the total university research expenditures. The top 20 institutions accounted for 57 percent of the total budget.

11. For a recent expression of this concern, see F. M. Hechinger's report on the Arden House Conference, New York *Times* (8 May 1960).
12. J. D. Millett, *Financing Higher Education in the United States* (Columbia Univ. Press, New York, 1952), p. 177.
13. L. A. DuBridge, "Basic research and the private university," in "Symposium on Basic Research," *Publ. Am. Assoc. Advance. Sci. No. 56* (1959), p. 111.
14. "Statement Concerning the University and Contract Research by the Academic Freedom Committee of the American Civil Liberties Union," p. 2.
15. F. M. Hechinger, New York *Times* (24 Apr. 1960).
16. L. V. Berkner, *Phys. Today*, **7**, 13 (1954).
17. "Education for the Age of Science" (statement by the President's Advisory Committee) (Washington, D.C., 1959), pp. 28–29.
18. The observations reported in this article grew out of a recent study of research organization in the U.S.S.R. and parts of Western Europe. This investigation was supported by a research grant (RG 5289) from the National Institutes of Health, U.S. Public Health Service.

Science in the News

Senate Space Committee Report Is Critical of NASA's Plans for Its New Office of Life Sciences

Last March the National Aeronautics and Space Administration organized its fifth major division, an Office of Life Sciences, whose function is to see that when the time comes to send a man into space the information necessary to keep him alive and healthy will be available. A major share of the necessary research is already being done in Defense Department laboratories, where the military services, for their own purposes, are doing a great deal of work with direct applications in the space program. The Army, for example, is doing work on minimum nutritional requirements, the Navy is investigating the effects on personnel of the restricted and isolated life in long-submerged submarines, and the Air Force is studying the physiological effects of extremely rapid accelerations. The NASA life sciences office is charged with keeping track of research in such space-related fields; it will sponsor research programs of its own where the required information is not already being sought in service and university laboratories whose projects overlap the interests of the space agency.

Space Committee Report

Last week Lyndon Johnson's Senate Space Committee issued a report, prepared by the committee staff, criticizing NASA for not doing enough to coordinate the activities of its life sciences office with the work being done in the service laboratories. The bulk of the 270-page report is given over to descriptions of 32 of the larger Defense research facilities doing work in space-related fields. The committee staff's comments occupy only a short introductory section. Here the report points out that the armed services will spend $38 million this year on space-related research, that 2800 civilian and military employees will have been involved in the work, and that the equipment and facilities at their disposal represent an investment of $61 million. The report contrasts the Defense programs with the $5 million first-year budget of NASA's life sciences office and its expectation of having 20 professional employees on its staff by June 1961, the end of the current fiscal year. The report states that NASA obviously should make full use of the service programs and that there isn't enough evidence that NASA is making satisfactory arrangements for doing so. Indeed, Senator Johnson, in a statement accompanying the report, went so far as to suggest that NASA might not even need a life sciences division if it made thorough enough use of the service programs.

Neither NASA nor the Republicans on the committee were very happy with the report. NASA is not anxious to get involved in a public quarrel with the congressional committee that supervises its activities, but the agency clearly felt that the criticism was at least premature. The life sciences office was barely four months old when the report was completed. It still has only nine professional staff members. At this stage NASA feels that the office has not had much time to demonstrate whether or not it is doing a good job of coordinating its research with the Defense laboratories.

Observers have interpreted the report as a case of seizing an opportunity to reflect the attitude of the majority of the committee, at least (perhaps encouraged by election-year fervor), that the Administration has not been doing a good enough job of coordinating the military and civilian space programs generally. For the minority members of the committee Senator Wiley (R-Wis.) reacted with a statement arguing that the place that needed better coordination was the Senate Space Committee. He said he hadn't heard anything about the report until he read about it in the newspapers.

Jury Decides Cigarettes Caused Lung Cancer But Company Is Not Liable

A jury in Miami, Florida, has decided that a man whose heirs were suing the American Tobacco Company had died of lung cancer, that the disease was caused by smoking Lucky Strike cigarettes, and that the American Tobacco Company could not be held financially liable for the man's death. (The man had smoked two to three packs of cigarettes a day for 30 years before the disease developed.)

A company spokesman interpreted the results as support for the position taken by its medical witnesses, who argued that there was no firm proof that cigarettes do cause cancer. A court official, though, interpreted the ruling as indicating that the jury felt that not enough had been known about the dangers of smoking prior to 1956, when the man's illness was diagnosed, to hold the company financially liable.

A lawyer for the tobacco company told the jury that a judgment for the plaintiffs would "sound the death knell of the industry." The terms of the jury's decision suggest that a future

case could easily be decided against a cigarette manufacturer, on the grounds that by that time a sufficient link between smoking and cancer *had* been established in the years prior to the man's death, and that the cigarette company was financially liable.

This would lead to a long series of appeals and an eventual decision by the Supreme Court. Meanwhile, the cigarette companies are spending several million dollars a year on research to produce a cigarette that will not leave its maker open to such disturbing charges.

NSF Grants for Research and Research Facilities

The National Science Foundation, which will receive a $25-million increase this year over its fiscal 1960 appropriations, will spend the bulk of the increase on grants for basic research in the program for improving research facilities. The NSF budget this year is $175 million. It expects to distribute about $67 million in research grants, an increase of $8.6 million over last year. It will spend $21 million on the research facilities program, with nearly all of the $6.4 million increase over last year going into the program, now in its second year, for general refurbishment of graduate laboratories.

Until last year the facilities program had been devoted almost entirely to paying for major pieces of equipment that institutions would have had difficulty in paying for themselves. But the announcement of the general refurbishment grants brought in requests for grants totalling some $50 million. Only $2 million was available last year. This year the grants will be increased to something over $8 million.

Another still smaller, but important, program is the $1.9 million in unrestricted grants to universities. This program, which allows the universities to control the money, rather than awarding it on a project basis from Washington, appears to command a great deal of enthusiasm within the Foundation, and, of course, within the universities. If the current small program works well and if opposition does not develop in Congress, it will probably be greatly expanded in the years ahead. The laboratory refurbishment program appears to be a step in the same direction, that is, of supplying the universities with money for a general strengthening of their science departments as opposed to supporting only specific projects and the purchase of specific major pieces of equipment.

The Foundation's budget breakdown also shows a decline in the Antarctic research program (from $6.2 to $5 million), a fairly modest increase in the scientific manpower program (from $64.5 to $67.3 million), and an increase in the information program (from $5.5 to $6.8 million). The manpower program covers fellowship grants, teacher training programs, and other efforts to produce more and better-trained scientists. The information program includes not only support of actual information gathering and distribution, such as the grant to the AAAS for a survey of Chinese science (see below), but also research in information systems: mechanical translation, electronic data processing, and the like.

AAAS Symposium on Science in Communist China

The National Science Foundation gave its formal approval last week to a $30,000 grant to finance the AAAS symposium on science in Communist China. The symposium will be held during the 1960 AAAS annual meeting beginning 26 December. The AAAS undertook the project after discussions among the foundation, the association, and a number of government agencies and scientific societies, and found there was wide-spread interest in the proposed survey, and sufficient material available to provide a satisfactory basis for study. The AAAS, because of its broad interests, is sponsoring the symposium, with more specialized societies cooperating. A number of government agencies will cooperate by supplying microfilm reproductions of Chinese journals in their files.

In recent months the Chinese have put restrictions on exports of their journals, but through 1959, at least, a large volume of material has been accumulated, including a number of ten-year surveys prepared by the Chinese in 1959 to demonstrate their growing strength in the sciences. The material has been divided into 23 subject fields, and a scientist familiar with the language, usually an American of Chinese ancestry, has been assigned to review the material in his area and to present a report at the symposium.

The symposium will be similar to one held by the AAAS in 1951 on Soviet science. One of the immediate uses the National Science Foundation expects will be made of the survey will be to use it as a basis for selecting the most valuable material to be translated in a projected program to make at least a small part of the Chinese output available to Western scientists.

Nuclear Conference To Open This Month

Latest results obtained with the world's newest and most powerful high-energy accelerators and new developments in theoretical high-energy and particle physics will be reported at the 10th annual International Conference on High Energy Physics, 25 August–1 September at the University of Rochester. Approximately 350 scientists from more than 30 countries —including nine Nobel laureates—will attend the conference.

Participants will include some 175 foreign delegates, the largest overseas contingent ever to attend the annual meeting. More than a dozen invited papers by Soviet bloc scientists will be presented.

For the first time, the International Atomic Energy Agency will send official representatives to the conference: Bronislaw Buras (of Poland) of the Agency's Division of Research and Laboratories, and J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton. The conference is expected to be the largest yet held, both because of the increased number of high-energy accelerators now in operation and because of the rapid advance of theoretical developments in high-energy physics.

During the sessions delegates will hear the first official reports on several of the high-energy accelerators that started functioning this year. These include the 25-Bev accelerator—at present the most powerful such machine—recently dedicated at the European Center for Nuclear Research in Geneva; the 3-Bev machine at Saclay, France; and the 1.5-Bev installation at Frascati, Italy. Conferees will also hear latest results on the 10-Bev machine at the Joint Institute for Nuclear Research at Dubna, U.S.S.R.

Founded at the University of Rochester in 1950, the conference was held in Rochester for its first 7 years. Since 1957, when it was placed under the auspices of the International Union of Pure and Applied Physics, it has been held in Geneva (1958) and Kiev (1959).