

which holds atomic nuclei together. Discovery of the neutrino should help scientists to gain understanding of this force, which is one of the fundamental properties of matter."

The first scientific publication about the discovery will be a paper by Reines and Cowan which will appear in an early issue of *Science*.

Survey of Engineering Professors

The engineering colleges of the United States have experienced a net loss of 3 percent of their professors to industry within a 2-year period, and this at a time when the engineering colleges need 1300 more teachers to carry the 1956-57 load. This situation was reported to the American Society for Engineering Education by an industry committee headed by A. R. Hellwarth, assistant to the director of employment, Detroit Edison Company.

The committee, acting under the ASEE Relations with Industry Division, reported a net 2-year loss of three professors in each hundred from campuses to industrial employers, with higher salaries being the major lure. During the 2-year period more than 750 left engineering faculties for industry, but 500 left industry for teaching positions.

The survey was based on figures submitted by 62 percent of the 150 colleges and universities accredited by the Engineers' Council for Professional Development. These institutions recorded a gain in teaching strength from 8000 to 8400 during the period, in spite of losses to industrial employers. The present shortage of 1300 would require the engagement of 15 additional professors or instructors for every 100 now teaching.

Mammary Tumor Agent in Mice

In a 10-year study of the occurrence of mammary tumors in more than 4000 female mice of various specific genotypes, scientists at the National Cancer Institute have been able to change the susceptibility of certain strains to breast tumors by genetically controlling the transmission of the mammary tumor agent. This agent, or virus, is also known as the "milk factor," because some 20 years ago a series of experiments at the Jackson Memorial Laboratory, Bar Harbor, Me., disclosed a maternal influence in mouse breast cancer.

When the young of a high-cancer strain mouse were foster-nursed by a female of a low-cancer strain, the young failed to develop cancer at the appropriate age as would have been expected. The experiment was then reversed, and many mice later developed breast cancer. These

studies indicated that some factor in the milk was inciting the cancer, and that this "factor" or "agent" seemed to have many characteristics of a virus.

In the search for the specific gene or genes responsible for the transmission of this "milk factor," three strains of mice were used: one that possessed the tumor agent and was genetically susceptible to it; one that did not have the agent but was genetically susceptible to it; and one that neither had the agent nor was susceptible to it. By a system of matings involving cross-breeding, genetic material of the resistant strain was introduced into a susceptible strain and progressively increased in succeeding generations.

The authors, Walter E. Heston, Margaret K. Deringer, and Thelma B. Dunn of the Laboratory of Biology, National Cancer Institute, believe that evidence is at hand indicating that the agent does not remain inactive over a number of generations only to suddenly reappear; the agent did not appear intrinsically or *de novo*; and not all mammary tumors of the mouse are associated with the agent and not all mice with the agent develop tumors. The presence of the agent merely increases the probability that a tumor will occur and its absence decreases this possibility.

News Briefs

■ Heart disease, which causes more deaths in the United States than any other disease, does not rank among the top three most serious illnesses in any Asian country. In Asia, the top killers are epidemic diseases and others such as tuberculosis, beri-beri, cancer, malaria, yaws, and pneumonia.

In Japan, heart disease was the fifth most frequent cause of death in 1954 with a rate of 59.8 per 100,000, the highest rate in Asia. In the United States in 1950, 745,074 persons died of heart disease—a rate of 494.4 per 100,000 population. In 1953, this jumped to 794,120 deaths—a rate of 501.4 per 100,000.

■ The United Nations Educational, Scientific and Cultural Organization has announced that an experimental solar still to remove minerals from water has been erected at Mildura in Australia. The device consists of a glass structure set over a shallow trough of black plastic. Water to be treated is siphoned into the trough and evaporated by the sun shining through the glass canopy. The vapor condenses and drains into storage tanks. It may be possible to use the still to provide an inexpensive method of purifying water from artificial wells for agricultural and household uses in areas that receive little rainfall.

■ The first house in Britain to be heated by solar energy will be ready for occupancy in September. The special heating equipment, details of which are secret, is being installed. Leslie Gardner of the Western Detail Manufacturing Company Ltd., Bristol, is the inventor of the system and designer of the house. He will be visiting the United States this summer, probably in mid-August, when he will go to Detroit and Chicago in the hope of interesting American industrialists in his idea.

■ The nation's new \$750,000 magnetic observatory and laboratory opened recently at Fredericksburg, Va. It replaces the old magnetic observatory at Cheltenham, Md.

■ Both the United States and the Soviet Union have officially endorsed Vienna as the site of headquarters for the proposed International Atomic Energy Agency.

■ Pakistan has started the construction of a national science institute at Lahore, the United Nations Educational, Scientific and Cultural Organization reports. Recently representatives from Australia, India, Britain, the Soviet Union, and the United States attended a ceremony for the laying of the cornerstone.

The institute, the Ismail Science House, is to be completed in a year. It will have a library of 250,000 works, Pakistan's first comprehensive scientific library. It also will have a bibliographic and documentation center, a modern auditorium, a research center, a press and publication department, offices for scientific societies, club rooms, and a cafeteria.

■ The Woods Hole Oceanographic Institution has spent \$200,000 converting the former Coast Guard cutter *Crawford* for hurricane research. The vessel left on 1 July for a 6-week cruise.

The *Crawford*, which is 125 feet long and 23 feet wide, has been air-conditioned and is capable of carrying food for 1 month for a crew of 14 and an 8-man scientific staff. The ship has two laboratory areas, and her scientific equipment includes a deep-sea winch with 25,000 feet of 5/32-inch wire, radar, two Long Range Navigation sets (Loran), a Raytheon shallow water echo-sounder, an Edo deep water echo-sounder, a special precision echo-sounder recorder developed at Woods Hole, two small winches for temperature measurements down to a depth of about 1000 feet, a continuously operated motion picture camera that will photograph the sea surface by exposing one frame every second, sea temperature measurement devices,

an instrument to measure the height of the cloud ceiling at night, and a small house for radiosonde balloons to record wind speed at high altitudes.

Scientists in the News

IRENE M. STRIEBY, library consultant at Eli Lilly and Company, has received the 1956 Professional Award of the Special Libraries Association. She was honored for "her outstanding professional achievements and in recognition of her devotion to the cause of special libraries for a quarter of a century."

Mrs. Strieby joined Lilly in 1934 to become head of its library. Under her leadership the library has been expanded to include a research library, a business service, and several departmental collections; the number of volumes has grown to 30,000; and the staff of librarians has been increased to 18.

ARTHUR M. BUECHE has been named manager of a newly created unit in the chemistry research department of the General Electric Research Laboratory, Schenectady, N.Y. The unit, which will be devoted to polymer and interface studies, will be part of the Physical Chemistry Section. Bueche has been a member of the research laboratory staff since 1950.

Cecilia Payne-Gaposchkin has been appointed professor of astronomy at Harvard University. She is the first woman to attain full professorship at Harvard through regular faculty promotion. Since 1938 she has been Phillips Astronomer in the Harvard College Observatory and lecturer on astronomy.

Dr. Payne-Gaposchkin and her husband, Sergei I. Gaposchkin, are a team in astronomical research. Together they have made an extensive survey of variable stars.

CONRAD G. MUELLER, JR, associate professor of psychology at Columbia University, has been awarded a senior postdoctoral fellowship in physiological psychology for the academic year 1956-57. This fellowship, which is administered by the National Academy of Sciences-National Research Council, is supported by the Carnegie Corporation of New York.

Mueller's main interest is in the psychophysiology of vision. On July 1, he started work at the Rockefeller Institute for Medical Research, where he is conducting research on physiological mechanisms in vision, acquiring additional techniques for the micropipette method of recording from single sensory cells, and employing other techniques for working with the vertebrate retina.

RAYMOND OLNEY, who has served since 1921 as editor and publisher of *Agricultural Engineering*, the journal of the American Society of Agricultural Engineers, has received the 1956 Max Eyth medal, which is awarded by the Max Eyth Society for the Advancement of Agricultural Engineering (a German Society). The medal was presented in Roanoke, Va., during the 49th annual dinner of ASAE.

Other awards presented at the dinner are as follows: the John Deere gold medal, ARTHUR W. CLYDE, College Park, Pa., and two Cyrus Hall McCormick gold medals, one to MARTIN RONNING, Minneapolis, Minn., and one to H. P. SMITH, College Station, Tex.

JAY W. FORRESTER, head of the digital computer division of Lincoln Laboratory at Massachusetts Institute of Technology, has been appointed professor of industrial management in the M.I.T. School of Industrial Management. While at Lincoln Laboratory, and earlier in the Servomechanisms Laboratory at M.I.T., Forrester developed the method of random access magnetic storage that is now the standard memory device for reliable, high-speed digital computers.

Another appointment at M.I.T. is that of I. EDWARD GARRICK of the National Advisory Committee for Aeronautics who will serve for a year as the Jerome Clarke Hunsaker professor. He will teach and conduct research in the department of aeronautical engineering, concentrating on studies of flutter, aerostatic problems, and aerodynamic phenomena.

ROBERT W. BEAL has been named director of development at the Corps of Engineers Research and Development Laboratories, Fort Belvoir, Va. In the newly created position, Beal, formerly chief of the mechanical engineering department, will be responsible for the establishment of an applications engineering program designed to bridge the gap between research and development and the quantity production of new military equipment for the Corps of Engineers.

CARL B. KOFORD, zoologist at the Museum of Vertebrate Zoology, University of California, has been appointed resident naturalist of the Smithsonian Institution's Canal Zone Biological Area, a tropical forest and wildlife preserve on Barro Colorado Island. He succeeds JAMES ZETEK, who recently retired after 45 years of service in the Canal Zone. During most of this time Zetek was associated with the U.S. Department of Agriculture and the Smithsonian Institution.

ERNEST YEAGER, associate professor of chemistry and technical director of the Ultrasonics Research Laboratory at Western Reserve University, and IRA J. HIRSH, research associate for the Central Institute for the Deaf and associate professor of psychology at Washington University (St. Louis), received the biennial award of the Acoustical Society of America during the recent meeting in Boston of the International Congress on Acoustics. The award, consisting of a medal and a check, this year was given jointly for the first time since it was first conferred in 1942.

WILLIAM E. ADAMS, the James Nelson and Anna Louise Raymond professor of surgery at the University of Chicago, has accepted an invitation to be a visiting lecturer at the University of Glasgow in Scotland. His appointment, which is under the Fulbright program, began on 1 July.

JOHN A. D. COOPER, associate professor of biochemistry at Northwestern University Medical School, will direct a course this summer at the University of Brazil, Rio de Janeiro, on radioisotope techniques in biology and medicine. He also will make a 3-month lecture tour of South American universities and scientific societies. His trip is being sponsored by the U.S. Department of State.

MAX C. BREWER of the geophysics branch of the U.S. Geological Survey at Menlo Park, Calif., has been appointed director of the Arctic Research Laboratory at Point Barrow, Alaska. The University of Alaska operates the laboratory under contract with the Office of Naval Research. The new director will assume his duties in September, approximately 1 month before IRA L. WIGGINS, present director, returns to Stanford University, where he is professor of biology and director of the Natural History Museum.

ROBERT F. MEHL, director of the Metals Research Laboratory and head of metallurgical engineering at Carnegie Institute of Technology, has been awarded the "Grand" medal of Le Chatelier by the council of the French Society of Metallurgy. The medal will be presented in Paris during the society's annual symposium on metallurgy, 22-27 Oct.

JOHN R. REES, for 12 years a mechanical engineer for the Navy Bureau of Aeronautics, has joined the staff of the Engineering Metrology Section of the National Bureau of Standards. He will aid in the preparation of handbooks and various other publications on screw threads and screw-thread gaging.