further strengthening United States science is so broad that government, industry, universities, foundations, and individuals all have essential roles to play." Congress will ask, when it reviews the new budget, whether the government has fully accepted its "essential role."

Improving High-School Education

During January the national concern about high-school education manifested itself in a number of significant ways. Of first importance was the release of James B. Conant's report, *The American High School Today*. With the support of a Carnegie Foundation grant administered by the Educational Testing Service, Conant made a close study of 55 high schools in 18 states that led to 21 specific recommendations. Conant says of his work, which is to continue for at least another year:

"I can sum up my conclusions in a few sentences. The number of small high schools must be drastically reduced through district reorganization. Aside from this important change, I believe no radical alteration in the basic pattern of American education is necessary in order to improve our public high schools. . . . I think one general criticism would be in order: the academically talented student, as a rule, is not being sufficiently challenged, does not work hard enough, and his or her program of academic subjects is not of sufficient range. . . . A correction of this situation in many instances will depend upon an altered attitude of the community quite as much as upon action by a school board or the school administrators."

Columbia Honors Program

New York City has recently demonstrated the effectiveness of the community interest to which Conant refers. This fall a science honors program was established at Columbia University's School of Engineering with the aid of $29,000 from the Hebrew Technical Institute of New York and $25,000 from the Fund for the Advancement of Education of the Ford Foundation. The first half of the program has just been completed, and an initial report indicates that it is a complete success. The professors responsible for the 158 students, 25 of whom are girls, describe the students' ability with unqualified enthusiasm.

Every Saturday morning the group hears lectures on such subjects as physical and chemical metallurgy, theory of vibrations and wave motions, symbolic logic, nuclear physics, protein chemistry, and population genetics. Laboratory work includes advanced projects in enzyme chemistry, chromatography, effects of radiation on soils, and animal behavior. Every week 50 students have lunch at the men's faculty club, where five students are seated with each faculty member.

John R. Dunning, dean of the engineering school, says that the program is intended "to make the best science available to the best minds and to set an example that all colleges and school systems can follow."

Nationwide Survey of Students

Another important event in public high-school education to be reported last month was the U.S. Office of Education's national student survey, a survey that would attempt to assess the quality and quantity of these "best minds." The project would include a program of tests that would cover aptitude, achievement, personality, interest, and biographical data. These tests, given to a 5-percent sampling of the nation's high-school students (500,000), would provide a representative picture of the entire high-school population. The Office of Education's Research Advisory Committee has already approved the planning phase of the project, for which $335,000 has been provided. However, final action on the plans will not be taken until the committee meets in mid-February. If the study is approved—and it would cost more than $1 million—work will begin on 1 March. In May, a 2-day series of 25 tests would be given to 1000 to 1500 pupils as a pilot study; the national testing would be done next January and February.

The survey has been planned cooperatively with the National Institute of Mental Health, the Office of Naval Research, and the National Science Foundation. The project would be conducted by the American Institute for Research, a nonprofit affiliate of the University of Pittsburgh, with John T. Flanagan, professor of psychology at Pittsburgh, as principal investigator, and John T. Dailey, research associate, as program director.

Stanford Conference

Still another effort to improve high-school education in the United States occurred 24–27 January, when 15 scholars, educators, and lay authorities gathered at Stanford University's Center for Advanced Study in the Behavioral Sciences for exploratory talks on how to strengthen the national public-school curriculum. The group—which included Conant and Graham DuShane, editor of *Science*—was under the cochairmanship of Ralph Tyler, director of the study center, and Paul R. Hanna, professor of child education at Stanford. The conference was supported by the Ford Foundation's Fund for the Advancement of Education. Three questions were considered.

1) How can we achieve a solution to the curriculum problem as viewed by the public and its legislators, by the scholars and scientists, and by the professional educators?

2) How can public-school curriculums adequately represent the national interest and at the same time the special needs of the local and state community?

3) What steps can be taken and what procedures should be followed toward development of a more adequate public-school curriculum?

Hutchins' Comments

In contrast to Conant, Robert M. Hutchins, president of the Fund for the Republic, had some sharp words for American education when he received the Hillman Foundation Award for meritorious public services on 22 January. He said that every citizen must be educated to the limit of his capacity if this nation is to survive as a democracy in the nuclear age, that to preserve the democratic faith men must be sufficiently informed to take part in making decisions in a free society: "I don't mean trained, amused, exercised, accommodated or adjusted; I mean that his intellectual power must be developed."

He then went on to say that history would have trouble assessing American education in the 20th century.

"It will see a people, who say they are dedicated to education and who are the richest in the world, indifferent to education and unwilling to pay for it. It will see an educational system that delivers less education per dollar than almost any other saying that all it needs is more money. . . . History will smile sardonically at the spectacle of this great country's getting interested, slightly and temporarily, in education only because of the technical achievements of Russia, and then being able to act as a nation only by assimilating education to the 'cold war' and calling an educational bill a defense act."

Humphrey Explains Detection of Nuclear Weapon Testing

In a speech given 20 January to his colleagues, Senator Hubert H. Humphrey, Democrat from Minnesota, gave the sources of the new scientific data on nuclear test detection and related these data to the talks now in progress at Geneva. These negotiations stem in part from an agreement reached last summer by Soviet and Western scientists that a detection system was feasible. A White House announcement early last month cast some doubt on the bases for that agreement.

The senator, chairman of the Foreign Relations Subcommittee on Disarmament, served as congressional adviser to