

## U.S. NATIONAL ACADEMY OF SCIENCES

## MEDALS AND AWARDS

THE following awards by the U.S. National Academy of Sciences have been announced: The James Craig Watson Medal, to Prof. Yusuke Hagihara, formerly professor of astronomy in the University of Tokyo and director of the Tokyo Astronomical Observatory and later professor in Tohoku University, a post from which he has just retired. Prof. Hagihara is best known for his original contributions to the field of celestial mechanics, the study of celestial bodies in motion. Perhaps his most significant work has been his paradigms for the general problem of the stability of motion—a basic question in celestial mechanics. Prof. Hagihara's mathematical talents have also been turned to one of astronomy's most vexing puzzles—the restricted problem of three bodies. Astronomers have long sought, without complete success, to calculate the relative motions of three bodies when given the positions and motions of the bodies at a point in time. Celestial mechanics is not the only astronomical field of interest in which Prof. Hagihara has gained distinction. He has also made original contributions to theoretical astrophysics, the theory of relativity, and solar eclipses. A prodigious scientific author, he has published more than twenty-five papers and monographs on celestial mechanics alone, and is the author of ten books on various astronomical subjects.

The Agassiz Medal, in recognition of original contributions to the field of oceanography, to Dr. Anton Frederik Bruun, of the University of Copenhagen. Dr. Bruun is a leading authority on life in the deep sea, and has won similar distinction as an effective leader of oceanographic expeditions. In addition to the many expeditions in which he has participated, Dr. Bruun led an expedition during 1945–46 to tropical West African waters, and, during 1950–52, headed the *Galathea* expedition that circled the globe in a study of the ocean depths. At present, he is directing an expedition to the South China Sea, sponsored jointly by the Scripps Institution of Oceanography and the International Co-operation Administration. It was the *Galathea* expedition that earned Dr. Bruun especial acclaim for his ability to enlist scientists from many nations in a co-operative research programme. Although a voluminous series of reports has already resulted from the *Galathea* findings, it is anticipated that additional reports will be published for many years to come. One of the expedition's most significant achievements was its trawling of the approximately 34,500-ft. deep Philippine Trench, just east of the Islands.

Most dramatic finding of the *Galathea* expedition was the discovery of a 'living fossil', the mollusc *Neopilina*, the nearest relatives of which were thought to have become extinct some three hundred million years ago (*Nature*, 179, 413; 1957). During 1926–33. Dr. Bruun was engaged in oceanographical research as a member of the Danish Fisheries Commission. In 1933 he was appointed curator of molluscs in the Zoological Museum of the University of Copenhagen. He has also held appointments at the Carlsberg Laboratory, the Marine Biological Laboratory, and the Danish Aquarium.

The Kimber Genetics Award, to Prof. George Wells Beadle, professor of biology and chairman of the division of biology at the California Institute of Technology. Prof. Beadle's specific research interests have been, successively, the genetics and cytology of maize; the genetics of *Drosophila melanogaster*; the chemistry and the biology of eye pigment in *Drosophila*; and the chemical genetics of *Neurospora crassa*, or red bread mould. Perhaps the most significant result of his work has been the finding of new ways to trace the action of genes. The best-known of these techniques is the use of *Neurospora* to follow the steps by which genes influence the synthesis of vitamins, amino-acids, and other basic ingredients of life. This simple and ingenious tool was developed by Dr. Beadle in collaboration with Dr. Edward L. Tatum and others. Prof. Beadle has occupied his present chair at the California Institute of Technology since 1946. Previously, he was professor of biology at Stanford University during 1937–46, and assistant professor of genetics at Harvard University during 1936–37. Prof. Beadle has been elected a foreign member of the Royal Society of London this year.

The J. Lawrence Smith Medal, for outstanding investigations of meteoric bodies, has been awarded to Dr. E. J. Öpik (*Nature*, April 23, p. 280).

The Public Welfare Medal of the National Academy of Sciences has been awarded for "eminence in the application of science to the public welfare" to Dr. Alan T. Waterman, director of the National Science Foundation. Established in 1913 by Mrs. Helen Hartley Jenkins in honour of her father, Marcellus Hartley, the Public Welfare Medal is considered to be the most distinguished of the Academy's medals. It is unique among them in that it is awarded for outstanding public service in the uses of science, rather than for achievements within a particular scientific discipline.

## SIXTH-FORM SCIENCE AS A PREPARATION FOR UNIVERSITY WORK

IN March 1958 the Senate and Council of the University of Birmingham approved a proposal for an inquiry to be held into the suitability of the General Certificate of Education (Advanced Level) syllabuses in science as a preparation for direct entry into first-degree courses in the Faculty of Science.

This useful report, now published, was financed by the Gulbenkian Trustees. The subjects under consideration were biology, chemistry, geography and geology, mathematics and physics. The Panel began its work by considering what sixth-form training would be most valuable to a pupil who