NAS Elects Members

➤ THE NATIONAL ACADEMY of Sciences announced the election of 42 new members in recognition of their distinguished and continuing achievements in original research. The election took place during the 103rd annual meeting of the Academy in Washington, D.C.

The newly elected members are:

Paul Berg, biochemistry, Stanford University School of Medicine; Jacob Bigeleisen, chemist, Brookhaven National Laboratory; Ronald Breslow, chemistry, Columbia University; Bernard Beryl Brodie, pharmacology and physiology, National Heart Institute and George Washington University and Georgetown University; Theodore L. Cairns, basic sciences, E. I. du Pont de Nemours and Company, Inc.; Elias J. Corey, chemistry, Harvard University; Horace R. Crane, physics, University of Michigan; Kingsley Davis, sociology, University of California, Berkeley; Howard W. Emmons, mechanical engineering, Harvard University; Val L. Fitch, physics, Princeton University; Richard L. Garwin, physics, Watson Scientific Computing Laboratory, IBM Corporation, and Columbia University; Norman H. Giles. genetics, Yale University; Edward L. Ginzton, applied physics and electrical engineering, Stanford University and president, Varian Associates; Andrew M. Gleason, mathematics, Harvard University; Clifford Grobstein, biology, University of California, San Diego; Jacob G. Harrar, president, Rockefeller Foundation; George K. Hirst, director Public Health Research Institute of the City of New York and microbiology, New York University College of Medicine; Elvin A. Kabat, microbiology, Columbia University College of Physicians and Surgeons and Presbyterian Hospital; Arthur R. Kantrowitz, director, AVCO-Everett Research Laboratory, vice president and director, AVCO Corporation and professor, Massachusetts Institute of Technology.

Also, Irving Kaplansky, mathematics, University of Chicago; Har G. Khorana Institute for Enzyme Research, University of Wisconsin; Edward F. Knipling, director, entomology research division, Agricultural Research Service, U.S. Department of Agriculture; Daniel E. Koshland Jr., biochemistry, University of California, Berkeley and Rockefeller University; Wilton M. Krogman, physical anthropology, Graduate School of Medicine and the Evans Institute of Dentistry, University of Pennsylvania and director, Philadelphia Center for Research in Child Growth; Robert B. Leighton, physics, California Institute of Technology; Philip Levine, director, immunohematology division, Ortho Research Foundation; Vernon B. Mountcastle, physiology, Johns Hopkins School of Medicine; Nathan M. Newmark, civil engineering, University of Illinois, Donald E. Osterbrock, astronomy, University of Wisconsin; Ray D. Owen, division of biological sciences, California Institute of Technology; Francis J. Pettijohn, geology, Johns Hopkins University; George C. Pimentel, chemistry, University of California, Berkeley; Efraim Racker, nutrition and physiology, Public Health Research Institute of the City of New York; Floyd Ratliff, psychology and biophysics, Rockefeller University; Harold A. Scheraga, chemistry, Cornell University; Jack Steinberger, physics, Columbia University; Hans E. Suess, geochemistry, University of California, San Diego; Earl W. Sutherland Jr., physiology, Vanderbilt University; Stanislaw M. Ulam, research advisor, director's office, Los Alamos Scientific Laboratory; Owen H. Wangensteen, surgery, University Hospitals and University of Minnesota; Samuel I. Weissman, chemistry, Washington University; and Charles Yanofsky, biology, Stanford University.

Foreign Associates

Ten distinguished foreign associates also were elected to membership. They are:

Hanes Alfvén, theoretical electrodynamics and mathematics, Royal Institute of Technology, Stockholm, Sweden; P. M. S. Blackett, president, The Royal Society, London; Sir John Eccles, physiology, Australian National University, Canberra; Manfred Eigen, Max Planck Institute of Theoretical Chemistry, Göttingen, Germany; Ephraim Katchalski, biophysics, Weizmann Institute of Science, Rehovoth, Israel; Konrad Lorenz, director, Max Planck Institute for Behavioral Physiology, Bavaria, Germany; Jean Pieget, psychology, Univeristy of Geneva, Switzerland; Bruno Sander, mineralogy, and petrography, University of Innsbruck, Austria; Pol Swings, director, Institute of Astrophysics, University of Liège, Belgium; and Hiroshi Tamiya, Institute of Applied Microbiology, University of Tokyo, Japan.

Election as a foreign associate is one of the highest honors that can be bestowed by the Academy on a scientist who is not a citizen of the United States.

At the meeting, also, Dr. Harrison Brown, professor geochemistry at the California Institute of Technology was elected to a second four-year term as foreign secretary of NAS, and four new members of the Council of NAS who will begin three-year terms on July 1, were named. They are:

Herbert E. Carter, University of Illinois; Jesse L. Greenstein, Mt. Wilson and Palomar Observatories, California Institute of Technology; Wallace O. Fenn, University of Rochester; and Katherine Esau, University of California, Santa Barbara.

The Public Welfare Medal of the National Academy of Sciences was awarded to Secretary of Health, Education and Welfare, John W. Gardner, "whose writings and works during the past decade have given impetus and direction to the revolution in U.S. education." The medal awarded "for eminence in the application of science to the public welfare," was presented by Dr. Frederick Seitz, president of NAS.

The National Academy of Sciences is a private organization of distinguished scientists and engineers devoted to the furtherance of science and its use for the general welfare. The Academy was established in 1863 by a Congressional Act of Incorporation signed by Abraham Lincoln.

PHYSIOLOGY

Moth Ears Give Clues To Survival Systems

➤ THE ELEMENTARY struggle of a moth for survival may lay the groundwork for understanding more complicated survival systems in higher animals, the National Academy of Sciences was told.

Dr. Kenneth D. Roeder of Tufts University, department of biology, guided scientists attending the annual Academy meeting on a trip through the moth's nervous system as it reacts to danger—in this case, the chirps of an insect-eating bat.

The moth's sense of hearing is a good system for study because a single sense cell in each ear seems to be all that is required to convey information about the bat's sonar signals or chirps.

Two large fibers connect the two cells to neurons in the central nervous system where information is transformed.

Many insects have these "giant fibers" that seem to be related only to handling danger signals and evasive maneuvers.

In man the picture is so complex that comparison is difficult. However, Dr. Roeder noted two interesting parallels. The moth takes about a tenth of a second to hear the bat's sonar signals and dodge. Man reacts to a pistol shot in roughly the same time. Also the behavior of a moth's nerve cell is not very different from man's.

After the sonar signal reaches the moth's central nervous system, it passes through a series of "doors"—the neurons. Each neuron is opened by particular keys or elements in the signal such as loudness or duration.

Once the key has been used, the neuron discards it and passes on more select information. The signal is thus narrowed down to its most essential component and the moth dodges to safety.