quate surveillance of jungle areas is a persistent problem. "The jungle canopy makes it difficult, if not impossible, to detect the movement and location of the Viet Cong," says an Army limited warfare specialist. Uncertain surveillance not only makes it hard to seek out the enemy but also jeopardizes the security of one's own encampments. Accordingly, studies are under way on new sensing devices, such as magnetic-loop and seismic detection systems, and on more effective defoliant agents.

Other Vietnam requirements also pose a wide array of R & D problems. Improvements in communications, troop mobility, firepower, and resupply systems for remote or besieged encampments—these are among the needs under investigation. Success in Vietnam, if achievable, seems likely to depend in part on whether the United States, with its huge military R & D establishment, can produce the new instrumentalities of war needed to help offset the advantages of climate, terrain, and jungle concealment now benefiting the Communist forces.

—LUTHER J. CARTER

Announcements

Northeastern University has received 20 acres of a former Nike missile site in Nahant, Massachusetts, from the General Services Administration for a **marine science research institute.** Last month the property was placed under control of the Department of Health, Education, and Welfare. It was then transferred without cost to the university. The school will convert a former officers' quarters into research and seminar rooms, offices, and a "wet" laboratory. Plans call for facilities for study in marine geology and biology, wave action, hydrology, corrosion, and harbor pollution.

A **Korean Institute of Industrial Technology and Applied Science** was established recently in Seoul. A U.S.–Korean agreement provides for a $750,000 U.S. development grant to help finance management guidance and technical advisory services during the institute's early years. The Korean government will provide Won-350 million ($1½ million) for the first year's operating expenses, and the two countries will meet later in the year to determine additional financial requirements for the institute's first 5 years.

The institute will operate as an autonomous foundation, governed by an 11-member board of trustees. It will, according to Korean president, Park Chung-Hee, "serve private and public owned enterprises alike. It will have access to many disciplines in science, technology, and engineering economics to carry out feasibility studies, to import and adapt foreign technology to Korea's needs and to conduct laboratory investigations." It will also provide opportunities for Korean scientists and engineers to conduct studies in their own fields.

Choi Hyung-Sup, head of the Korean Atomic Energy Research Institute, was named president of the new foundation.

Spain and the U.S. will cooperate in experiments to measure **wind, temperature, and pressure at altitudes of 18 to 36 miles**, under an agreement made in January. NAA and the Spanish Comi-

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REPORT FROM EUROPE

Transatlantic Cooperation on Research: New U.S. Moves

London. An apparent increase in U.S. government interest in transatlantic collaboration on some big-science programs is attracting attention in Europe.

A flurry of visits by high-level American officials concerned with science and technology has begun. Proposals for collaboration on some ambitious projects in space have gained new significance because of the British government's eagerness to withdraw from the European program to develop large space launchers, and because the curtailment of budgets for the unmanned exploration of space has focused new attention on American space-research aims for the 1970's.

European speculation about the U.S. interest begins with the meeting in late December between President Johnson and West German Chancellor Ludwig Erhard. At that meeting President Johnson gave considerable prominence to his suggestion that the United States and the German Federal Republic work together on such projects as sending a rocket to the neighborhood of Jupiter. Also discussed were joint work on air and water pollution and intensified collaboration on developing fast breeder reactors.

In January, presidential science advisor Donald Hornig visited several European countries. In Paris he attended a meeting of science ministers sponsored by the Organization for Economic Cooperation and Development. In Germany he visited Bonn and Berlin, the Battelle Memorial Institute laboratory in Frankfurt am Main, the reactor development center in Karlsruhe, and the Technical University of Munich.

At the Paris meeting, Hornig told American reporters that the U.S. was ready to consider expanded technical collaboration with Europe if there were progress toward such goals as international monetary reform, an advantageous trade agreement between the United States and the Common Market, and continued integration of the Common Market. While giving no details, Hornig did say that the proposed cooperation with the German Federal Republic was an example of what might be possible.

American representatives at the Paris meeting also put it this way: they hoped that, as Europe embarked on further multinational projects whose size required complex cooperation, the U.S. would be permitted to take part. An example is the plan for significant participation by U.S. scientists in experiments with clashing beams at the European Center for Nuclear Research. Construction of the storage rings for these experiments is scheduled to begin this year.

The most dramatic of the suggestions made recently is that of sending

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sión Nacional de Investigación del Espacio (CONIE) will work together in Spain to launch sounding rockets designed to obtain information on the dynamics of atmospheric circulation; the information is to be used in studies of meteorology and planetary atmospheres. Project directors have yet to be appointed.

Harvard University is establishing a **wildlife research** center and field station in Concord, Massachusetts, under the direction of the university's Museum of Comparative Zoology. The new facility includes nearly 800 acres, in two separate tracts, one near the National Fish and Wildlife Refuge of the Concord River. The center's value stems chiefly from its being typical of much of the land in New England and New York State. It has woodlands, open fields, marshes, and ponds which will serve as a laboratory for teaching and research on animal behavior and on the relationships of plants and animals to their environment. Ernst Mayr, director of the Museum of Comparative Zoology, says that the Concord station, about a half-hour's drive from the university, "will enable professors and students to spend time in the field and return to the city the same day for classes or laboratory work." It will be open both to people from Harvard and the other Boston-area institutions.

The University of Southern California has begun a graduate program in the **demography of social disorganization**. Students will take a 4-year course leading to the Ph.D. degree in sociology. Participants are eligible for National Institutes of Mental Health traineeships, which provide fellowships ranging from $1800 through $3000, plus tuition, fees, and a $500 allowance for each dependent. (Maurice D. Van Arsdol, Jr., Department of Sociology and Anthropology, University of Southern California, Los Angeles 90007)

The psychiatry department at Yale University is offering a training program designed "to provide intensive experience in developing research skills in areas which could lead to investigative careers in **mental health**." Participants may choose laboratory training in the fields of their choice (pharmacology, neurochemistry, neurophysiology) and in specialized research areas in

psychology. Work in clinical psychiatry will be provided when required. Applicants may hold an M.D. or Ph.D. degree; those with Ph.D.'s will be offered sufficient clinical training to provide relevant experience for their research interests. Stipends are $6000 the first year, $7000 the second. (Malcolm Bowers, School of Medicine, Yale University, 333 Cedar Street, New Haven, Connecticut)

New Journals

Antarctic Journal of the United States. Vol. 1, No. 1, January–February 1966. Kurt Sandved, Editor. Replacing *Bulletin of the U.S. Antarctic Projects Officer* (Defense Department) and *Antarctic Report* (NSF), as the official informational organ on U.S. programs in Antarctica. (Information Officer, Office of Antarctic Programs, NSF, Washington, D.C. 20550. Bimonthly; free of charge; supply limited)

International Journal of Cancer. Vol. 1, No. 1, January 1966. E. A. Saxon, Editor. Publication of the International Union Against Cancer. Research papers in English or French, summaries in both languages. (Munksgaard Publishers, 47 Prags Blvd., Copenhagen, Denmark. Bimonthly; $25 a year)

Neuroendocrinology. Vol. 1, No. 1, 1965/66. E. Bajusz, Editor. International journal for basic and clinical studies on neuroendocrine relationships. (Albert J. Phiebig, Box 352, White Plains, N.Y. Bimonthly; $15.50 a year)

Grants, Fellowships, and Awards

Hahnemann Medical College and Hospital is offering research fellowships for the 1967 academic year to M.D.'s interested in **cardiology**. The awards are for training in electrocardiography and vectrocardiography, ecocardiography, myocardial metabolism and electrophysiology, or cardiac catheterization. Stipends are $5000 to $6000. Applicants must have had a year of internship and at least 2 years in medical residency. (Bernard L. Segal, Department of Medicine, Hahnemann Medical College and Hospital, 230 N. Broad St., Philadelphia 19102)

Awards for pre- and postdoctoral training in the organic and biological chemistry of **marine organisms** are

available at the University of Oklahoma. Recipients will gain experience in collecting marine organisms in the Caribbean area and in isolating and determining the structure of biologically interesting substances from marine animals and plants. Research carried out by the predoctoral trainees will be used as the basis of their Ph.D. dissertations. The awards include stipends, tuition fees, and field travel. There are no deadlines for applications. (L. S. Ciereszko, Faculty Exchange, Norman, Oklahoma 73069)

The Public Health Service's division of accident prevention offers aid for research and training in **accident prevention**. Since no single discipline has a monopoly on productive work in the area, individuals and institutions interested in accident-prevention research from any academic viewpoint may apply for the grants. The types of aid and the application deadlines for each are:

Research training grants. Support to colleges and universities for their ongoing, degree-granting programs in the field; this will include stipends for students.

Research grants. Support to educational and other nonprofit institutions for the actual research. Deadlines: *1 June, 1 October, 1 February.*

Fellowships. Separate categories for pre- and postdoctoral applicants who want to attend universities which offer research and training of special interest to the individual. Deadlines: *1 January, 1 April, 1 October.* (Leon G. Goldstein, Research Grants Branch, Division of Accident Prevention, PHS, Washington, D.C. 20201)

The AAAS is accepting entries for its annual **socio-psychological prize** contest. A $1000 award will be presented for the paper which the judges consider best furthers understanding of the psychological-social-cultural behavior of human beings. The prize is intended to "encourage studies and analyses of social behavior based on explicitly stated assumptions or postulates leading to conclusions or deductions that are verifiable by systematic empirical research; to encourage in social inquiry the development and application of the kind of dependable methodology that has proved so fruitful in the natural sciences."

Entries should have a complete analysis of a problem and should include relevant data and an interpretation of

these data in terms of the postulates with which the study began. Unpublished manuscripts and papers published since 1 January 1965 are eligible. Deadline: *1 September*. (For instructions on how to submit entries: AAAS Socio-Psychological Prize, 1515 Massachusetts Ave., NW, Washington, D.C.)

The Helen Hay Whitney Foundation is offering fellowships for M.D.'s and Ph.D.'s interested in biological or medical research careers, preferably related to **diseases of the connective tissues**. Applicants may be from any country but may not be over 35 years old. The appointments are made annually and are renewable for 3 years. Stipends start at $6500, with $500 for each dependent and $500 annual increment. Deadline for applications for 1967–68: *15 August*. (Helen Hay Whitney Foundation, 22 East 65th Street, New York 10021)

Meeting Notes

The 1966 **Engineering Foundation** Research conferences will be held 25 July to 26 August. Attendance will be limited to 100 and will be by invitation or acceptance of application. The registration fee is $140. The first four meetings, to take place at Proctor Academy, Andover, New Hampshire, are:

25–29 July, "Technology and Society"

1–5 August, "Industry and the Young Engineer"

8–12 August, "Interdisciplinary Team Approaches in Engineering"

15–19 August, "Changing Science and Technology—Its Effect on the Professional Engineering Societies."

The University of California, Santa Barbara, will be the site of the meeting, 22–26 August, on "Technology and the City Matrix." The final session, "Particulate Matter Systems—Their Simulation and Optimization," will be held at the University School of Milwaukee. (Engineering Foundation, 345 E. 47 Street, New York 10017)

The call for papers has been issued for a **nuclear science** symposium, to be held in Boston 19–21 October. The theme of the meeting will be instrumentation in space and laboratory, and papers are desired on nuclear instruments and circuits, data handling and acquisition, reactor instrumentation, and radiation detectors. Sponsors: Nu-

clear Science Group of the Institute of Electrical and Electronic Engineers, and the National Bureau of Standards. Presentation time: 10 minutes; abstracts: 100 to 300 words; deadline: *13 June*. (J. A. Coleman, Electron Devices Section, National Bureau of Standards, Washington, D.C. 20234)

Colorado State University will present a "tutorial symposium" on advances in **quantum electronics** 20 June to 1 July in Estes Park, Colorado. Attendance will be limited to 100 researchers and advanced students, and no academic credit will be given. The topics to be covered include fundamentals of the optical maser, nonlinear optical effects, quantum noise, application of gas lasers to spectroscopy, and recent advances in pulsed laser technology. The tuition will be $240, and room and board $11 a day. Some fellowships for tuition and lodging will be available. Application deadline: *10 May*. (David F. Edwards, Department of Physics, Colorado State University, Fort Collins 80521)

An international conference on **nuclear physics** will be held 12–17 September in Gatlinburg, Tennessee. The sponsors are the International Union of Pure and Applied Physics, the U.S. Atomic Energy Commission, and Oak Ridge National Laboratory. Invited and contributed papers will be presented. Attendance at the conference is by invitation only; a limited number of invitations are available. Papers deadline: *22 July*. (Alexander Zucker, Oak Ridge National Laboratory, Post Office Box X, Oak Ridge, Tennessee 37831)

Lehigh University will conduct an NSF-sponsored conference on **colloid, surface, and macromolecular chemistry**, 11–23 July. The major purposes of the meeting are to encourage the introduction of these areas into standard undergraduate chemistry courses, to help instructors who want to develop advanced courses in colloid or polymer chemistry, and to present current trends in research. Participation will be limited to 30 college teachers. (Albert C. Zettlemoyer, Department of Chemistry, Lehigh University, Bethlehem, Pennsylvania 18015)

An international symposium on **free radicals in solution** will be held at the University of Michigan, Ann Arbor, 21–24 August. The sponsors are the university and the division of organic chemistry of the International Union of Pure and Applied Chemistry. The meeting is in commemoration of the centennial of the birth of Moses Gomberg, who in 1900 discovered the first stable free radical, triphenylmethyl. Ten plenary lectures will be included; there will be no contributed papers. (R. C. Elderfield, Department of Chemistry, University of Michigan, Ann Arbor 48104)

Courses

A workshop on theory and applications of **fracture mechanics** is scheduled for 7–26 August at the University of Denver. The sponsors are Universal Technology Corporation, Dayton, Ohio, and Denver Rsearch Institute. The first 2 weeks will deal with fundamentals of linear elastic fracture theory, effects of plasticity and stress concentration, laboratory fracture-testing and data interpretation, electron fractography, and incorporation of fracture mechanics in design. The 3rd week will be spent on advanced theoretical topics and on testing and design. Attendance at the first 2-week session is not prerequisite for enrollment. Applicants must have a college-level background, experience in mechanical or metallurgical engineering, and a knowledge of calculus and ordinary differential equations. (David L. Wells, Department 75, Universal Technology Corporation, P.O. Box 7, Dayton, Ohio 45449)

The University of Michigan has published a brochure describing the 38 short courses it will offer between May and August for engineers, scientists, and managers. The booklet, **Engineering Summer Conferences,** lists the title, dates, prerequisites, fee, content, and staff of each course. Copies of the brochure and complete information on the courses are available from Engineering Summer Conferences, West Engineering Building, University of Michigan, Ann Arbor 48104.

An international course on the techniques of **freeze-drying** will be offered 18–27 July in Lyon and Dijon, France. Discussion will center on the basic principles of freeze-drying and its applications to biology, to human and veterinary medicine, and to the pharmaceutical industry. A fee of 1700 francs (about $350) will cover the expenses of the course, along with room,

board, and special programs. An additional 600 francs will be charged for participants' wives, and separate excursions and entertainment are being arranged for them. (International Course of Lyophilization, 17, rue Bourgelat, Lyon, France)

A course on methods for the **preparation and characterization of materials** is scheduled for 31 May to 10 June in the Materials Research Laboratory, Pennsylvania State University. Emphasis will be on high band gap materials such as oxides, sulfides, and halides. (Conference Center, Pennsylvania State University, University Park)

Scientists in the News

Jerome B. Wiesner, dean of the school of science at MIT, has been named a nonresident fellow of the Salk Institute for Biological Studies, San Diego, California. Under the appointment, he will spend part of each year at the Salk Institute, helping to develop its academic and scientific program.

Roy H. Garstang, professor of astrophysics at the University of Colorado, has become chairman of the Joint Institute for Laboratory Astrophysics. The institute is a joint project of the university and the National Bureau of Standards; it conducts research and graduate study in atomic and astrophysics, and in related sciences.

Frederick Reines, chairman of the physics department at Case Institute of Technology, has been appointed professor of physics and dean of physical sciences at the University of California, Irvine.

Kenneth F. Vernon has been appointed director of the Agency for International Development's office of engineering. He had been chief of the engineering division of the AID regional bureau for the Near East and South Asia since 1964.

John J. Karakash, head of the electrical engineering department at Lehigh University, has been appointed dean of the school's college of engineering.

E. Gartly Jaco, professor in the school of public health and the department of sociology at the University of Minnesota, will become chairman of

the department of sociology at the University of California, Riverside, on 1 July.

Sheldon Wolff has become professor of cytogenetics and a research cytogeneticist at the University of California Medical Center, San Francisco. He had been on leave from Oak Ridge National Laboratory as visiting professor of radiation biology at the University of Tennessee.

Louis J. Battan, professor of meteorology and associate director of the Institute of Atmospheric Physics at the University of Arizona, has been elected president of the American Meteorological Society.

Whittie J. McCool, in the division of operational safety of the Atomic Energy Commission, has been appointed the AEC's scientific representative in Tokyo, succeeding **Peter A. Morris**, who has returned to the U.S. to become director of the division of operational safety.

Recent Deaths

William Parker Anslow, Jr., 53; professor and former chairman of the department of physiology at the University of Virginia medical school; 17 March.

Howard Coonley, 89; former director of the American Standards Association and first president of the International Organization for Standardization; 25 February.

Enrique E. Ecker, 79; professor emeritus of immunology at Western Reserve University; 5 March.

Franklin Hollander, 67; chief of the gastrointestinal physiology research laboratory at Mount Sinai Hospital, New York; 24 March.

Alfred N. Richards, 90; professor emeritus and former vice president of medical affairs at the University of Pennsylvania; president of the National Academy of Sciences, 1947–1950; 24 March.

Joel Stebbins, 87; director emeritus of the Washburn Observatory, University of Wisconsin; 16 March.

Erratum: In the report "Radiocarbon samples: chemical removal of plant contaminants" by C. V. Haynes, Jr. [**151**, 1391 (18 March 1966)], the word "no" was erroneously omitted from the first sentence of the fourth paragraph. The paragraph should have begun, "To test the method further, an artificial sample was prepared by mixing 8.18 g of charcoal that had no C^{14} activity. . . ."