

rials, supplies, and travel directly involved in the first phase of the study. The County Health Department is authorized to enter into agreements with local health departments in adjacent states concerning the collection and delivery of samples of milk, water, cattle feed, and other materials to be analyzed. The federal government will furnish certain necessary equipment to the St. Louis group, and the Public Health Service's Sanitary Engineering Center in Cincinnati, Ohio, will assist in laboratory analysis of samples.

The federal government's share of the costs for the remainder of fiscal year 1960 will amount to \$35,700; its share for fiscal year 1961 will be about \$100,000.

Because of the quantity of general information to be obtained in environmental radiation studies, it is expected that more elaborate investigations will follow the studies in San Juan County and the St. Louis area. Such additional research would be part of the nationwide effort of the Public Health Service and of state health departments to determine the significance of radioactivity in the environment.

### **Eisenhower and Macmillan Hold Talks on Soviet Call for a Moratorium on Underground Tests**

On 19 March the Soviet delegate to the three-nation talks on a nuclear test ban called a special meeting—the 188th since the Geneva talks began. Semyon K. Tsarapkin announced Soviet willingness to accept, with one condition, President Eisenhower's proposal of 11 February, which called for the United States, Great Britain, and the Soviet Union to agree on a controlled ban of high-powered blasts. The condition was that the three nations must also agree on an unpoliced moratorium on small underground explosions.

Tsarapkin explained that during the moratorium there would be further research on methods of detecting smaller explosions, but he did not fix the duration of the moratorium and he did not discuss what would happen at its conclusion. Observers in this country expect that the Russians have in mind a moratorium of 4 or 5 years, possibly longer.

The Soviets have been insisting, until their most recent proposal, that a treaty must ban all nuclear explosions:

in the atmosphere, in outer space, under ground, and under water. President Eisenhower proposed that underground blasts of less than 19 kilotons be excluded from the treaty until measures for policing them could be agreed upon.

#### **Initial Reaction**

The Soviet suggestion has been the subject of lively debate in Washington. According to reports, Secretary of State Christian A. Herter, Secretary of Defense Thomas S. Gates, Jr., John A. McCone, chairman of the Atomic Energy Commission, Allen W. Dulles, director of the Central Intelligence Agency, and George B. Kistiakowsky, the President's scientific adviser, found it impossible at a meeting on 22 March to reach an agreement on the United States response. The participants agreed that the Soviet proposal was not acceptable as it now stood, but Herter suggested a counteroffer, while Gates and McCone favored standing by the earlier American proposal for a limited ban.

Also on 22 March, the chairman of the Joint Congressional Atomic Energy Committee, Senator Clinton P. Anderson, Democrat of New Mexico, called the Soviet offer "phony." He claimed that the proposed moratorium on small underground explosions, if accepted, would achieve the Soviet goal of a total ban without proper controls. Anderson's remarks are significant because any test ban treaty must eventually go to the Senate, and the joint atomic energy committee would play an important part in the debate on ratification.

As the week progressed, however, the Administration seemed to be moving towards some kind of counteroffer. At his news conference on 25 March, Secretary of State Herter said that the Soviet plan was neither "completely unacceptable" nor "completely acceptable." He indicated that the President might view favorably a "relatively brief" testing moratorium on small underground blasts. Further, Herter pointed out that the latest Soviet proposal recognized for the first time Western reservations about the efficacy of present detection methods in distinguishing between small underground explosions and earthquakes. On 26 March Senator Anderson said that perhaps the United States should chance a 1-year moratorium on the smaller underground tests.

### **Eisenhower and Macmillan Meet**

On the same day that Anderson gave his new appraisal Prime Minister Harold Macmillan of Great Britain and his staff flew to Washington to confer with President Eisenhower about the Western reply to the Soviet offer. The general impression is that the British are willing to assume more risks than the United States to get a test ban treaty. They feel that the Soviet offer represents a step that is worth exploring. Their fear, at least at the beginning of the week when Macmillan's trip was first announced, was that the United States favored a flat rejection of the new Soviet proposal.

The small party Macmillan brought with him from London included Con D. W. O'Neill, Foreign Office Under Secretary in charge of disarmament; Sir Norman Brook, Secretary to the Cabinet; and Sir William Penney, a member of the British Atomic Energy Authority.

The Prime Minister met with Herter on the morning of 28 March for preliminary discussions, and in the afternoon went with President Eisenhower to Camp David, the presidential retreat in the Catoctin Mountains of Maryland, 65 miles from Washington. Vice President Nixon and Secretary Herter joined in the talks with Macmillan.

A number of other points besides the question of a moratorium must be nailed down before the United States, Britain, and the Soviet Union can sign a treaty. The question of the nationality of the head of the commission responsible for policing tests must be settled, as must the composition of the staff at the control posts. And there is still the matter of how many on-site inspections are to be permitted.

### **Food Additives Law Reported To Be Curtailing Research**

Research on additives for animal feeds may be the first casualty of the 1958 Food Additives Amendment, says the 21 March issue of *Chemical and Engineering News*. (The amendment to the Federal Food, Drug and Cosmetic Act was passed in 1958 but became fully effective only in March.) Drug and chemical manufacturers surveyed by the American Chemical Society weekly say that application of the amendment to drugs for use in feeds

is extremely difficult and cumbersome.

One producer, Chas. Pfizer and Co., has substantially cut its budget for agricultural research and development and has transferred scientific personnel from its agricultural research center to other divisions. The scientists will be returned to agricultural research if legislative revision or changes in interpretation reduce the difficulties now faced by the company in getting its products cleared for veterinary use.

Another pharmaceutical firm, Eli Lilly and Co., is shifting its agricultural research efforts from work on hormones and thyroxin blockers for use as feed additives to pesticides for household, farm, and industrial use. The company has found that in some instances, and in some animals, these compounds have caused hyperplasia—an increase in cell growth which is sometimes a forerunner of cancer. A compound that causes hyperplasia may come under the amendment's Delaney Clause, which prohibits the use of any amount of any cancer-causing agent in any animal or human food.

Companies that make direct food additives such as emulsifiers, antioxidants, and preservatives have been less affected by the new amendment. Such companies, reports *Chemical and Engineering News*, are continuing their re-research on the present basis—in some cases even expanding it. For direct additives, the magazine reports, the amendment's effect is merely to formalize the testing procedures the companies had been following all along.

Many chemical products never looked upon as food additives—for example, paper, plastics, and petroleum-based materials—must now be considered in an entirely new light. These products go into the making of cartons, containers, and packages used by the food industry. Rubber items such as conveyors, hose, gaskets, seals, and parts for milking machines also must be re-evaluated.

Effects of the amendment in other areas are not yet clear-cut, the magazine reports. Pesticides, for example, have become suspect in the public mind, even though pesticides do not come under the Food Additives Amendment. So far, the magazine finds, the search for new pesticides and for new uses for older ones continues unabated. But pesticide manufacturers are joining with producers of food additives in criticizing the Delaney Clause of the new amendment.

## Office of Education Studies University Finances

The approximately 2000 colleges and universities in the United States are receiving increased financial support, are spending more on educational activities, and are extending their holdings, the U.S. Office of Education announced in releasing advance totals from its biennial survey of the finances of higher education institutions. The survey covers the year 1957–58. Expenditures by colleges and universities for day-to-day activities rose 29 percent, from \$3.5 billion in 1955–56 to \$4.5 billion in 1957–58.

Total expenditures for additions to plant totaled \$686 million in 1955–56 and \$1.1 billion in 1957–58. To reach these levels of expenditure for plant, institutions transferred \$130 million in 1955–56 and \$171 million in 1957–58 from current operating funds.

Altogether, more than \$3.6 billion was spent on educational activities at the 1940 institutions included in the survey. This figure is about 30 percent above the 1955–56 level.

### Government Supports Research

The institutions expended \$734 million for organized research during 1957–58, 45 percent above the level of 1955–56. However, almost 75 percent of the \$734 million was paid by the federal government.

Other items of expense reported in the study were fellowships, scholarships, other forms of student aid, and such expenditures as maintenance of dormitories and student dining halls.

While expenditures increased, the value of plant and endowment rose 25 percent, from \$12.7 billion to just under \$16 billion. Buildings, grounds, and equipment of the institutions were valued at more than \$11 billion in 1958, as compared with something over \$8.9 billion 2 years before. Endowment funds totaled \$4.6 billion in 1958 and something over \$3.7 billion in 1956.

During these years the increase in student enrollment was nearly 15 percent and the per capita income of the nation rose nearly 10 percent. The colleges and universities obtained almost one-third of their income for educational purposes from state appropriations. Another one-fourth was obtained by tuition payments from students. The remainder came from the federal government, from private gifts, from local governments, and from other, miscel-

laneous sources. These figures are the totals for both publicly and privately controlled institutions.

Processing of the data obtained in the study has not yet reached a point where analysis by type of control (public or private) or by location of institution is practicable.

## Mathematics Study Group Announces New Paperback Series

A new paperback series entitled *Student's Mathematical Library*—designed to present mathematics as “a meaningful human activity” to students and readers in general—will begin publication early in 1961. Published jointly by Random House and Wesleyan University, the books will sell for less than \$1 each.

Headquarters for the *Student's Mathematical Library* will be New York University's Institute of Mathematical Sciences. Lipman Bers, chairman of the department of mathematics at NYU's Graduate School of Arts and Science, is chairman of the Library's editorial panel, and Anneli Lax, assistant research scientist at the institute, is the Library's technical editor.

Many of America's leading mathematicians and scientists will be contributors. The first books to appear will be concerned with irrational numbers, infinity, mathematical logic, logarithms, and calculus.

Through the series, readers with no more than a rudimentary knowledge of mathematics will have the opportunity to advance to subjects previously presented only at advanced levels.

The new series is an activity of the School Mathematics Study Group, a national association whose goal is to improve the study of mathematics in American schools and to introduce to capable students and interested laymen aspects of mathematics that most of today's courses do not treat. Formed with the financial aid of the National Science Foundation, the Study Group has its headquarters at Yale University.

## Grants, Fellowships, and Awards

**Essay prizes.** Prizes totaling 100 guineas are offered by England's Imperial Chemical Industries Limited, publishers of the quarterly scientific review *Encounter*, for essays on scientific subjects. In addition to the cash prizes the