

early Cambrian organisms, *Archaeocyatha*.

Dr. Felix Andries Vening Meinesz, professor of geodesy and geophysics in the University of Utrecht and President of the Netherlands Geodetic Commission, was awarded the Agassiz gold medal and honorarium for 1947 for his contributions to oceanography. Prior to the invention of his multiple pendulum

apparatus, measurements of gravity could not be accurately determined on unstable ground.

The Henry Draper medal for 1947 was conferred on Dr. Hans Albrecht Bethe, professor of physics at Cornell University, for his quantitative solution for the source of the tremendous flow of energy from the sun and stars.

Science News Letter, May 8, 1948

GENERAL SCIENCE

New Science Accolades

Elections to National Academy of Sciences and American Philosophical Society include three Nobelists and plutonium discoverer. Fourth woman academician named.

► WHEN she was elected to the most exclusive science society in America, the National Academy of Sciences, Dr. Gerty T. Cori, of Washington University Medical School, St. Louis, added this honor of being the fourth woman academician in history to a similar election a few days earlier to the American Philosophical Society, with almost as restricted a membership.

She thus joins her husband fellow-scientist in membership in these two leading societies as well as the Nobel prize given them last fall.

The discoverer of plutonium, Dr. Glenn T. Seaborg, University of California chemist, was another scientist elected to the Academy.

Prince Louis de Broglie, Nobelist and famous French theoretical physicist, and Dr. Ronald A. Fisher of Cambridge, England, leading statistician, were elected foreign associates of the Academy.

The discoverer of the neutron (the atomic particle that is trigger of the atomic bomb) Sir James Chadwick of Liverpool, England, was elected a foreign member of the American Philosophical Society, as was Dr. Otto Lous Mohr, president of the University of Oslo.

The physicist-member of the Atomic Energy Commission, Dr. Robert F. Bacher, was elected a member, as was Frederick Osborn, U. S. representative on the UN Atomic Energy Commission, who was made a member in the social science section.

Other new members elected to the National Academy of Sciences are:

Eric G. Ball, professor of biological chemistry, Harvard Medical School; Lloyd V. Berkner, chairman of the Section of Ex-

ploratory Geophysics of the Atmosphere, Carnegie Institution of Washington; Felix Bloch, professor of physics, Stanford University; Hallowell Davis, director of research, Central Institute for the Deaf, research professor of otolaryngology, Washington University; John R. Dunning, professor of physics, Columbia University; W. Maurice Ewing, head of department of geophysics, Columbia University; Karl Folkers, assistant director of research, Merck and Co.; Thomas Francis, Jr., professor of epidemiology and chairman of the department, School of Public Health, University of Michigan; Edwin

R. Gilliland, professor of chemical engineering, Massachusetts Institute of Technology; Haldan K. Hartline, associate professor of biophysics, Hospital of the University of Pennsylvania; Ernest R. Hilgard, chairman of the department of psychology, Stanford University; Frank L. Horsfall, Jr., member, Rockefeller Institute for Medical Research; John R. Johnson, professor of chemistry, Cornell University; Raymond A. Kelsler, dean, School of Veterinary Medicine, and professor of bacteriology, University of Pennsylvania; Cyril N. H. Long, chairman of department of physiological chemistry, Yale University School of Medicine; Edward J. McShane, professor of mathematics, University of Virginia; Donald H. Menzel, chairman of department of astronomy, Harvard University, associate director for solar research, Harvard College Observatory; C. W. Metz, chairman of department of zoology, University of Pennsylvania; Curt P. Richter, associate professor of psychobiology, Johns Hopkins University; Hermann I. Schlesinger, professor of chemistry, University of Chicago; Francis O. Schmitt, head of department of biology and biological engineering, Massachusetts Institute of Technology; Gilbert M. Smith, professor of botany, Stanford University; Curt Stern, professor of zoology, University of California; Chester Stock, professor of paleontology, California Institute of Technology; James B. Sumner, professor of biochemistry, Cornell University; Edward Teller, professor of physics, University of Chicago; Kenneth V. Thimann, associate professor of botany, Harvard University; Charles A. Thomas, executive vice president, Monsanto Chemical Company.



ACADEMY MEETING—Among the scientists attending the annual meeting of the National Academy of Sciences were (left to right): Dr. Th. G. Sahama, visiting Finnish scientist at the Geophysical Laboratory, Carnegie Institution of Washington; Dr. Felix Chayes, Geophysical Laboratory, Carnegie Institution of Washington; Dr. K. J. Neuvonen, visiting Finnish scientist at the Geophysical Laboratory, Carnegie Institution of Washington; and Dr. W. H. Bucher, professor of structural geology, Columbia University.



NOBELISTS ATTEND ACADEMY MEETING—Three Nobel prize winners who attended the National Academy of Sciences meeting were (left to right): Dr. Niels Bohr, physicist, Institute for Theoretical Physics, Copenhagen, Denmark; Dr. J. Franck, professor of physical chemistry, University of Chicago; and Dr. Otto Stern, physicist, Carnegie Institute of Technology.

Other scientists elected new members of the American Philosophical Society include:

Farrington Daniels, physicist, University of Wisconsin; Zay Jeffries, metallurgist, General Electric Co.; Samuel S. Wilks, professor of mathematics, Princeton University; Vladimir Kosma Zworykin, television inventor, RCA Laboratories; Elmer G. Butler, chairman of the department of biology, Princeton University; Chester Ray Longwell, professor

of geology, Yale University; Eli K. Marshall, professor of pharmacology and experimental therapeutics, Johns Hopkins University; Louis L. Thurstone, professor of psychology, University of Chicago; Cornelis Bernardus Van Niel, professor of microbiology, Stanford University.

Dr. Edwin G. Conklin of Princeton was elected president of the American Philosophical Society.

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PHYSICS

Spying on Growing Cells

New kind of microscope, which may uncover many important facts about life processes, color "stains" with light waves without harming the living cells.

➤ COLOR "staining" with light waves without killing the living cells is a new microscopic technique that is expected to reveal much about important life processes.

This new kind of microscope, a further development of the phase microscope, will permit man to spy upon cells as they grow, multiply and carry on their important life functions. It will let scientists see in color, for the first time, both normal and cancerous growth, and may help them discover what the abnormal growth is.

But this latest development in microscopy is still very much in the experimental stage. Many refinements may be expected before instruments of this type are made available to scientists for important research.

The instrument, reported to the National Academy of Sciences meeting in Washington, was developed by Dr. F. Zernike, the Dutch physicist who visualized and made the first phase microscope. Dr. Zernike, professor of physics at the University of Groningen, the Netherlands, this year is visiting profes-

sor of physics at the Johns Hopkins University in Baltimore.

The ordinary phase microscope uses two transparent rings to reveal, in black and white, details heretofore unknown concerning delicate cell structure. Two optical companies are now making instruments of this type available commercially in America.

The phase ring separates a small portion of light and distributes it over the whole field. It works because it takes advantage of the fact that light travels in waves.

This separated light, spread over the whole image, promises an evenly illuminated background. The image appears bright where the phase of the direct light is the same as that of the background light so that it is reinforced. It shows dark when the phases of the two light parts are different so that by interference they destroy each other.

In the new color phase microscope, the ring works in an opposite way in the red than in the green end of the spectrum, giving some details more red light, others more green, depending on their thickness.

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BIOLOGY

Cytoplasm Chooses Genes Actually To Be Developed

➤ GENES, the still-unseen chemical units that determine heredity in animals and plants, are not necessarily as omnipotent as some biological thinking would hold them to be, Dr. T. M. Sonneborn of Indiana University suggested. The cytoplasm, or general protoplasm of the cell, can have something to say about what the offspring will be like, he declared at the meeting of the National Academy of Sciences in Washington.

His studies of the one-celled animal form known as Paramecium indicate that while the genes do determine what characters the coming generation may possess, the cytoplasm "picks out" the ones that are actually going to be developed. This is possible in Paramecium because in these primitive creatures the cytoplasm is a well-developed, active part of the organism when the new generation gets its start. In the beginning-cells of higher animals and plants the cytoplasm is new, undeveloped, "inexperienced," hence has little or nothing to say about the fate of the genes.

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