

trying to avoid the draft by the more conventional methods that seem to be as well known to American males as how to drive with one arm—methods that run from simply staying in school, to developing asthma, to hinting darkly about suicidal or homosexual tendencies. There may also be efforts to enlarge the definition of conscientious objection—already broadened in recent years—to include opposition to particular wars deemed “unjust.” These methods are by no means officially counseled, and may not do anything to improve the student “image” among already inflamed draft boards, but they have been in use for years: a major offense of the student protest movement, in the opinion of those who want, in effect, to “keep draft-dodging respectable,” appears to have been their attempt to make the sub rosa system explicit.

As for the draft itself, it now appears inevitable that it will go on and that some students will continue to be called. If the system works as it is supposed to, students who are not making satisfactory progress, who drop out of school for one or another reason, or whose academic program is only part-time because of outside employment, for example, will probably get their greetings first; but other individuals, both graduates and undergraduates, will not be immune. At the moment there is talk of reinstating the nationally administered achievement and aptitude testing program that was developed during the Korean war and continued in use during the 1950's, to provide local draft boards with a standardized criterion for judging whom to defer. To the students in good standing who look worriedly over their mail every day, and to the professors, administrators, and employers who want to avoid disruption of their programs, the advice of the Scientific Manpower Commission is, “understand your rights and your responsibilities and understand them fast.” It is not unusual, for example, for a student to find himself drafted because of failure to appeal a I-A classification within the 10-day limit. The commission believes that, whatever else may be influencing the student draft situation, plain ignorance is also taking a toll, and that among the many unpleasant situations that are continuing to arise are several that could be happily resolved if the individuals involved did the right thing at the right time.

—ELINOR LANGER

Announcements

The \$1000 AAAS-Westinghouse Science Writing Awards will be presented this year to William Hines and Lawrence Lessing. Hines, science writer for the *Washington Star* since 1958, was selected for his series of articles on the Mariner IV flight to Mars. Lessing, associate editor and staff writer for *Fortune*, was cited for his article in the February issue, entitled, “Solving the Riddle of the Shuddering Earth,” which discussed research on the causes of earthquakes.

Honorable mention in the newspaper category will go to Raymond Bruner, science editor of the *Toledo Blade*, for a series on pollution; magazine honorable mentions will be awarded to Max Gunther, a freelance writer, for an article on DNA, entitled, “The Secret of Life,” in the 3 July issue of *Saturday Evening Post* and to Warren R. Young, for his report in *Life*, 18 December 1964, called “Turbulence—Hidden Giant in the Sky,” about the dangers of turbulence in upper altitudes.

The awards, made possible through a Westinghouse Educational Foundation grant, will be presented 27 December in Berkeley, during the AAAS annual meeting.

Drexel Institute of Technology is offering its first doctoral programs in science and engineering. Initially, degrees will be awarded in chemistry, physics, applied mechanics, and materials engineering. Fellowships, teaching assistantships, and other forms of financial aid are available. Additional information may be obtained from the Dean of Admissions, Drexel Institute, Philadelphia, Pennsylvania 19104.

Grants, Fellowships, and Awards

The Joseph P. Kennedy, Jr., Foundation is accepting nominations for its awards for work in the field of **mental retardation**. The following awards, carrying cash prizes of \$5000 to \$25,000, will be made:

Scientific research award: to an investigator in the biological or behavioral sciences who has made outstanding contributions to our knowledge of mental retardation.

Service award: to the individual or group developing outstanding programs of identification, care, rehabilitation, or education of the mentally retarded.

Leadership award: to a person whose activities on behalf of the mentally retarded have led to increased individual and community effort.

Deadline for receipt of nominations: 15 January. (International Awards, Joseph P. Kennedy Jr., Foundation, 1411 K Street, NW, Washington, D.C. 20005)

The University of Chicago **graduate library school** is offering approximately 15 scholarships and fellowships for the 1966–67 academic year, in amounts up to \$4000; recipients will pay their own tuition, \$420 per quarter. Applicants may hold their bachelor's degree in any field. Deadline for receipt of applications: 1 February. Research assistantships are also offered, for which applications will be accepted all year. Recipients will work 20 hours a week and will be paid on an hourly basis, depending on their qualifications. (Dean, Graduate Library School, University of Chicago, Chicago, Illinois 60637)

The Yale University school of **forestry** is offering scholarships, fellowships, and assistantships to students in master's or doctor's programs for the 1966–67 academic year. Scholarships pay tuition costs; fellowships carry grants of up to \$4000; and assistantships provide \$850 to \$3000 during the school year, with additional stipends for summer work. Deadline for applications: 25 January. (Registrar, Yale School of Forestry, 205 Prospect Street, New Haven, Connecticut 06511)

Two \$5000 Turttox scholarships for the 1966–1967 academic year are available from the General Biological Supply House, Inc. Applicants must be U.S. citizens, in graduate school and working toward a doctoral degree in **botany, zoology, or biology**. The awards will be granted on the basis of the applicants' promise in teaching and research careers. Deadline for receipt of applications: 1 February. (F. A. Brown, Jr., Department of Biological Sciences, Northwestern University, Evanston, Illinois)

Indiana University is offering graduate awards for study toward the Ph.D. in **chemical physics**. Graduate school fellowships carry stipends of \$2000 to \$2400 for 10- to 12-month periods. NDEA fellowships are granted for 3 years, with stipends of \$2000 to \$2400, plus a \$400 annual dependent allow-

ance. NASA traineeships are granted for 2 years and carry annual stipends of \$2400, plus a \$1000 maximum allowance for dependents. Applicants must have undergraduate training in chemistry or physics and a good background in mathematics. Deadline for receipt of applications: *1 February*. (R. A. Bonham, Department of Chemistry, Indiana University, Bloomington 47405)

Training fellowships are available in the **pediatric mental health** unit at the University of California's San Francisco Medical Center. The program will emphasize understanding and managing problems of chronically ill children and those with mental and physical disabilities. Fellows will work closely with the patients and their families and will follow their progress throughout the fellowship year. Training will include psychological evaluation, interviewing techniques, instruction in problems unique to various physical and mental conditions, use of community resources, and normal growth and development.

Applicants should have completed their residency training in pediatrics, be U.S. citizens or have filed an intent to become a citizen, and be licensed in the U.S. There is no deadline for receipt of applications. (H. Gofman, Pediatric Mental Health Unit, Department of Pediatrics, University of California, San Francisco Medical Center, San Francisco, California)

Meeting Notes

The **International Radiation Protection Association** plans to hold its first international congress in Rome, 5-10 September. Papers are invited on all aspects of health physics. Abstracts: 200 to 300 words in English, French, German, Italian, or Russian, with English translation of those in the other languages; deadline: *31 March*. Persons planning to contribute a paper are being asked to submit a tentative title by 31 January. (C. Polvani, Casella Postale 2359, Rome, Italy)

The **American Geophysical Union** has scheduled its annual meeting for 19-22 April in Washington. Papers are requested for sessions on all areas of geophysical research. Deadline for receipt of titles and abstracts: *15 January*. (W. E. Smith AGU, 1145 19th Street, NW, Washington, D.C. 20036)

Travel grants to the 20th international congress of **ophthalmology**, next August in Munich, are available through funds from the National Institute of Neurological Diseases and Blindness. Applicants must be U.S. citizens or permanent residents. Preference will be given to contributors to the congress and to persons active in ophthalmology research but with not more than 10 years of postdoctoral work. Deadline for receipt of applications: *1 February*. (B. Becker, Department of Ophthalmology, Washington University School of Medicine, St. Louis, Missouri 69110)

A conference on **aerodynamic deceleration systems** is scheduled for 7-9 September in Houston. The sponsor will be the American Institute of Aeronautics and Astronautics. The object of the meeting is to report on the current state of technology of manned and unmanned recovery systems. Topics to be covered include fundamentals, systems, components, and tests. Abstracts: 500 to 1000 words; deadline: *24 January*. (R. S. Ross, Goodyear Aerospace Corp., 1210 Masillon Road, Akron, Ohio 44315)

Courses

A course on methods of **operations research** will be presented at the University of Miami, 31 January to 4 February. Participants must have had training in mathematics through calculus. The \$175 fee will cover tuition, texts, and supplies. (A. H. Dana, Division of Continuing Education, University of Miami, Coral Gables, Florida)

The University of Florida will present a postgraduate seminar on problems related to the **kidney**, 20-22 January. Topics to be covered include glomerulonephritis, hypertension, renal failure, and renal tubular dysfunction. (W. B. Weil, Jr., Department of Pediatrics, University of Florida School of Medicine, Gainesville)

Scientists in the News

Luis W. Alvarez, physics professor at the University of California, Berkeley, has received Case Institute of Technology's annual Albert A. Michelson award for his work in nuclear physics. He was cited for "the discovery of

significant properties of cosmic rays, neutrons, isotopes, and nuclear transformations; for leading in the development of quantitative tools for nuclear physics, and for pioneering in radar and aircraft landing systems." The award, in honor of America's first Nobel Prize winner in the sciences, carries a \$5000 honorarium.

The University of California, Davis, has appointed **Leo K. Bustad** as director of the radiobiology laboratory and professor of radiation biology. He had been in the biology department of Battelle-Northwest, in Richland, Washington.

Carl A. Moyer, head of the department of surgery at Washington University school of medicine, has been named director of research at Michigan Technological University.

John C. Finerty, associate dean of the University of Miami medical school, has been named dean of the Louisiana State University school of medicine.

Recent Deaths

C. Raymond Adams, 67; professor emeritus of mathematics at Brown University; 15 October.

Philip Vincent Cardon, 76; former director-general of the Food and Agriculture Organization of the U.N.; 13 October.

Carter Davidson, 60; president of the Association of American Colleges; 20 October.

Luther P. Eisenhart, 89; dean emeritus of the Princeton University graduate school; 28 October.

Marcus I. Goldman, 84; retired geologist with the U.S. Geological Survey; 2 October.

Fred H. Hull, 67; retired professor of agronomy, University of Florida; 19 September.

James A. Jenkins, 61; professor of genetics and former chairman of the department, University of California, Berkeley; 15 September.

Frank Kerekes, 69; dean emeritus of the Michigan Technological University faculty; 25 October.

Alden H. Miller, 59; professor of zoology and director of the Museum of Vertebrate Zoology, at the University of California, Berkeley; 9 October.

Meredith Raines Miller, 79; retired agricultural chemist of the Nevada

Agricultural Experiment Station; 22 August.

Paul H. Mueller, 67; winner in 1948 of the Nobel Prize for Medicine and Physiology for his discovery of insecticidal properties of DDT; staff member of Geigy Chemical Corp.; 12 October.

Boris Shavyrin, 63; Soviet designer of mortars and rockets; 9 October.

Constantine D. Sherbakoff, 87; retired head of the plant pathology department at the University of Tennessee; 13 August.

Royal Sorensen, 83; professor emeritus of electrical engineering at California Institute of Technology; 29 October.

William N. Steil, 89; professor emeritus of botany at Marquette University; 5 October.

Robert R. Williams, 79; first person to synthesize vitamin B₁; 2 October.

Major Contracts and Grants

The National Association of Educational Broadcasters (NAEB) will conduct a feasibility study of an **educational communications system** under a \$145,000 grant from the U.S. Office of Education. Co-sponsor of the project will be the Committee for Institutional Cooperation, a voluntary organization of 11 midwestern universities. The study aims at pointing up possible benefits of a network that would enable CIC members to share programmed material and provide for inter-institutional communication on instructional, research, and administrative activities. The study will continue through September. John Witherspoon is the project director.

A **National Center for School and College Television** will be established at Indiana University under a contract between the Indiana University Foundation and the U.S. Office of Education. The contract, \$1,104,652 over 2 years, will allow the center to provide courses via television and information about the instructional uses of TV. The center plans to enlarge the National Instructional Television Library (NITL), a project begun in 1962 by the National Educational Television and Radio Center in New York. Edwin G. Cohen, former director of NITL, has been appointed executive director of the new center.

The Ford Foundation has announced a \$4.4 million grant to Cornell University to be used by the school's divi-

sion of **biological sciences**. Part of the money, \$1.7 million, is to go for developing the division's teaching program and for increasing its available space and facilities. The remaining \$2.7 million is being given to the university in a lump sum, for faculty development over a 10- to 15-year period; this is expected to include establishment of at least 14 new professorial-rank positions. The 1-year-old division is directed by Robert S. Morison.

Stanford University has received \$3.5 million from the U.S. Office of Education to establish a **Center for Research and Development in Teaching** within the school of education. Research, demonstration, and dissemination will be concerned with improvement of teacher education in colleges and universities and of teaching practices in schools and colleges. Robert N. Bush and N. L. Gage are directors of the new center.

The National Science Foundation has given 59 grants, totaling \$1 million, to colleges, universities, and non-profit laboratories throughout the country to provide **research opportunities for teachers** from colleges that lack research facilities. The grants will enable the teachers to participate as research associates in projects conducted by the grantee institutions. In addition, some of the summer participants may secure limited funds for continuation of their projects at their home institutions during the following academic year. The programs last 8 to 12 weeks and cover many areas of science, engineering, and mathematics. Participants, selected by the grantee institutions, receive stipends and dependency and travel allowances. Participants are chosen by the project directors, not by NSF, and inquiries and applications should be sent to the project directors. (A brochure listing the institutions and project directors is available from NSF; postcard requests should be sent to: College Teacher Programs, National Science Foundation, Washington, D.C. 20550)

An **Injun spacecraft** for use in a scheduled 1967 satellite launch will be prepared by the State University of Iowa, under a NASA contract valued at over \$1 million. James A. Van Allen is principal scientific investigator. The Injun Explorer will be teamed with a 12-foot inflatable Air Density Explorer

and flown on a single Scout launch vehicle, in the same way that Explorers XXIV and XXV were orbited in November 1964. The work will be conducted at Langley Research Center under the general direction of the NASA Office of Space Science and Applications.

A **space sciences and engineering** laboratory has been established at Pennsylvania State University, with the support of a \$600,000 NASA grant. The laboratory will be part of the university's Institute for Science and Engineering; it will provide administrative and technical assistance and advice and will serve as a collecting point for space research information at the university. Paul Ebaugh, assistant dean for research in the college of engineering, has been named head.

The Aeronutronic Division of Philco Corporation last month received a \$30 million contract from the U.S. Air Force ballistic systems division, for a **re-entry measurements program** (RMP). The program will include developing and building payload experiments and a standardized payload deployment system. The experiments will be flown on Atlas missiles launched from Vandenberg Air Force Base, down the Pacific Missile Range. J. E. Richards is program manager.

Other major contracts and grants awarded include the following:

Research and Development

Duke Univ.: \$406,700, NSF; facility for studies of prosimians; J. Buettner-Janusch, chief investigator.

Educational Services, Inc., Watertown, Mass.: \$600,000, NSF; support of Elementary Science Study.

Hahnemann Medical College and Hospital, Philadelphia: \$614,955, NIH; biochemical research computer center; P. A. Scheinok, director. \$100,000, NIH; signature analysis of ultrasonic cardiac echos; B. L. Segal, principal investigator.

University of New Hampshire: \$164,710, NSF; expansion of doctoral program in mathematics; M. E. Munroe, project director.

New Mexico State Univ.: \$300,000, NASA; research in science and engineering; J. E. Weiss, project director.

Cornell University medical college: \$130,000, John A. Hartford Foundation; illnesses in children, resulting from large blood transfusions; M. E. Erlandson and J. Golubow, principal investigators.

National Academy of Engineering: \$100,000, Alfred P. Sloan Foundation; support of initial operations.

Michigan Technological Univ. and se-

lected hospitals and health agencies in northern Michigan: \$158,455, W. K. Kellogg Foundation; cooperative programs for improvement of patient care and reduction of hospital costs.

New York Univ. medical center: \$373,002, John A. Hartford Foundation; role of lymph system in congestive heart failure; R. H. Clauss and A. E. Dumont, principal investigators.

Ohio State Univ. college of medicine: \$267,000, U.S. Army Medical Research and Development Command; effects of physical conditioning and acclimatization to hypoxia on work tolerance at high altitude; C. E. Billings and D. K. Mathews, project directors.

University of Pennsylvania: \$203,242, Div. of Chronic Diseases, Bureau of State Services, U.S. Public Health Service; graduate training in sociology of health and welfare; O. Pollack, project director.

Princeton Univ.: \$377,238, National Inst. of Child Health and Human Development; American family planning practices; C. F. Westoff and N. B. Ryder, principal investigators.

Rice Univ.: \$3,676,100, estimated, NASA; Explorer satellite for studies of near-earth atmospheric phenomena; B. J. O'Brien, principal investigator.

Wayne State Univ.: \$244,000, NSF; production, with computers, of Russian-English scientific and technical dictionary; H. Josselson and W. Hoffman, project directors.

The following have received support from the National Cancer Institute for research on bovine leukemia:

University of California school of veterinary medicine, Davis: \$472,351; transmission studies; G. H. Theilen, principal investigator;

University of Pennsylvania: \$400,000; experimental and natural transmission; R. R. Marshak, principal investigator;

University of Minnesota school of veterinary medicine: \$98,000, susceptibility of calves to known tumor viruses; D. K. Sorenson, principal investigator;

South Jersey Medical Research Foundation, Camden: \$257,600; etiological studies; R. Dutcher, principal investigator.

Construction

Case Inst. of Technology: \$2,226,000, NASA; new facility, Case Laboratory for Space Engineering Research.

University of Georgia: \$412,118, U.S. Office of Education; first year support, center for study of learning potential of children.

University of Rochester: \$1 million, NASA; addition to Space Science Center.

The Division of Research Facilities and Resources, NIH, has awarded matching grants to the following institutions:

Human Resources Center, Albertson, N.Y.: \$185,000; expansion of research facilities.

Massachusetts General Hospital, Boston: \$2,210,900; health research laboratories.

University of Michigan, Ann Arbor: \$2,545,000; six-story addition to the medical science building.

Southwest Foundation for Research and Education, San Antonio, Texas: \$796,500; laboratories and primate holding and isolation facilities.

University of Florida: \$538,150, NSF; biological sciences research building.

Board of Public Instruction of Escambia County, Pensacola, Florida: \$177,768, HEW; activation of ETV station 21.

University of Hawaii: \$138,651, HEW; activation of ETV station 11, Honolulu.

Erratum: In the paper "The cosmical constant," by G. C. McVittie (12 Nov., p. 918), the sentence beginning on line 44 of column 2 should have read "... the inverse square of the time for $(2\pi)^{-1}$ revolutions in the first Bohr orbit is of the order of 10^{33} sec⁻²" instead of "... 10^{-33} sec⁻²."

REPORT FROM EUROPE

E. B. Chain Accused of Contempt of Italian Judiciary

London. In Italy, Ernst Boris Chain, who shared the 1945 Nobel prize in medicine for his work in developing the manufacture of penicillin, is being prosecuted for contempt of the judiciary. In the past 2 years, a number of Italian scientist-administrators, among them Felice Ippolito, the geologist who headed the Italian atomic energy effort, and Domenico Marotta, founder of the Istituto Superiore di Sanità in Rome, have been tried and convicted on charges of malfeasance in office. (The issues involved in these prosecutions, in which private jealousy,

concern for public morality, and political motives are mixed, were discussed in *Science*, 14 August 1964 and 9 April 1965).

The charges against Chain arise from his association with Marotta and the Istituto Superiore di Sanità. Chain worked at the institute, at Marotta's invitation, from 1948 until 1964. In 1964, under arrangements which had been in process since 1959, he returned to London to run an enlarged department of biochemistry, whose \$3 million building was opened formally early last month, at the Imperial College of Science and Technology.

Chain has consistently defended the record of Marotta, who headed the institute until he retired in 1963. On 25 July 1965, after a trial that lasted through 75 sessions over more than 8 months, Marotta was found guilty of

misappropriation of funds and sentenced to 6 years, 8 months in prison. It is unlikely that Marotta will serve any sentence, for by the time his appeal is handled, he will have passed his 80th birthday and so, under Italian law, cannot be imprisoned. Nonetheless, he is reported to have burst into tears when the news of the sentence was given to him. (Because of his age and health, he did not have to attend the trial).

Much of the money Marotta was accused of misappropriating was in the form of grants, many of them from the United States, to laboratories attached to his institute. One of these attached laboratories, created by a decree of the president of the Italian Republic, was Chain's laboratory of chemical microbiology.

Thus Chain felt an unusual degree of personal responsibility in the Marotta case. He offered himself as a defense witness at the trial, but the judge, on the advice of the public prosecutor, decided that Chain's testimony was not relevant. (The testimony of Daniel Bovet, the other Nobel prize winner at the institute, whose laboratory had also been created by decree of the head of state, was very brief.)

Nonetheless, there were references at the trial to vague charges that Chain had sold patents based on his

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