

the inquiry, and that when the time comes, the committee will produce material to justify its existence. In any case, despite early fears within the scientific community, the Elliott committee is yet to demonstrate any "get science" attitudes.

Daddario Committee

Close by the Elliott committee, in terms of jurisdiction, is the subcommittee on Science, Research, and Development of the House Committee on Science and Astronautics, chaired by Representative Emilio Q. Daddario (D-Conn.).

This subcommittee, which is a creature of the inter-House rivalry over research and development, was established by its parent committee last August when it became apparent that Elliott's investigatory proposal would go through. (Its birth date precedes the Elliott committee's by 3 weeks.) While Elliott was putting together a staff, the Daddario committee held a series of hearings at which eight scientists and science administrators presented their views on problems of science and government. The committee subsequently issued a 14-page statement spelling out 20 science-government issues that it feels bear exploring. (Copies of these documents—*Government and Science Hearings and Government and Science, a Statement of Purpose*—may be obtained without charge from the Science and Astronautics Committee, U.S. House of Representatives, Washington, D.C., 20515.)

At the moment, the entire space committee is deeply involved with space legislation for the coming fiscal year, but a number of activities for the Daddario subcommittee are in the early stages of planning. Among these are working arrangements under which the National Academy of Sciences and the National Science Foundation would provide both advice and supporting studies.

Since the subcommittee is a creation of a benevolent parent committee, it faces no deadlines, and it is going about its business in an unhurried and careful fashion.

Fountain Committee

The oldest of the current congressional inquiries into government support of science is that of the House Subcommittee on Intergovernmental Relations, which is a subsidiary of the Committee on Government Operations. Chaired by Representative L. H. Foun-

tain (D-N.C.), this subcommittee, since 1957, has been looking into NIH's administrative practices, and it can take the credit or blame for NIH's decision to adopt tighter accounting procedures. At the moment, Fountain and his principal staff aide, Delphis C. Goldberg, are looking into fellowship and training grant programs, but no hearings have been scheduled.

In the meantime, relations between Fountain and NIH are as chilly as ever. Fountain feels that NIH, though he concedes it has "improved" to an appreciable degree, is yet to demonstrate proper regard for the sanctity of the taxpayers' money. NIH, in turn, feels that Fountain fails to understand that research cannot be put on a time-clock basis. With these feelings governing the relationship, communication between the two camps remains formal, limited, and a trifle hostile. One element of indeterminable significance is that some of NIH's friends in the House have been expressing concern over the effect of Fountain's work, and they are a source of some comfort for NIH's Bethesda, Maryland, headquarters.

The Fountain Committee has issued a series of reports and hearings, limited quantities of which are available without charge from the Subcommittee on Intergovernmental Relations, Room 101, George Washington Inn, U.S. House of Representatives, Washington, D.C., 20515. Titles are: *NIH Administration of Grants Programs of Research and Training, 1961 and 1962*; *Health Research and Training, House Document 321*; *The Administration of Grants by the National Institutes of Health, 1958 and 1962*.

PHS Review

Finally, the Subcommittee on Public Health and Safety of the House Interstate and Foreign Commerce Committee is in the midst of an apparently leisurely review of a bill that would authorize the Surgeon General to reorganize the Public Health Service. Chaired by Representative Kenneth A. Roberts (D-Ala.), the subcommittee has the authority to write basic legislation affecting the PHS, but since it had been a long time since it had exercised this jurisdiction to any significant extent, it took the approach that it had better first educate itself about the PHS's vast array of activities. Accordingly, it held a series of hearings last April, May, and June at which PHS officials did little more than tell the

subcommittee what it is the PHS does. After this, the subcommittee sent questionnaires to 19 educational institutions, seeking information on the impact and extent of federal aid. As might have been anticipated, the institutions almost unanimously agree that the impact is beneficial and the extent is too limited.

One effect of the slow pace of this inquiry is that the PHS, and its principal subsidiary, NIH, cannot expect any serious consideration of legislative proposals until the subcommittee has completed its work. At present the committee says that it plans further hearings, principally on NIH, but no date has been set. Publication of last spring's hearings has not been scheduled, presumably because the committee wants to put the whole works inside one cover.—D.S.G.

Narcotic and Drug Abuse: Report of Advisory Commission Prescribes for Old Problems, New Dangers

When the report of the President's Advisory Commission on Narcotic and Drug Abuse was finally released late in January, everyone could agree that it was not the product of one of those high-level, high-minded, august, ad hoc study groups which labor long and then recommend a few discreet half measures, further study of the problem, and more money for research.*

This President's commission, chaired by Federal Appeals Court Judge E. Barrett Prettyman, delivered a list of 25 recommendations which, if put into effect, would work a virtual revolution in the administration of the nation's narcotics and drug abuse laws and the management of addicts.

Not everybody in positions of authority and influence agrees with all the recommendations, and indeed some of them have inspired die-hard opposition. What direct effect the report will have on law and policy must remain, for a while at least, a moot question. The report has been sent out to the agencies affected for study and comment, and this will take several weeks. The position of the White House is far from clear. And Congress has not really been heard from, although its reactions can be predicted on the basis of past performance.

But whatever its fate as a blueprint for legislative and administrative action,

* The report is available from the Superintendent of Documents, GPO, Washington, D.C. Price 55¢.

the report should contribute breadth and balance to the public discussion on narcotics and drug abuse, which has been replete with misunderstanding, recrimination, and plain muddle. The report's chief contributions may lie in (i) its emphasis on the long-range problem of rehabilitation of addicts, which has been overshadowed in the past by discussion of questions of enforcement policy and of immediate treatment (withdrawal) of addicts, and (ii) its warning that abuse of the so-called dangerous drugs—barbiturates, amphetamines, tranquilizers—has reached proportions that require new types of control.

The most controversial recommendation of the committee—to shift the functions of the Bureau of Narcotics from the Treasury to the Justice Department—seems to have the longest odds against its implementation.

The Bureau of Narcotics, the agency that has been charged for 30 years with enforcement of the federal laws affecting narcotics and marihuana, has pursued an aggressive policy aimed at preventing addiction by breaking up the illicit traffic in narcotics at home and abroad. The bureau has developed strong ties with Congress, and the enforcement theme has dominated federal policy on narcotics and been reflected in state and local laws. While a good deal of productive research has been done on addictive drugs and on addiction, at the federal hospitals for narcotics addicts operated by the Public Health Service and elsewhere, relatively little was done until recently, at the federal, state, or local level, about long-term rehabilitation of withdrawn addicts.

From a police viewpoint, narcotics addiction is almost automatically associated with crime, since many addicts—particularly heroin addicts, it seems—have police records before they become involved with narcotics or turn to theft on a major scale to support their costly habit. Medically, drug addiction is regarded as a chronic relapsing disease. It is well known that a high percentage of cured addicts relapse when they return to their original environment, and many medical men feel that present laws perpetuate the cycle. This is probably the origin of the conflict, well publicized in an oversimplified form, between those who feel that narcotics addiction is a crime and those who feel it is an illness—of “cops vs. doctors.”

While the two groups seem to feel

themselves less at cross-purposes today than at times in the past, it is not hard to detect a residue of suspicion and resentment. The nub of the difficulty for the doctors is expressed in the interim report of the President's Commission, issued last April, in a section on “legitimate treatment of narcotic addicts.”

One of the most troublesome features of narcotic abuse today is the attitude of physicians. By and large they shun the treatment of addicts. While the Federal narcotics laws since 1914 have expressly permitted a physician to dispense narcotic drugs to a patient in the course of “professional practice only” and for “legitimate medical purposes,” there have never been definite standards as to what constitutes “professional practice” and “legitimate medical purposes.” In this vacuum considerable disagreement has grown up between those charged with enforcement of the Federal narcotics laws and physicians. Physicians have been unwilling to treat addicts for fear of prosecution.

In the view of the Commission, definition of the necessary standards is a responsibility of the medical profession. The Commission has, therefore, requested the American Medical Association and the National Research Council to submit definitive statements as to what constitutes legitimate medical treatment of an addict, both in and out of institutions.

Last October, in response, the AMA-NRC group did publish an expanded statement, “The Use of Narcotic Drugs in Medical Practice and the Medical Management of Narcotic Addicts.” This document was considerably more detailed than the 1962 statement and covered most aspects of the controversy. Whether it will be strong enough to dispel the miasma of confusion remains to be seen. The AMA-NRC group was asked to develop a similar statement on dangerous drugs, but the group demurred because it felt there was insufficient time to produce such a statement by the time the commission needed it.

There is no question that many physicians feel that the lines on legitimate treatment are blurred and that narcotics laws have been enforced in a way that has created what the medical men regard as an atmosphere of harassment.

Bureau of Narcotics officials deny that there is a solid basis for such allegations and cite the relatively small number of prosecutions of physicians. Bureau officers are, however, strongly critical of what they describe as a small group of doctors who favor ambulatory treatment of addicts by physicians. The federal officials are convinced that an ambulatory program would, in practice,

mean that addicts would be given drugs to maintain habits rather than treatment to withdraw the drugs.

The matter of outpatient treatment has been a perennial issue in the debate over policy on treatment of drug addicts. Over the years, organized medicine has been most prominently represented in the discussion by committees of the American Medical Association and the National Research Council.

While the joint AMA-NRC position has been consistent on the subject, it seems also to have been consistently misunderstood, and a series of clarifications have been deemed necessary.

In 1962 the AMA-NRC group went on record to correct the “public and professional” impression that the AMA favored the establishment of community ambulatory clinics. In this restatement of policy the AMA-NRC said that, on the basis of current knowledge, it opposed general nonexperimental facilities for the outpatient treatment of drug addicts but endorsed “an experimental facility for the out-patient treatment of drug addicts, to explore the possibility of dealing with at least some types of addicted persons in the community.”

Addiction Not a Crime

The same statement also aimed at clearing up public and professional impressions that “the Federal Bureau of Narcotics believes drug addiction to be a crime; a belief that is contrary to the federal law and its application by the Bureau.”

The very fact that the AMA-NRC group felt it necessary to iterate its position on ambulatory treatment and to give the Bureau of Narcotics a clean bill illustrates, as well as anything can, the confused state of opinion and feeling on the question of drug law enforcement and management of addicts.

In view of this state of affairs it is understandable that the President's commission called for a clarification of the ethical and legal standards for treating addicts.

The Bureau of Narcotics, for its part, makes no excuses for its enforcement orientation, which is explicitly prescribed in the laws it executes. Established in 1930 with officers recruited largely from among Treasury Prohibition agents, the bureau's powers were based primarily on the first federal narcotics control act, the Harrison act of 1914, and the 1921 Narcotic Drugs Import and Export Act, controlling the importation of cocaine and opium.

Even before the bureau was organized, the number of American drug addicts had been sharply reduced below the number—estimated at 200,000 or more—in the days when narcotics were almost literally as easy to obtain as aspirin. The most frequently cited estimate of the total number of narcotics addicts today is 60,000, although many persons familiar with the problem think the number is much higher.

Critics of the bureau have questioned its effectiveness, and bureau officials reply by pointing to data which appear to indicate successful inroads on the illicit drug traffic.

In World War I, say bureau officials, one of every 1500 men examined for military service was rejected because of drug addiction. In World War II, the rate was down to 1 in 10,000. Before World War II, heroin, the drug of choice of the American addict, was available in pure form. Today, illicit heroin is adulterated to the extent that the addict buys it in a form that is only 3 to 5 percent pure. Public Health Service doctors affirm that classic withdrawal symptoms in their full range are no longer observed among addicts treated in federal facilities because of the impurity of the heroin available. The cost of a kilogram of pure heroin, which is purchased by middlemen and then "cut" before it is retailed to addicts, has risen from about \$7000 after World War II to \$18,000 now, say Bureau of Narcotics officials.

It is a source of pride to narcotics agents that they alone among federal law enforcement agencies espoused a "mafia" theory of organized crime in the U.S. which has now been verified, and that more criminals identified with big crime have been convicted on narcotics charges than on other charges.

The bureau was given something like a massive deterrent, beginning in 1952, when Congress passed legislation sponsored by Representative Hale Boggs (D-La.) which required mandatory minimum sentences for all narcotics convictions. After congressional hearings in 1955 and 1956, the Boggs Act was amended to make penalties stiffer. Possible fines for narcotics offenses were increased from \$10,000 to \$20,000. More important, while mandatory minimum sentences for offenses involving possession, prescription, or registration of narcotics were left at 2 to 5 years for the first conviction, 5 to 10 for the second, and 10 to 20 for the third, the minimums for conviction on

violations related to selling, transfer, or smuggling were raised to 5 years for the first offense and 10 years for subsequent ones. In general, probation or parole is prohibited. Conviction for sale to a person under 18 carries a minimum sentence of 10 years, and if the drug were heroin a jury could give a death sentence.

Raising the Risks

George H. Gaffney, Narcotics Bureau assistant to the commissioner, says the new laws make "the risks commensurate with the profits" and also act as a "tremendous clam opener"—that is, an encourager to arrested offenders to give information to the authorities.

The bureau's critics complain that the law is often applied stringently to addicts rather than to drug-ring operators or "pushers," at whom the strongest provisions were aimed. The bureau replies that six out of ten persons arrested on federal narcotics charges are not narcotic users. Gaffney says that federal agents who pick up persons for possession of narcotics often do not make a federal case of it but, rather, turn the prisoners over to local or state authorities for action.

In its report the commission recommends that "the penalty provisions of the federal narcotics and marihuana laws which now prescribe mandatory minimum sentences and prohibit probation or parole be amended to fit the gravity of this particular offense so as to provide a greater incentive for rehabilitation."

It is fair to say that sanction for the bureau's general position is found in the popular view which holds that drug addicts are criminals and degenerates and that those who traffic in drugs rank high among menaces to society.

Congress shares this view and supports the enforcement approach to the drug problem. The Bureau of Narcotics, in company with the FBI, is accorded a kind of preferential treatment on Capitol Hill. The Bureau of Narcotics has forged close links with the legislators responsible for the laws it enforces. For example, Henry L. Giordano, now Commissioner of the Bureau of Narcotics, served as chief investigator for the Boggs subcommittee of the Ways and Means Committee during the hearings in the mid-fifties.

The bureau is a small agency with 290 agents and total personnel of 430. It operates on a budget of about \$5.5 million a year. Therefore, its demands

are modest (this appeals to Congress), and its agents' courageous action in dangerous undercover and infiltration work is much admired. For these reasons the commission recommendation that the Bureau of Narcotics be transferred to the Justice Department is likely to fall on unsympathetic ears in Congress.

The bureau is well able to defend itself, and even before the report was released the word was out on the Washington jungle telegraph that the bureau opposed its transfer or absorption. Boggs, incidentally, said last week that some revisions of the law might be possible but he thought fundamental changes affecting prevention policies unlikely.

The commission's published reasons for advocating transfer of the functions of the narcotics bureau to the Justice Department are mainly two: (i) the bureau is not really a revenue-collecting unit, and top Treasury officials concerned with fiscal matters are unsuited to overseeing the police work entailed in narcotics work; and (ii) the reported serious increase in the abuse of dangerous drugs has created a criminal problem similar to that in the narcotics sector, and the commission would like to see a centralization of authority over narcotics and dangerous drugs in the Justice Department.

This would mean moving responsibility for regulation and control of dangerous drugs out of the Food and Drug Administration in the Department of Health, Education and Welfare.

In its report the commission says, "The record of the Food and Drug Administration on stopping illicit sales of dangerous drugs is unsatisfactory, partly due to the limited statutory powers of the federal government. The Federal Food, Drug and Cosmetic Act does not now permit detailed regulatory control. The record of enforcement by the Food and Drug Administration in this area reflects a lack of sufficiently trained inspectors with the traditional authority of law enforcement officers to carry weapons, to search and seize and to make arrests."

At the 1962 White House Conference on Narcotics and Drug Abuse, which led to establishment of the presidential commission, FDA Commissioner George P. Larrick noted that the FDA had got into the field of controlling the distribution of dangerous drugs "by the back door," while pursuing its main duties of enforcing fed-

eral laws on strength, quality, purity, and labeling of drugs on the market. The problem of preventing the non-medical use of these drugs, as a practical matter, goes beyond FDA's powers.

Not only is the responsibility for drug and narcotics law enforcement fragmented among agencies in the federal government but the whole matter of policy formulation in the field appears to have suffered from a history of separatism affecting groups concerned with enforcement, treatment, and research. The proceedings of the 1962 White House conference reflect a typical pattern of segregation of experts, with one panel devoted to law enforcement and controls, another to experimental methods of treatment, another to research, another to civil commitment and parole, and a fifth to legislation. Veterans of the conference say that no strenuous efforts were made to break down the walls between experts and their particular preserves.

However, as experienced an observer as Dale Cameron, superintendent of St. Elizabeths Hospital in Washington and chairman of the NRC and AMA committees on drug addiction and narcotics, feels that this division is more apparent than real. He points to the Bureau of Narcotics endorsement of the joint AMA-NRC statement on the narcotics addiction problem and the bureau's subsequent administration of a physician-registration program as evidence that members of the two camps are consulting and cooperating.

Noncommitment

The NRC committee on drug addiction and narcotics in recent years, under Cameron's chairmanship, seems to have undergone something of a change in personality. For a long time after its establishment in 1929 the committee had the reputation in Washington of being concerned primarily with research in pharmacology and biochemistry and particularly with the quest for a non-addicting analgesic.

Its members were regarded as having a passion, not uncommon among scientists, for shunning controversy involving politics or public policy, and the result seems to have been that the group had little direct influence on the debate over the drug-addiction problem.

A decade ago the committee was dominated by pharmacologists and chemists, but, particularly under Cameron's chairmanship, the membership

has been diversified through the addition of psychiatrists, physicians, and even a sociologist, whose presence make the committee more willing, as recent actions suggest, to contribute to the formulation of broad public policy.

The matter of treatment and rehabilitation of drug addicts is the liveliest topic in the field. Until very recently there has been relatively little activity in this sector by either private or public agencies. The National Institute of Mental Health is the primary federal research agency on drug abuse and is the agency responsible for funding demonstration and pilot programs on control of narcotics addiction in the communities. At the White House Conference, NIMH director Robert H. Felix lamented, "how little experimentation has been done and how few demonstration projects there have been." In the 5 years before 1963, NIMH spent about \$6 million on extramural research in drug abuse. In fiscal 1964, alone, some \$2.3 million was spent, and the trend presumably will continue to be up.

The President's commission favors shifting major responsibility for the treatment of addicts to local and state agencies and recommends that "the federal government encourage and increase assistance to states and municipalities to develop and strengthen their own treatment programs and confine its activities in the immediate future to research instead of maintaining extensive public treatment programs."

Setting up community programs along mental-health lines appears to be a logical answer, given the definition of the problem in the AMA-NRC statement, which says, in part, that "physicians have a fundamental responsibility to treat narcotic addiction because it is recognized as a medical syndrome based on an underlying emotional disorder."

There are many practical problems inhibiting establishment of community treatment and rehabilitation programs. Public sentiment is often against establishment of, for example, "half-way houses," and in the recent past, at least, public and private employment agencies would not accept applicants with histories of addiction.

One of the proposals of the commission which seems to be favored by almost all parties is that for a "civil commitment" law. Both California and New York have civil commitment laws

which provide for rehabilitation of addicts under long-term supervision.

The commission recommends that a federal civil commitment statute be enacted to provide an alternative method of handling the federally convicted offender who is a narcotic or marijuana user.

In the view of the commission such a statute "would authorize a judge of the United States District Court to commit civilly a narcotic or marijuana abuser convicted of a federal crime (except a crime involving smuggling or trafficking in narcotic drugs in large quantities or the selling of narcotic drugs for resale, or a crime of violence) where the judge determines that the defendant's offense is related to his abuse of drugs and that there are reasonable grounds for belief that the defendant can be rehabilitated by treatment." The authority to commit civilly would be discretionary with the judge.

Commitment would be for 5 years. For at least the first 6 months the person committed would remain in a Public Health Service or Bureau of Prisons facility; he would then be released as a parolee under the close supervision of a federal parole officer. Outpatient services would be provided, and the individual would be tested periodically to insure that he was not using narcotics again. If it were determined that the person had successfully completed treatment he might be discharged and the conviction would be set aside. If he relapsed he could be returned for treatment. If he proved uncooperative or unresponsive or if the period of commitment ended before he had successfully completed treatment, he could be returned to the court of original jurisdiction, and criminal proceedings could be resumed.

Such a civil-commitment law would not, of course, affect the addict who has not committed a federal offense. Public Health Service physicians feel that the many addicts who commit themselves for treatment and then leave when the withdrawal process is completed are almost certain candidates for relapse. Many persons in positions of influence, including Narcotics Bureau Commissioner Giordano, favor a compulsory civil-commitment and rehabilitation program for addicts which does not depend on their arrest on criminal charges.

Constitutional questions appear to be involved here, but there are some precedents in both voluntary and com-

pulsory programs for alcoholics and the mentally ill, and Congress is showing interest. There would certainly be dangers involved in such a program, but the problem of rehabilitation of addicts is such a serious one that—as the commission's report makes clear—new initiatives are necessary.

—JOHN WALSH

Announcements

The **American Sociological Association**, under contract with NSF, is compiling a sociological section of the National Register of Scientific and Technical Personnel. In March the association plans to mail questionnaires to U.S. sociologists, and the resulting list is expected to be available this fall. It will include details on the sociologists' level of training, specialties, and professional characteristics. Janice H. Hopper, of the association, is director of the project. Additional information is available from Project National Register, American Sociological Association, 1755 Massachusetts Ave., NW, Washington, D.C. 20036)

Rice University has begun two new graduate programs in **electrical engineering**, leading to the masters and Ph.D. degrees. The programs, one in system and information theory, the other in solid state and physical electronics, are designed for students with degrees in science or mathematics and an interest in engineering applications appropriate to a particular field of science.

Meeting Notes

Cambridge, England, will be the site of an international symposium on **cold cathode tubes**, 17–19 March. The meeting is sponsored by the British Institution of Radio Engineers. Papers are invited on tube development, circuit design, manufacturing techniques, physics of operation, applications, and reliability. (Secretary, Program and Papers Committee, B.I.R.E., 9 Bedford Sq., London, W.C.1)

The University of Rochester will sponsor a conference on **data acquisition and processing** in medicine and biology, 13–15 July. The subjects covered will include medical literature, experimental data, methods of dealing with all aspects of the communications

problems, and systems now in operation. Papers on fundamental and applied data are invited. Deadline: *15 April*. (K. Enslein, 42 East Ave., Rochester, N.Y. 14604)

The fourth international symposium on **comparative endocrinology** will take place in Paris, 20–26 July. Attendance is by invitation from the program committee. Information on the meeting and on invitations is available from L. Gallien, head of the committee, at the Laboratoire d'Embryologie, 9, quai St.-Bernard, Paris 5.

The call for papers has been issued for the ninth symposium on **ballistic missile and space technology**, scheduled 12–14 August, in San Diego, Calif. Papers are welcome on the scientific and engineering aspects, pertinent to military applications. Five copies of the manuscript and of a 40-word, unclassified abstract, are required. Each section of the papers must be marked with appropriate security classification. Participants in the meeting must be eligible to attend classified sessions. Deadline: *3 April*. (C. J. Morrow, Aerospace Corp., P.O. Box 95085, Los Angeles, Calif. 90045)

Grants, Fellowships, and Awards

Fellowships in **forestry** are available through the Charles Bullard fund at Harvard University. They are open to men in public service, colleges, or private forestry; an advanced degree is not required. The fellowships are for 1 year of advanced study and research in any phase of forestry, with programs to fit the needs of the individual recipients. The recipients may study toward an advanced degree if they so desire, but this is not necessary since formal degree requirements might hamper their special research or study programs. Stipends of up to \$15,000 will be offered, to supplement or replace the recipients' salaries. Applications may be submitted throughout the year; however, for persons whose program will cover a regular academic year, the deadline is *1 April*. (Committee on the Charles Bullard Fund for Forest Research, Littauer Center 123, Harvard University, Cambridge 38, Mass.)

Fellowships in **steroid biochemistry** are offered at Clark University and the University of Utah. Stipends are \$6000 for 1 year, for persons with a Ph.D. or

M.D. degree; they will also receive allowances for dependents. Predoctoral candidates, with either a bachelor's or a master's degree, may apply only at Clark; their stipends will be \$1800 for 6 months. Deadline for applications: *1 April*. (K. Eik-Nes, Department of Biochemistry, University of Utah Medical School, Salt Lake City; or W. R. Nes, Department of Chemistry, Clark University, 950 Main St., Worcester, Mass.)

Fellowships are available from the department of oceanography, Oregon State University, for graduate research in **radioecology** or **radiochemistry**. Candidates must have a bachelor's or master's degree in science, and must be candidates for an advanced degree. Summers will be spent in field work, special studies, and research; the academic year will be devoted to course work. The fellowships are for 1 year, renewable for up to 3 years. The stipend is \$2800, plus tuition. Deadline: *1 April*. (C. Osterberg, Department of Oceanography, Oregon State University, Corvallis)

Nominations are invited for the Fritz London award for research in **low temperature physics**. The award and a \$1000 honorarium will be presented during the ninth international conference on low temperature physics, 31 August to 4 September, at Ohio State University, Columbus; the recipient will receive a contribution toward traveling expenses to the conference. Suggestions for the award, preferably from individuals rather than groups, should include supporting statements; there are no citizenship requirements. Deadline: *15 April*. (L. D. Roberts, Oak Ridge National Laboratory, Oak Ridge, Tenn.)

Courses

Georgetown University will present its annual workshop in **nuclear magnetic resonance** 31 March to 2 April, in Washington, D.C. The course will be aimed toward the needs of beginners in high resolution NMR spectroscopy, and will emphasize applications for organic chemists. (A. J. Rosen, Department of Chemistry, Georgetown University, Washington, D.C. 20007)

Georgia Institute of Technology will sponsor a course in **advanced mechanical vibrations**, 27 April to 1 May, in Atlanta. The course is designed to give