causing an "unacceptable" hazard. It also increased by one-quarter the maximum permissible concentrations of the radioactive material in water, food, and milk.

The committee, the nation's highest advisory group on radiation protection, made its recommendations in the new issue of *Standards for Protection Against Radiation,* which was published last month. The new handbook is the result of 5 years of work by a subgroup of the national committee headed by K. Z. Morgan of the Oak Ridge National Laboratory. It is designed primarily to establish the amounts of radioactive materials that may be permitted to enter the bodies of workers at atomic energy installations and of persons living near such sites.

International Report

The organization which issued the conflicting report is the International Commission on Radiological Protection. This group, which was founded in 1928, has 13 members from seven countries. The chairman is R. M. Sievert of Sweden. The U.S. representative is Lauriston S. Taylor, who is also chairman of the National Committee on Radiation Protection and Measurement. In its recommendations, which were formulated 9 September 1958 but only recently released, the commission advised a further lowering of the "permissible" limits of radiation. If the international group's standards were adopted in this country, the current permissibility limits for industrial workers would be reduced to as low as one-tenth their present level. The estimated tolerable level of radiation from fallout would also be reduced, by about one-third. The basic criterion behind these standards and those of the national group is the amount of radiation the human body can receive without causing an "unacceptable" hazard.

Discrepancy Cited by Critics

Immediately after the international report became available, criticism of the national report began to mount. The discrepancy between the two reports was cited in conjunction with the suggested possibility that the United States, with its heavy investment in atomic energy, was presenting a misleading view of the dangers involved. Adding to the confusion were other reports which have appeared since publication of the U.S. committee's report. One that received wide comment was that of the General Advisory Committee of the Atomic Energy Commission. In general, this report lauded the commission for its work to date and stated that all "significant" data on radiation hazards had been made available to the public. It also gave a brief review of recent developments and an evaluation of radiation dangers. This report was criticized almost immediately by individuals outside the AEC. Many commentators pointed to the fact that there were no scientists trained as geneticists on the advisory committee. Thus, the question of possible genetic hazards over the years as opposed to physiological dangers in the present and in the near future remains unanswered. Criticism of the report reached a peak when Ralph Lapp, physicist and writer, described it as "shocking" and called for a presidential committee of inquiry to examine it.

Congressional Action

In the Congress, the special subcommittee on radiation of the Joint Atomic Energy Committee held 4-day hearings on the dangers from fallout. Testimony given before the subgroup tended to support the view that radiation dangers have been inadequately assessed. Witnesses said that, as a result of atomic weapon tests last fall, there is a record amount of radioactive debris in the stratosphere. This debris, they stated, can be expected to fall very rapidly and, because of the structure of the atmosphere, to fall principally on the Northern Hemisphere. As a result, the committee was told, radioactive fallout can be expected to double in the next few years. These reports drew expressions of concern from the subcommittee chairman, Chet Holifield (D-Cal.). He pointed to the fact that the amount of radioactive debris being created was far in excess of a safety limit of 10,000 kilotons annually, which was recommended by scientists during the subcommittee's fallout hearings in 1957.

Eisenhower Speech Highlights Basic Research Symposium

A 3-day symposium on basic research drew more than 225 of the nation's top scientists, educators, and industrialists to New York's Rockefeller Institute on 14–16 May. Although no summary or list of resolutions was issued at the end of the meeting, there was general agreement on a number of points. One was that basic scientific research is part of the general scholastic effort of the country and that any actions or attitudes that advance that general effort help further basic research. The need for means of support for research in addition to the individual project grant was also frequently cited by speakers and panelists. A third point on which there was general agreement concerned the desirability of having the research worker teach and the teacher do research for short periods during their careers.

The meeting, held under the joint auspices of the National Academy of Sciences, the AAAS, and the Alfred P. Sloan Foundation, provided a forum at which the conferees set forth and examined the facts concerning the support of basic scientific research in the United States. Governmental support was one of the main topics before the symposium, and the major news event of the meeting was President Eisenhower's announcement, at a dinner for the scientists, that he would ask Congress for $100 million for a new linear high-energy accelerator. The device, to be built at Stanford University in California, will be 50 times longer than the largest accelerator of its kind known to be in operation today.

Papers and Discussions

A total of 12 basic papers were read at the symposium, which was held under the great blue hemisphere of the institute's Caspary Hall. Robert Oppenheimer spoke first, on the "Importance of New Knowledge." He was followed by Alan T. Waterman of the National Science Foundation and William O. Baker of Bell Telephone Laboratories, who spoke, respectively, on "Basic Research in the United States" and the "Paradox of Choice"—an examination of management's role relative to an industrial laboratory's research. A discussion period followed these three presentations. Questions from the audience were answered by the speakers, who were joined by three or four other panelists. This practice was followed in each of the other three sessions, at each of which three papers were given. These sessions were concerned with basic research in various types of educational institutions, with basic research in various types of laboratories, and with financial support of basic research by government, industry, and private philanthropic organizations.

Eisenhower's Speech

The scientists attending the conference were joined by about an equal number of representatives from industry, from the fields of publishing and education, and from other professions for a dinner at the Waldorf-Astoria. Detlev W. Bronk, of the National Academy of Sciences and the Rockefeller Institute, acted as host during the dinner and introduced the speakers. Brief talks were given by James Killian of the Federal Council for Science and Technology and by Crawford Greenwalt of Dupont. The President then spoke, offering a brief review of the relationship between government and science, and announcing the proposal for the accelerator.

The papers and précis of the discussions at the New York meeting will be published by the AAAS, probably in the

fall. Dael Wolfle, executive officer of the association, will be the editor. Mark H. Ingraham, dean of the College of Letters and Science at the University of Wisconsin, was originally designated editor, but illness prevented his attendance at the conference. The volume, which is now in preparation, is expected to give wider distribution to the deliberations and suggestions of the conferees.

U.N. Space Group Establishes Scientific and Legal Committees

The United Nations Ad Hoc Committee on the Peaceful Uses of Outer Space convened for its first meeting on 6 May. The committee consists of 18 member states: Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, France, India, Iran, Italy, Japan, Mexico, Poland, Sweden, the U.S.S.R., the United Arab Republic, the United Kingdom, and the United States. However, the delegations of Czechoslovakia, India, Poland, the United Arab Republic, and the U.S.S.R. did not attend the meeting. These countries have indicated that they would not participate in the work of the Outer Space Committee because they feel that its membership is unbalanced in favor of the West.

The committee is to report to the next session of the General Assembly on the following: (i) the activities and resources of the United Nations, of its specialized agencies, and of other international bodies relating to the peaceful uses of outer space; (ii) the area of international cooperation and programs in the peaceful uses of outer space that could appropriately be undertaken under United Nations auspices for the benefit of states, irrespective of the status of their economic or scientific development; (iii) future organizational arrangements to facilitate international cooperation in this field within the framework of the United Nations; and (iv) the nature of the legal problems that may arise in carrying out programs to explore outer space.

Subcommittees Established

At its opening session, the committee decided without objection and without a vote to form two subcommittees, one on the scientific aspects of the problem, the other on the legal issues involved. The establishment of the two subcommittees was proposed by Henry Cabot Lodge of the United States. The subcommittees will start work on 26 May and are expected to submit reports to the main committee by the middle of June. The *ad hoc* committee will consider the reports and then start drafting its statement for the forthcoming session of the General Assembly. It was agreed that the latter document should be completed by the end of July at the latest.

The committee also decided to request the Secretary General to report to the committee at an early date on the activities and resources of the United Nations, of its specialized agencies, and of other international bodies relating to the peaceful uses of outer space. It was agreed that consideration of another topic assigned to the committee by the General Assembly—future organizational arrangements—should be taken up by the committee only after submission of the reports of the two subcommittees and of the Secretary General.

Koto Matsudaira, permanent representative of Japan to the United Nations, was elected chairman of the *ad hoc* committee; Mario Amadeo, permanent representative of Argentina, vice chairman; and Joseph Nisot, permanent representative of Belgium, *rapporteur*. The United States has designated Hugh L. Dryden, deputy administrator of the National Aeronautics and Space Administration, as its representative on the scientific subcommittee, and Loftus E. Becker, legal adviser to the State Department, as its representative on the legal subcommittee. This country has prepared a series of documents on the topics to be studied by the committee.

U.S. Delegates Express Views

In an address in which he formally introduced a U.S. working paper, Dryden commented that the fields of application of satellites so far identified were those of meteorology and weather forecasting, long-distance communication, navigation, and geodetic measurements. Dryden felt that the three substantive areas which could most fruitfully be examined by the Scientific Subcommittee are space science, satellite application in other areas, and manned exploration of space. There is need for international cooperation in all three fields, he stressed. Joint efforts in the investigation of the ionosphere and the fundamentals of radio propagation through the upper atmosphere are required to obtain the world-wide coverage that alone can provide a complete picture, he added. "But most of all, space research needs to draw upon an entire world for its ideas," Dryden declared.

Among other things, Dryden mentioned that "in the near future" it would be possible to check the general theory of relativity by comparing the rate of a satellite-borne atomic clock with the rate of a similar clock on the ground. In the area of biosciences, he observed, "perhaps even more exciting is the possibility of finding life forms on other planets."

In the field of meteorology, Dryden said that satellites would open up the possibility of a world-wide system for observing the weather, with resulting benefits to agriculture, transportation, and other weather-dependent activities throughout the world.

A communications satellite, he said, might well lead "to vastly improved world-wide communications in terms of speed capacity, reliability and possible economy." Further, a navigational satellite might provide the basis for an all-

Henry Cabot Lodge (United States), Hugh L. Dryden (United States), and Sir Pierson Dixon (United Kingdom) converse after the opening session of the first meeting of the United Nations Ad Hoc Committee on the Peaceful Uses of Outer Space. [United Nations]