of his leisure activities. These may include fishing, hunting, golf, driving around the country, movies, television, and bridge. Dr. Whitney had none of these hobbies. His one consuming interest was the study of nature, for which his curiosity knew no bounds. He studied the habits of turtles, where they laid their eggs, where they spent the winter, and how often they returned to the same place, by marking them with the place and date; how mosquitoes knew what to bite, by counting the number that lighted on him, and on a quarter of beef beside him; what caused galls to grow on golden rod, by inserting a piece of iron wire and heating it with high frequency; what caused cockroaches to enter a trap, by counting the numbers caught in two bottles, one of which contained sugar. His occasional walks along the Mohawk River were devoted to a search for Indian arrowheads, which he could find when no one else could. He kept careful notes of these experiments and also of ideas that came to him in his reading and thinking.

Dr. Whitney spent all his days at the laboratory, where he was always the first to arrive in the morning. But his evenings were devoted to scientific reading. He was a voluminous reader, especially in physics, chemistry, biology, and the history of science; and the range of his knowledge and interest was correspondingly wide. Fittingly, the new library at the General Electric Research Laboratory has been named the Whitney Library.

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News of Science

National Aeronautics and Space Administration, Its Administrator and Deputy Administrator

In the matters that come before it, the Congress of the United States sees a variety of subjects ranging from the ludicrously insignificant to the critically important. The committees and the full bodies of the House and Senate can on one day ponder the implications of letting the Girl Scouts use Army equipment and on the next consider the problem of Presidential disability. The legislative hopper is commodious and indiscriminate. If the 85th Congress has had its share of "little" bills, it has also deliberated on many major measures that rank with the Atomic Energy Act and the National Science Foundation Act in the matter of far-reaching significance. The National Aeronautics and Space Act of 1958 constitutes such a measure in its import to both science and the national security. In its handling of the President's proposal for this act and his recommendations of men to fill the two top posts, Congress has moved quickly, intelligently, and with an unusual awareness of the implications of the legislation at hand.

National Aeronautics and Space Act

On 29 July the President effected Public Law 85-568 by signing a House of Representatives bill sent to him by the Congress. The law declares that "it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind" and that "the general welfare and security of the United States require that adequate provision be made for aeronautical and space activities." To accomplish these ends the law calls for the establishment of three new governmental units, an Aeronautics and Space Council, an Aeronautics and Space Administration, and a Civilian-Military Liaison Committee. The council, to be headed by the President of the United States, will have as members the Secretary of State, the Secretary of Defense, the Administrator of the NASA, the Chairman of the Atomic Energy Commission, and four other presidentially appointed persons, one from the Federal Government and three from among "individuals in private life who are eminent in science, engineering, technology, education, administration, or public affairs." The council will advise the President on the broad outlines, both present and future, of aeronautical and space activities in the country.

The Administration. The Aeronautics and Space Administration will have three major functions. As these appear in the law, they require that the administration shall: "(1) plan, direct, and conduct aeronautical and space activities; (2) arrange for participation by the scientific community in planning scientific measurements and observations to be made through use of aeronautical and space vehicles, and conduct, or arrange for the conduct of, such measurements and observations; and (3) provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." For the performance of its functions the administration is granted many of the usual powers given to federal agencies and two unusual ones that are interesting in their departure from normal procedure. The first of these departures allows the administrator to appoint up to 260 scientific, engineering, and administrative personnel without regard to the civil-service laws, and to compensate them without regard to the Classification Act of 1949. This exemption allows the administrator to staff his agency with highly qualified men and women by enabling him to offer salaries of up to a limit of $19,000 a year, or up to a limit of $21,000 a year for a maximum of ten positions. A second significant departure authorizes the administrator to employ aliens without regard to statutory provisions prohibiting payment of compensation to such persons. This would seem to be a significant exemption in that it makes available to the administration the services of any European or other foreign scientist who might be interested in working on one or another of the projects that are undertaken in the future.

Jurisdiction. The significant matter of jurisdiction over projects as it relates to the new administration and the Department of Defense received detailed attention by the congressional framers of the act. It was recognized that activities which are peculiar to or primarily associated with weapon systems or military operations or to the defense of the United States (including the research and development necessary to make effective provision for the defense of the United States) should be under the jurisdiction of the Department of Defense, while all others should be under

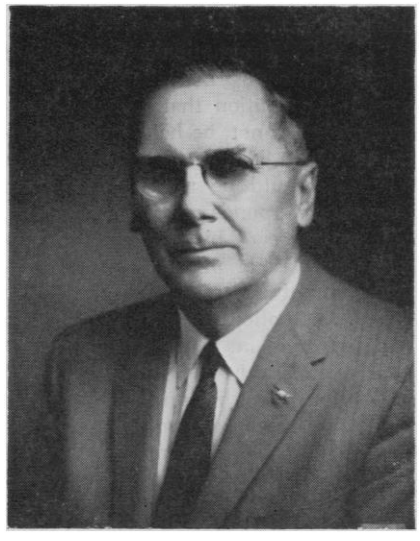
the administration. But in projects which at the basic concept level were not clearly assignable to the administration or the defense establishment it was felt that coordination at the highest governmental levels was necessary. Accordingly, the act makes two provisions to aid in determining jurisdiction. First, the President, advised by the council, is given the responsibility of assigning specific projects to the proper group. Second, the act provides that the administrator of the National Aeronautics and Space Administration and the Secretary of Defense can seek solutions to questions of jurisdiction either directly or through the Civilian-Military Liaison Committee to hold to a minimum the questions referred to the President and the council. Allowance is also made for cooperative work on projects which are determined to be of sufficient joint interest.

National Advisory Committee for Aeronautics. The circumstances under which the administration will be organized are particularly fortunate in one regard. Rather than having to organize in the void, so to speak, the men that set up the working administration will have a 38-year-old core on which to build. This core, the National Advisory Committee for Aeronautics, now headed by Hugh L. Dryden, who will become the deputy administrator of the new agency, has a long and productive history of work with governmental agencies, particularly the Department of Defense and its predecessors. The utilization of the old agency as the basis for the new will make for a continuity of records, administrative procedures, and to some extent, of personnel and policy.

The Administrator

To fill the top position of the new agency, that of administrator, President Eisenhower recommended Thomas Keith Glennan, president of Case Institute of Technology in Cleveland, Ohio. The Senate, after brief hearings by its committee on space and astronautics, confirmed the nomination unanimously and without debate. Glennan, who reached his fifty-third birthday 4 days ago, was born in Enderlin, N.D., the son of a train dispatcher. Most of his youth was spent in Eau Claire, Wis., where he attended high school and, for 2 years, State Teachers College. In 1924 he entered Yale University and, because of his earlier college work, graduated 3 years later from its Sheffield Scientific School with a B.S. degree in electrical engineering. Between graduation and the war years Glennan worked with various motion picture companies, Western Electric, and Vega Airplane Corporation. He joined the Columbia University division of war research in 1942, serving through the war, first as administrator, and then as director, of the Navy's Underwater

T. Keith Glennan



Hugh L. Dryden

Sound Laboratories at New London, Conn. For these services he was awarded the Medal of Merit. At the end of the war he became an executive of Ansco. From this position he was called to the presidency of Case. His previous work in government was with the Ordnance Panel of the Research and Development Board, the Atomic Energy Commission as a commissioner, for 2 years, and with the McKinney Panel on Peaceful Uses of Atomic Energy and the Hayworth Committee on the Evaluation of the Combat Development Program of the Army, as a member in both cases.

The confirmation hearing before the Senate committee was characterized by amiability and good will on the part of the Senators and the nominee. Senators Johnson and Green did most of the significant questioning, inquiring into matters such as possible conflict of interest, definition of the role of the administrator, and the state of American scientific and educational activities as they compare with Russian activities. All of these matters were resolved to the committee's satisfaction. In answer to Senator Green's question about the primary requisites of the job, Glennan made this statement: "Application and understanding, I think, of the manner in which some of these things get done. It isn't just a matter of the money that is involved, but it is a matter of the people involved and how one can best motivate the people to highest performance." Senators Bricker, Anderson, and Hickenlooper had no questions to ask the nominee, but did express their gratification at Glennan's selection, willingness to serve, and his return to government service. Those who commented most fully on the nominee were ones who had worked with, or known him, during his 2-year tenure as a commissioner of the AEC.

The Deputy Administrator

The National Advisory Committee for Aeronautics will be the core of NASA. Its director for the past 11 years, Hugh Latimer Dryden, will become the deputy administrator of the new administration, serving directly under T. Keith Glennan. Dryden, who has been in government service since 1918, came to NACA from the National Bureau of Standards, where he had been associate director. Some of his early laboratory work at the bureau served as the basis for his Ph.D. from Johns Hopkins, which was awarded in 1919. Born 2 July 1898 in Pocomoke City, Maryland, the son of a streetcar conductor, which, as he said to the Senate Committee, gives him some kinship with Glennan, he was reared in Baltimore, where he attended the public schools and the undergraduate college of Johns Hopkins. His postdoctoral work at the Bureau of Standards was centered chiefly on aerodynamics. In 1920 he became head of the bureau's aerodynamic section. In connection with his work in this field, fluid mechanics, acoustics, and others, he has published more than 100 technical papers and articles in professional journals. As head of the "Washington project" of the National Defense Research Committee he led development of this country's first and only guided missile successfully used in combat, the radar-homing Bat. This achievement won him the Presidential Certificate of Merit in 1948. Dryden is a member of many scientific groups, including the AAAS. In 1949 he served as president of the Cosmos Club.

As a result of his long association with the Government and various military projects, Dryden has often been called on to speak on some aspect of scientific work with which he is acquainted. Addressing the California Wing Convention earlier this year, he briefly examined

the statutory separation of civilian and military projects under the enabling legislation of the NASA and the jurisdictional problems involved. He commented: "I, for one, might be concerned about the difficulties that could be expected to arise in these negotiations, were it not that since 1915 the military services and the NACA have worked together—closely and harmoniously. The fact that we are moving into the new unexplored areas of space merely increases the essentiality of this effective partnership." In other talks Dryden has given examples of this civilian-military cooperation. Before the House Select Committee on Astronautics and Space Exploration he cited two examples of such work, both involving military missiles. They were the development of the "blunt-nose" concept for the design of missile warheads and the wind-tunnel tests which identified the gas eddy phenomenon which was destroying the early Jupiter missiles.

The new Deputy Administrator of the National Aeronautics and Space Administration, in accord with his long experience and extensive familiarity with the problems involved, is not given to sweeping statements on future developments in space activities. His attitude can best be seen in his closing words to the House Committee: ". . . I should like to echo the thought expressed by Dr. Killian and his committee, that we should be 'cautious and modest in our predictions and pronouncements about future space activities . . . and quietly bold in our execution.' "

Lysenkoism Again?

The character of Soviet participation in the International Congress of Genetics that took place recently in Montreal changed sharply just before the congress was to open. Last-minute cancellations were received from several scheduled speakers. At the same time, the Soviet delegation submitted further titles of papers to be delivered, so that the Soviet contributions to the meeting were predominantly of the controversial Lysenko school of genetics. Earlier it was thought that studies based on both the Lysenko school and on points of view closer to classical Western genetics would be reported by the Russians. (It has been rumored that several geneticists from East Germany who had intended to come to the congress had been unable to obtain exit permits for the trip.)

Trofim D. Lysenko, who rose to a position of power in Soviet science under Stalin, holds that in some cases acquired characteristics can be passed on to future generations. His views are in conflict with those of most Western geneticists. In recent years Lysenko's influence seemed to have waned.

As a result of the Soviet delegation's program changes, the Permanent International Committee for Genetics Congresses passed the following resolution on 25 August and presented it to the final plenary session of the Montreal congress.

"The Permanent International Committee on Genetics Congresses considers it to be its duty to express deep concern over the fact that a number of Soviet geneticists who had submitted abstracts of papers to the X International Congress of Genetics failed to appear in Montreal. The Committee also deeply regrets the absence of representatives at the Congress of a number of other countries. It wishes to express its deepest sympathy and sends its warmest regards to all scientists who may have been prevented from attending the Congress by their governments.

"The IX International Congress of Genetics, meeting in Bellagio in 1953, passed a resolution that Genetics Congresses should not 'be held in any country to which it may be expected that scientists would be refused permission to enter on grounds of race, nationality, religion, place of birth, or political associations past or present.' The Permanent Committee takes this occasion to extend this policy by appealing strongly to all governments in the world to allow their scientists the right of unimpeded travel for scientific purposes, without regard of race, nationality, religion, place of birth, past or present political associations and, in view of the experiences at the current Congress, irrespective of whether their scientific views and work are in conformity with any official governmentally-shaped policies and ideology. We consider any attempt on the part of governments to interfere on political, ideological or other grounds with the free pursuit of science and free dissemination of scientific information as a serious violation of the basic principles of research. We appeal to the learned academies and scientific societies of all countries and to the United Nations and its organizations to exert all possible influence to persuade all governments to adhere to the principles outlined here. Their violation will, no doubt, spell the end of scientific freedom and therefore also of scientific progress."

School and College Enrollment

The nation's total school and college enrollment, increasing for the 14th consecutive year, will reach a new all-time peak of about 45 million in school year 1958–59, according to the U.S. Office of Education. One of every four persons in the United States will attend school or college. Enrollment will be about 1,750,000 higher than the previous record enrollment of 43,195,000 last school year.

Public and private school enrollment in kindergarten through grade 8 is expected to total about 31,793,000, a gain of more than a million over last year's elementary school enrollment of 30,670,000.

A gain of almost half a million is expected in high school (Grades 9 through 12), with an enrollment of 8,880,000 in 1958–59 compared with 8,424,000 last year. For every 100 persons aged 14–17 years, 83 persons will be enrolled in high school. Ten years ago 75 in 100 were enrolled.

Colleges and universities are expected to enroll about 173,000 more students during the coming academic year than they did last year—3,623,000 this year, 3,450,000 last year.

Approximately 245,500 additional qualified teachers are needed this year 99,000 to replace teachers who died, retired, or left the profession to be married or take other employment last year; 55,000 to meet requirements of increased enrollments; and 91,000 to replace emergency teachers.

It is estimated that 90,300 men and women will enter the teaching profession for the first time this year and that 23,000 former emergency teachers will have attained qualified status. The remaining shortage of 132,200 will be met by a return to teaching by former teachers, by the employment of emergency teachers, and by the establishment of excessively large classes.

Neutron Cross Sections

A second, completely revised edition of BNL-325, *Neutron Cross Sections,* has been prepared at the Brookhaven National Laboratory. BNL-325, successor to the compilation AECU 2040, was originally prepared for the first International Conference on the Peaceful Uses of Atomic Energy at Geneva in 1955. Since then, it has been widely distributed by the Superintendent of Documents and has become the standard reference handbook of neutron cross sections. The second edition of BNL-325, available at the second International Conference in Geneva this month, will be put on sale by the Government Printing Office.

Of interest to reactor specialists and nuclear physicists alike, this second edition of BNL-325 contains carefully evaluated data on thermal cross sections and resonance parameters, as well as curves of partial and total cross sections as functions of energy. This work is international in coverage and includes the most recent data available from many laboratories throughout the world.