share in the first large distribution from the income from the fortune of the late John E. Andrus. The bequests amounted to $1,092,500, only a portion of the income of the foundation, which is said to be one of the most largely endowed charitable organizations in the world. Wesleyan University receives $300,000. Mr. Andrus, who died on December 26, at the age of ninety-three years, named the foundation by adopting the reversed spelling of his name.

THE National Zoological Park will receive an allotment of $680,000 from PWA funds. It is planned to build an addition to the bird house, a new elephant house and a house for small mammals, with special accommodations for apes. It is also planned to provide a machine shop.

THE private medical library of the late Dr. Bailey K. Ashford has been presented by his family to the School of Tropical Medicine at San Juan, Puerto Rico. This library contains a large collection of books, periodicals and pamphlets, together with valuable historical data on sprue, anemia and hookworm, in which fields Dr. Ashford had made notable contributions.

THE University of Cambridge has accepted an offer from the Department of Scientific and Industrial Research of the sum of £2,300 for building and equipping the extension to the Low Temperature Research Station on its southern side. It is to be used for scientific research and in the first instance for research in problems arising out of the preservation and handling of foodstuffs.

DISCUSSION

WHAT DO WE MEAN BY A BACTERIAL LIFE CYCLE?

BACTERIOLOGISTS have for some years been engaged in a vigorous, and sometimes slightly acrimonious, discussion of the question whether bacteria do or do not exhibit phenomena associated with a "life cycle." In a case of this kind, one always suspects that facts have been obscured by words. Arguments are generally concerned with words and ideas. Facts need not be argued about; they can be settled by observation.

In the present case, the facts are reasonably clear. Almost all bacteriologists will now acknowledge that many types of bacteria may at times exhibit morphological variants which differ rather widely from the forms most commonly observed in cultures. These variants may be swollen or branched or spherical, when the normal form is a regular rod. They may be larger than normal. Very frequently they are much smaller than normal. Furthermore, it is a well-established fact that some of these bizarre cells are not "involution forms"—if we mean by that term cells which are degenerating and necessarily doomed to perish. Many such abnormal cells, particularly the tiny coccoid forms of rod-shaped bacteria, have been shown to be viable and to reproduce the original type of organism. If by a life cycle we mean the occurrence of cells having a form different from that commonly observed in the species but capable of reproduction, then many bacteria have a life cycle. There is no essential difference between such a phenomenon and the familiar formation of endospores (except that the endospore has a special degree of resistance to unfavorable environmental conditions which many of the more recently described morphological variants lack).

Those who contend that bacteria lack a life cycle define the term more strictly. They consider that a "life cycle" must involve a certain inevitable and repetitive sequence of stages. In this sense they maintain that the bacteria do not possess a life cycle. If one transfers a culture in the phase of logarithmic growth to a fresh medium of the same kind, experience shows us that the form and size of the cells remain strikingly constant; and we have no reason to doubt that such a process can be continued indefinitely. A "cycle," according to Murray, means "a recurrent period (of events, phenomena, etc.)." Those who object to the life cycle theory may rightly maintain that such experiments exclude the existence of recurrent periods of varying morphology, due to some inherent tendency of the bacterial cells.

It is precisely, however, in this tacit assumption that a life cycle must be free from any environmental influence that there lies another dangerous pitfall of definition. If we allow that repetitive changes may directly result from environmental conditions and yet may constitute a life cycle, the balance of argument swings in favor of the "cyclists." If, instead of transferring a colon bacillus from one culture tube to another in the logarithmic phase of growth, we leave it