last November after a launching from Point Arguello, California, which had previously been publicized as a development site for the Samos program. A brief announcement stated that the shot was successful and was for the purpose of launching a satellite "carrying a number of classified (secret) test components."

That terse statement has since been the model for most military rocket launchings, but the Administration has decided that henceforth even greater brevity will be employed. The new rule governing announcements is itself classified, but its effects became clear last week after another launching from Point Arguello. An announcement stated little more than that the launching was a success and employed an Atlas-Agena combination, which is not giving away very much since the launchings are visible for great distances and intimate details of the Atlas-Agena's capabilities can be had at any teen-age rocket club. This country's biweekly submission to the U.N. space register calls for some additional information—inclination, apogee, perigee, and nodal period—but these items are presumably available to anyone with a good radar set. The register's designation of "satellite category" is a multiple-choice affair, calling for the registrant to pick one: Development of spaceflight techniques and technology, space research and exploration, practical applications of space based technology or nonfunctional objects. The categories are obviously quite broad, and it will not be difficult to place Samos or its cousins in a wholly unrevealing slot.

The Needles Again

Project West Ford, the long-standing and controversial space-needles experiment, is in the works again, but this time it appears that through a combination of circumstances the world is going to hear about it only if it is successful. If it is a fizzle, as it was the last time, very few people will be the wiser.

The object of West Ford is to place in orbit a band of 350-million fine copper wires to test their usefulness as a communications reflector. The band would be circular and 40,000 miles long at an altitude of 2000 miles. The experiment has peaceful as well as military implications, the latter lying in the possibility that the needles would help provide jam-proof communications for this nation's widely dispersed military forces.

An analysis of the first West Ford launch, last October, has led to the conclusion that the attempt failed because insufficient spin was imparted to the needle package when it separated from its rocket. The needles, embedded in naphthalene, were expected to be dispersed by the force of the spin as the naphthalene turned to gas. Instead, they clung together in a number of fragments. These were spotted by radar after a long and difficult search.

The new attempt will incorporate several new devices, among them a more reliable spin mechanism, a ground-command release system that will make it possible to release the needle package only if it is in a proper orbit, and telemetering equipment that will signal the location of the package. Telemetry in the initial package would have made the radar search considerably easier.

Just when the new attempt will be made is a matter that the Air Force is keeping to itself—"later this year" is the most precise information offered—principally because the West Ford package rides as extra cargo on a rocket whose main business is to carry a reconnaissance satellite. Thus, there will be no advance word of the launching, nor, it seems, will there be any later announcement unless the experiment goes as planned. In line with its new information policy, the Air Force is extremely cagey about its space activities and sees no point in giving out any more information than it feels necessary. This arrangement reflects the Administration's desire to reduce the possibility of a renewal of the controversy that developed when West Ford was first announced. At that time, the International Astronomical Union expressed fears that the needles would interfere with radio and optical observations, and the Soviets tossed in a few objections, charging that the experiment amounted to a Pentagon-inspired pollution of the heavens.

The Administration, after several special studies, concluded there were no valid objections to proceeding with the experiment. It remains wary, however, because of the potential for Soviet propaganda if there is any indication that the U.S. is withholding information on the touchy subject of filling the sky with needles. As a result, the world will quickly know if West Ford works, but if it doesn't, it is likely that the failure will not be disclosed at all or, possibly, will be disclosed only long after the fact.—D. S. GREENBERG

Announcements

A complete map of the **Antarctic Continent**, incorporating findings of the 1961–62 anarctic research season, has been issued by the American Geographical Society. Produced under a grant from the National Science Foundation, the map is at a scale of 1 : 5,000,000 and measures 42 by 56 inches. Latest developments recorded include the Thiel Mountains, formerly referred to as the eastern Horlick Mountains, and Thurston Island, depicted on earlier maps as a prominent peninsula lying between the Bellingshausen and Amundsen seas (more extensive investigations have shown that it is attached to the mainland by floating shelf ice). The Flichner Ice Shelf, second largest mass of shelf ice in the continent, is shown closer to its true proportions, extending more than 400 miles southward from the Weddell Sea and farther westward than previously believed. All known geographic features, overland traverse routes, and manned stations are included; bathymetric lines, contours, selected soundings, and depths of underlying rock surfaces are also shown. (American Geographical Soc., Broadway at 156 St., New York 32. $2, folded; $3, rolled)

The Justus Liebig University in Giessen, Germany, is establishing an **Institute for Agriculture, Veterinary Medicine, and Nutrition in the Tropics and Subtropics**, to train senior students as experts for developing countries. The facility, the first German university institute formed specifically for this purpose, will also train students from the developing countries.

A 25-year review of **Soviet biochemistry**, based on an analysis of the U.S.S.R's leading biochemical journal, is available through the U.S. Department of Commerce. (Office of Technical Services, USDC, Washington 25, D.C. $2. Order 61-31229)

The U.S. Department of Defense has announced plans to construct a **Blue Mountain Seismological Observatory** near Sparta, Ore., as a part of the Advanced Research Projects Agency's VELA-UNIFORM program concerned with detection and identification of underground nuclear weapons tests. The $700,000, six-man facility, to be completed this summer by Texas Instru-

ments' Science Services Division, will consist of 21 monitored seismometers located in underground, watertight vaults. Technical supervision and management will be the responsibility of the Air Force Technical Applications Center.

Meeting Notes

The first national conference of the **Congress of Scientists on Survival** will be held from 15 to 17 June in New York. Specific objectives of the conference will be to pool and disseminate knowledge of existing programs for the elimination of war, and plan coordinated efforts; draft a positive program for peace for presentation to the U.N. and all governments; and promote the establishment of a collaborative *science of human survival*, as advocated by the AAAS Committee on Science in the Promotion of Human Welfare [*Science* **134**, 2080 (29 Dec. 1961)]. (H. H. Lerner, Congress of Scientists on Survival, 51 E. 90 St., New York 28)

A symposium on **enzyme models and structure** will be held at Brookhaven National Laboratory from 4 to 6 June. The program will cover general perspectives, transferases, oxidative enzymes, decarboxylation, and condensation and isomerization. Registrants are requested to indicate nationality, if other than U.S. citizen. Deadline: *10 May*. (C. H. W. Hirs, Brookhaven National Laboratory, Upton, N.Y.)

An informal conference on **molecular biology of the pleuropneumonia-like organism** is scheduled at the University of Connecticut from 14 to 16 June. (Robert C. Cleverdon, Department of Bacteriology, University of Connecticut, Storrs)

The first biennial **polymer symposium**, sponsored by the American Chemical Society, will be held at Michigan State University, 20–22 June. (J. B. Kinsinger, Department of Chemistry, Michigan State University, East Lansing)

A symposium on **salt**, covering geology, mining, evaporating, solution mining, and underground storage, will be held from 3 to 5 May in Cleveland, Ohio. Field trips to salt mines and plants will be available to registrants. (J. Allan Cain, Department of Geology, Western Reserve University Cleveland)

Courses

A postgraduate workshop on the basic physiology and psychology of **activity relating to cardiovascular patients** will be held in Cleveland, Ohio, from 18 to 22 June. The course, limited to 150 participants, will cover the physiology of effort, including magnitudes and duration of cardiac response to muscular work; effects of nutrition and disease; the physiology of emotional stress; and job requirements (Herman K. Hellerstein, Cleveland Area Heart Society, 1689 East 115 St., Cleveland 6)

Engineering and medical sciences research personnel are eligible to attend a course on **electrical techniques in biology and medicine**, to be offered at Case Institute of Technology from 25 June to 6 July. The course will cover the nature and origin of bodily activities that can be translated into measurable forms of electricity, the instruments which measure them, and the interpretation of the electrical signals which are received. (David Fleming, Department of Engineering, Case Institute of Technology, University Circle, Cleveland 6, Ohio)

The following summer courses on the use of **specialized tools in industrial chemistry and physics** will be offered by the Polytechnic Institute of Brooklyn:

Industrial application of x-ray diffraction; 4–15 June.

Chemistry, physics, and technology of ion-exchange membranes; 18–23 June.

Chemistry of high polymers; 25–29 June. (Doris Cattel, Polytechnic Institute of Brooklyn, 333 Jay St., Brooklyn 1, N.Y.)

Oak Ridge National Laboratory's international program in **advanced reactor technology** will begin on 17 September at Oak Ridge, Tenn. Classes for both of the 12-month courses—reactor operations supervision and reactor hazards evaluation—will open on 24 September. Candidates should possess a bachelor's degree in chemistry, physics, metallurgy, mathematics, engineering physics, or engineering.

U.S. applicants, who must be sponsored by the Atomic Energy Commission, its contractors, or other appropriate government agencies, may apply to the Director, Division of International Affairs, AEC, Washington 25, D.C. Foreign candidates may apply through their embassies or legations to the Department of State, Washington, D.C. Deadline: *15 June*.

Application forms and detailed information are available from Education Division, ORNL, P.O. Box X, Oak Ridge, Tenn.

Grants, Fellowships, and Awards

The International Atomic Energy Agency has accepted an offer of 40,000 rubles ($10,000) from the U.S.S.R. to be spent on fellowships for **training at Soviet universities** and scientific institutions. The offer will allow the agency to send 20 recipients for periods of 4 to 6 months. (IAEA, 11 Kärntner Ring, Vienna 1, Austria)

The 1962 Selby fellowship for research in the **physical or biological sciences**, tenable for a 1-year period at any university or research institution in Australia, is available to a Ph.D. under 30 years of age who has had preliminary research experience. The award carries a stipend of £2000 (Australian), plus travel and dependency allowances; a limited sum may also be allocated for travel within Australia. Applications should contain a description of the research to be undertaken, the name of the institution preferred by the candidate, copies of publications (in print or pending), and the names of three referees. Deadline: *30 July*. (Assistant Secretary, Australian Academy of Science, Gordon St., Canberra City, A.C.T.)

Fellowship applications are being accepted for a postdoctoral training program in the **physiology of reproduction**, scheduled to begin on 1 February 1963 at the Worcester Foundation for Experimental Biology. Stipends will be $5500, plus travel allowances, for a 12-month period. Deadline: *1 June*. (Celso-Ramon Garcia, Worcester Foundation, Shrewsbury, Mass.)

Recordings

The Science of Sound; two-record album, free loan. Demonstrations of acoustic phenomena. (Bell Telephone Laboratories, 463 West St., New York 14)

Dr. Polykarp Kush; 12-inch, long-play, $5.95 (order No. SR2). Nobel prize laureate discusses new insights into "the world of science" and "the nature and structure of matter."

Scientists in the News

Herbert Hollomon, manager of General Electric Company's engineering laboratory, has been appointed the first U.S. Assistant Secretary of Commerce for Science and Technology. The new post covers administrative responsibilities for the Bureau of Standards, Weather Bureau, Coast and Geodetic Survey, and Patent Office; and research and development staff responsibilities for the Bureau of Public Roads and the Maritime Administration.

The following scientists will share the $10,000 Viking Fund award of the Wenner-Gren Foundation for Anthropological Research:

Sol Tax, professor of anthropology at the University of Chicago.

Robert Heine-Gelden, member of the Austrian Academy of Science in Vienna, Austria.

L. S. B. Leakey, director and curator of Coryndon Memorial Museum in Nairobi, Kenya, E. Africa.

E. E. Evans-Pritchard, professor of social anthropology at the University of Oxford (England).

Vincent E. Parker, head of the department of physics and astronomy at Louisiana State University, will spend a 1-year leave of absence as deputy director of Oak Ridge (Tenn.) Institute of Nuclear Studies, effective in June.

Lester Dragstedt, emeritus professor of surgery at the University of Chicago and research professor at the University of Florida, has received the distinguished service award of the American Society of Abdominal Surgeons.

J. Murray Luck, professor of biochemistry at Stanford, has been appointed to the recently created post of scientific attaché to the U.S. Embassy in Bern, Switzerland, for a 2-year term.

Richard W. Reis, of the University of California (Los Angeles); and **David Hartley** and **Gordon A. Hughes**, of Manchester University, have joined Wyeth Laboratories' steroids and natural products section in Philadelphia, Pa.

Allan C. Johnson, manager of the Atomic Energy Commission's Idaho Operations Office, has joined Aerojet-General Corporation in Azusa, Calif., as assistant to the chairman of the board.

James D. Watson, of Harvard, and **Francis H. C. Crick**, of Cambridge University (England), will share the 1961 Research Corporation award of $10,000 for their collaboration on determination of the structure of deoxyribonucleic acid.

The following awards were presented by the National Academy of Sciences during the 1962 annual meeting:

Agassiz medal: **George E. R. Deacon**, of the National Institute of Oceanography, Wormley, England.

Elliot medal: **Donald R. Griffin**, of Harvard.

Kimber Genetics medal: **Milislav Demerec**, of Brookhaven National Laboratory.

Kovalenko medal: **George H. Whipple**, of the University of Rochester (N.Y.).

Smith medal: **Harold C. Urey**, of the University of California (San Diego).

Walcott medal: **Armin A. Opik**, of the Bureau of Mineral Resources, Canberra, Australia.

Hugh C. Ferguson, pharmacologist formerly with Strasenburgh Laboratories, has been appointed director of the biochemistry laboratories in Eastman Kodak Company's distillation products industries division.

Donald Harting, of the Department of Health, Education, and Welfare's bureau of state services, has been named director of the National Institutes of Health's center for child health research.

Allyn M. Munger, formerly with Esso Standard Oil in Coral Gables, Fla., has joined the Psychological Corporation in New York as a staff psychologist.

George D. Snell, senior staff scientist at Jackson Memorial Laboratory, Bar Harbor, Maine, has received the 1962 Bertner Foundation award for his work in cancer research.

At Electro-Optical Systems, Inc., of Pasadena, Calif.:

F. Russell Marshall, former vice president and technical director, has been appointed senior staff scientist at Quantatron, Inc., Applied Physics Laboratory in Santa Monica, Calif.

Arthur T. Yahiro, of Stuart Pharmaceutical Company, has joined the company's chemical research department.

Joseph Hammock, of Bell Telephone Laboratories, has been appointed professor and head of the department of psychology at the University of Georgia.

John K. Backus, former research supervisor with General Mills, Inc., has joined Mobay Chemical Company in Pittsburgh as a research specialist in flexible and rigid urethane foam application.

Marshall C. Harrington, former contract research administrator for the Bureau of Ships' fundamental hydromechanics research program, has joined the Air Force Office of Scientific Research as a staff member of the physical sciences directorate.

Recent Deaths

William B. Atkinson, 44; professor and chairman of the department of anatomy at University of Louisville School of Medicine; 4 Mar.

Robert H. Bedford, 69; marine bacteriologist and director of new product development at Philip R. Park, Inc., in San Pedro, Calif.; 10 Mar.

Harold N. Cummings, 77; engineer for Curtiss-Wright Corporation and retired vice president of Newark College of Engineering; 14 Mar.

Franklin Fearing, 69; emeritus professor of psychology at University of California (Los Angeles); 26 Mar.

Theodore C. Frye, 92; emeritus professor and former head of the department of botany at the University of Washington (Seattle); 5 Apr.

Manuel G. Gilledo, 68; physicist on the faculty at Havana University; 3 Apr.

Herbert E. Kahler, 65; retired chief of biology in the National Institute of Cancer's physiology laboratory; 29 Mar.

Seth H. Low, 50; retired biologist at the Department of Interior's Patuxent Wildlife Research Center in Laurel, Md.; 30 Mar.

Franz Schrader, 71; emeritus Da Costa professor at Columbia University and visiting professor of zoology at Duke University; 22 Mar.

Robert J. Sheehan, 62; former head of the department of biology at University of Notre Dame; 27 Feb.

Erratum: In the article "Nuclear clues to the early history of the solar system," by William A. Fowler [*Science* **135**, 1037 (23 Mar. 1962)], the next-to-the-last equation in column 3, page 141, erroneously repeats the immediately previous equation. The next-to-the-last equation should read $D^2/H^1 = 1.5 \times 10^{-3}$.