

News of Science

Tatum Named to Editorial Board

It is a pleasure to announce that Edward L. Tatum was appointed to the editorial board of *Science* and *The Scientific Monthly* on 1 Apr. Tatum, now 47 years old, took his A.B. degree in chemistry, his master's degree in microbiology, and his Ph.D. degree in biochemistry at the University of Wisconsin, thus getting a strong background in several sciences.

Following a year as research assistant in biochemistry at Wisconsin (1934-35) and a year as a fellow of the General Education Board at Utrecht (1936-37), Tatum joined the Stanford University biology department, where he was a research associate (1937-41) and an assistant professor (1942-45). After having served on the Yale University faculty, first as associate professor of botany (1945-46) and then as professor of microbiology (1946-48), he returned to Stanford as professor of biology. He held this post until he became a member of the Rockefeller Institute for Medical Research in January of this year.

Tatum has served many national scientific bodies, and at present, in addition to being on the National Science Board, he is a member of the Committee on Virus Research and Epidemiology, National Foundation for Infantile Paralysis; the Biology Council, National Research Council; Biology Panel, National Science Foundation; and the Research Advisory Council, American Cancer Society. His honors include the American

Chemical Society's Remsen award, selection as the Herter lecturer at New York University, and membership in the National Academy of Sciences.

His special interests have been the nutrition and metabolism of insects and microorganisms and the biochemistry and genetics of microorganisms. Some of his most significant research results are as follows: identification of thiamine as a growth factor for propionic acid bacteria; isolation and identification of kynurenine as an eye-color hormone in *Drosophila* (with G. W. Beadle); discovery of biochemical mutants in *Drosophila* (with G. W. Beadle); biochemical mutations in bacteria; gene recombinations in *Escherichia coli* (with J. S. Lederberg); biosynthesis of tryptophan (with D. M. Bonner).

Tatum's wide-ranging scientific interests, outstanding research accomplishments, and diverse academic experience make him notably well qualified to serve as a member of the editorial board of *Science* and *The Scientific Monthly*. In addition, his experience since 1948 as a member of the editorial board of the *Journal of Biological Chemistry* and as assistant managing editor of the *Annual Reviews* (1948-53) should serve him well in his new post. We welcome Tatum as a distinguished new member of our editorial board.—G. DuS.

South Atlantic IGY Studies

The program to study the deep water masses of the South Atlantic Ocean during the International Geophysical Year got under way in February when the research vessel *Crawford*, which belongs to the Woods Hole Oceanographic Institution, left Woods Hole, Mass. The 125-foot vessel will have crossed the Atlantic four times and covered some 18,000 miles by the time it returns next June.

F. C. Fuglister, oceanographer and chief scientist on board the ship, has explained that the main objective of the cruise is to determine what changes may have taken place in the physical and chemical properties of the water masses of the South Atlantic Ocean since the classic survey made by the German oceanographic ship *Meteor* during the years

1925-27. The *Crawford* carries a scientific complement of six and 15 officers and crew members.

The horizontal and vertical movements of the ocean water masses influence the climate of the world. An understanding of this circulation, of which we are still largely ignorant, may lead to forecasts of climatic changes, similar to the many wild or severe fluctuations which have taken place since the last ice-age.

Many hundreds of temperature and salinity observations from the surface to near the bottom are being made by the *Crawford's* investigators, who work regular ships hours. Water samples are titrated for salinity and for oxygen content. Formerly water samples for salinity titration were brought back to Woods Hole for analysis. An electronic salinometer, designed by Karl E. Schleicher of the Woods Hole Oceanographic Institution, now makes it possible to obtain the desired data on board ship.

If the ocean is to be used as a disposal area of atomic waste products, it is necessary to know soon where and how such disposal can safely take place. We know that the ocean is slowly "turning over." How long does it take for the surface water to sink to the bottom? Estimates based on several methods and extensive research during the last few years differ widely from a time range of about 150 years to 1000 years and more. L. V. Worthington of the Woods Hole Oceanographic Institution has suggested that the cold bottom water of the North Atlantic Ocean formed during the little "ice-age" about 150 years ago. Pollution from atomic waste, unlike the familiar harbor pollution, is irremediable. It is therefore essential to learn more about the deep water movement of the ocean.

For the moment, fission products, deposited in the ocean by fall-out from nuclear weapons tests, are an aid to oceanographic studies. The introduced fall-out materials can be measured and form an excellent tracer to study the horizontal diffusion in the sea and the rate of mixing between different water layers. On board the *Crawford* a 55 gallon plastic water sampler designed by Vaughan T. Bowen, geochemist, is lowered to various depths to obtain large water samples. The samples are acidified on board the *Crawford*; the carbon dioxide is driven off and collected chemically for analysis of its content of radioactive carbon-14 and stable carbons 12 and 13. The carbon-14 dating techniques have been used before to determine the age of sea water, but more studies need to be made. This is the first time that such samples have been collected in conjunction with a hydrographic survey of temperatures and salinity and on complete transverse sections across the ocean.

After the carbon-dioxide has been re-



Edward L. Tatum

moved, 15-gallon polyethylene drums, with steel outpack, will be filled for return to Woods Hole, Mass., by freighter from the *Crawford's* ports of call. The small vessel cannot stand the additional deckload of 88 filled drums. These samples will later be analyzed for many radioactive elements, such as strontium-90, antimony-125, cerium-144, promethium-147, possibly cesium-137, and the naturally occurring tritium. Some analyses for stable rare earths will also be made. An idea of the size and importance of this program may be obtained from the list of organizations cooperating in this study. The National Science Foundation and the Office of Naval Research have aided with financial grants, while samples will be analyzed at Woods Hole, at Yale University, the Swedish radioactive dating laboratory at Stockholm, and at Clark University.

Although the physical and chemical observations are the main object of the cruise, the *Crawford* is making a continuous trace of the ocean bottom on the Woods Hole precision echo-sounding recorder. This instrument measures the depth of the ocean with an accuracy of one part in 10,000. In addition, biological observations are being carried out, particularly of whales and porpoises, and sea and land birds are identified and recorded. Further, lines are being towed for pelagic fishes such as tuna, wahoo, and so forth.

The ship is also continuing the usual shark-catching program. Much has been learned during recent years about the activities and natural history of the white-tipped shark, the most common open-sea shark in the North Atlantic and in the Caribbean Sea. At night, an underwater light is hung just below the surface which usually attracts a glittering array of small sea-life, particularly larvae and young stages of fishes and the many deep-sea fishes that come to the surface at night.

Fulbright and Smith-Mundt Awards

The application deadline is 25 Apr. for 1958-59 awards under the Fulbright Act for university lecturing and advanced research in Argentina, Australia, Burma, Chile, Colombia, Ecuador, India, New Zealand, Pakistan, Peru, the Philippines, Thailand, Argentina, Israel, and Turkey.

Programs for Austria, Belgium and Luxembourg, Denmark, Finland, France, Germany, Greece, Israel, Italy, Japan, the Netherlands, Norway, Turkey, and the United Kingdom and Colonial Dependencies will be announced in June, although applications will be accepted from 1 May through the closing date, 1 Oct. 1957.

Grants for lecturing abroad under the Smith-Mundt Act will be available in

approximately 40 countries which do not participate in the program under the Fulbright Act. These countries are in Latin America, the Near East and Africa, the Far East, and Europe. Application forms and additional information may be obtained from the Conference Board of Associated Research Councils, Committee on International Exchange of Persons, 2101 Constitution Ave., NW, Washington 25, D.C.

Markle Scholars

The John and Mary R. Markle Foundation has announced the appointment of 25 scholars in medical science, all faculty members of medical schools in the United States and Canada. The sum of \$750,000 was appropriated toward their support to the schools where they will teach and carry on research.

With these appointments the fund completes 10 years of a program to aid young medical-school faculty members seeking careers in teaching and research. In the decade, 206 doctors in 74 medical schools in the United States and Canada have received help from appropriations totaling \$6,070,000. For each scholar appointed, the fund has allocated \$30,000 granted at the rate of \$6000 annually for 5 years to their medical schools.

The program will continue as a major interest of the foundation. Of those appointed in the 10 years, two have become heads of departments, one directs an important cancer research institute, and two head research divisions in Government laboratories. Twenty-five are full professors and 51 associate professors.

This year's Markle scholars are Richard H. Adler, associate, University of Buffalo School of Medicine, thoracic surgery; Aurele Beaulnes, assistant professor, University of Montreal Faculty of Medicine, pharmacology; Robert E. Carter, instructor, University of Chicago Division of the Biological Sciences, general pediatrics; Sanford I. Cohen, instructor, Duke University School of Medicine, psychiatry (at present medical officer, U.S. Air Force, Wright Patterson Air Force Base); John E. Connolly, instructor, Stanford University School of Medicine, surgery; Frank Falkner, assistant professor, University of Louisville School of Medicine, pediatrics; Lawrence R. Freedman, instructor, Yale University School of Medicine, internal medicine; Thomas R. Hendrix, instructor, after 1 July, Johns Hopkins University School of Medicine, internal medicine (at present research fellow, Evans Memorial-Massachusetts Memorial Hospitals and assistant in medicine, Boston University); David S. Howell,

assistant professor, University of Miami School of Medicine, internal medicine; T. R. Johns, assistant professor, University of Virginia School of Medicine, neurology; Kermit E. Krantz, assistant professor, University of Arkansas School of Medicine, obstetrics and gynecology; Lloyd D. MacLean, instructor, University of Minnesota Medical School, surgery; James A. Merrill, instructor, University of California School of Medicine (San Francisco), obstetrics and gynecology; Robert O. Morgen, demonstrator, McGill University Faculty of Medicine, internal medicine; George C. Morris, Jr., instructor, Baylor University College of Medicine, surgery; Arno G. Motulsky, assistant professor, University of Washington School of Medicine (Seattle), internal medicine; Russell M. Nelson, assistant professor, University of Utah College of Medicine, surgery; George Nichols, Jr., associate, Harvard Medical School, internal medicine; Donald E. Pickering, assistant professor, University of Oregon Medical School, pediatrics; Arthur H. Schmale, Jr., instructor, University of Rochester School of Medicine and Dentistry, internal medicine and psychiatry; John D. Thompson, instructor, Louisiana State University School of Medicine, obstetrics and gynecology; Henry O. Wheeler, instructor, Columbia University College of Physicians and Surgeons, internal medicine; Joseph R. Wilder, assistant professor, New York Medical College, general and cardiovascular surgery; T. Franklin Williams, instructor, University of North Carolina School of Medicine, internal and preventive medicine; William J. Williams, assistant professor, University of Pennsylvania School of Medicine, internal medicine.

AEC Reactor Explodes

A critical assembly, known as the "Godiva," which has been in operation at the Los Alamos Scientific Laboratory since August 1951, was severely damaged during an experiment on 12 Feb. Since the experiment was remotely controlled, no one was exposed to radiation. No physical damage was done to the building in which the experiment was being conducted, and radiation contamination has been removed by standard clean-up methods with no appreciable loss of uranium. Damage to the assembly was such that it is considered impractical to repair it.

The Godiva was one of several simple critical assemblies at Los Alamos that are used for developing information on fast-neutron systems and as a source of large quantities of neutrons for instantaneous irradiations, called "prompt bursts." It consisted of an unshielded spherical mass