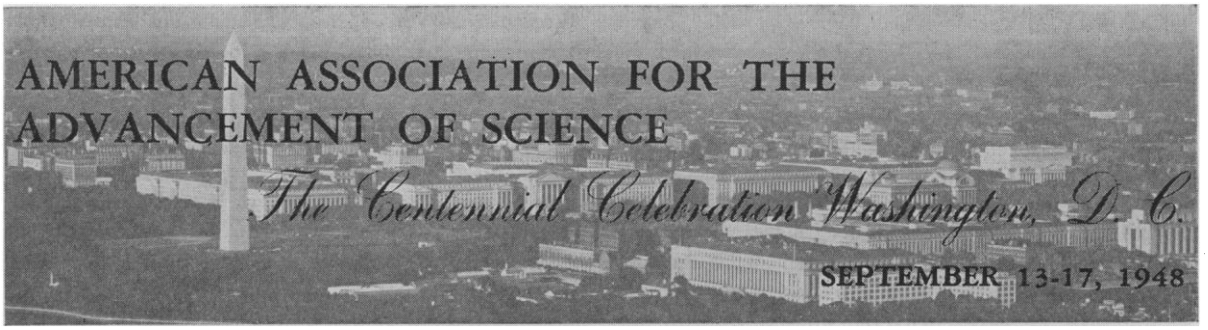

For the benefit of those planning to attend the Centennial Celebration space in these columns will from time to time be devoted to descriptions of various host institutions in and around Washington. These sketches will be accompanied by appropriate cover photographs. Last week's cover featured the David W. Taylor Model Basin; this week's shows the administration building of the National Institute of Health.

David W. Taylor Model Basin

The David W. Taylor Model Basin is the largest and the most completely equipped naval architectural research and testing establishment of its kind in the world. The theory of predicting the performance of full-scale ships from the results of model testing was conceived about two centuries ago by Emanuel Swedenborg and others in Europe, and by Benjamin Franklin in this country, but it was not developed into a practical working process until 1872, when William Froude, a celebrated civil engineer, established the first Model Basin in England.

In 1899, the U. S. Navy put into operation the U. S. Experimental Model Basin at the Washington Navy Yard. In 1936, Congress authorized the construction of the David W. Taylor Model Basin to replace and extend the work of the old Model Basin, which was no longer adequate to meet the requirements of modern types of work for the Navy and private individuals. Carderock, Maryland, was selected as the site of the new plant, since an adequate water supply was available, bedrock was at or near the surface to assure adequate permanent foundations, the plant would be readily accessible to the Navy Department, and the location would be relatively free from extraneous noise, ground vibration, smoke, and dirt. Construction was started in 1937 and the plant placed into operation in 1940.

The original conception of the establishment, as indicated by the authorizing Act, was that it should be constructed for the investigation and determination of the most suitable and desirable shapes and forms for naval vessels and for investigations of other problems of design. Thus, primarily, the establishment was designed and originally equipped to carry out experimental work on the forms of ship hulls and to estimate the power required to drive them, with a secondary interest in other features of design. This conception has been expanded far beyond the fields originally contemplated. In addition to the investigations of ships' hulls, studies are conducted on underwater forms of all types to determine the characteristics of any body which is propelled, towed, or projected on or through the water. The heading "Other Features of Design" has been expanded into the fields of structural strength, shock, vibration, underwater explosion, and related projects. Development work in the fields of electronics and acoustics is progressing to the point where they now constitute a major phase of the research at the Model Basin. In order to keep abreast of all possibilities, the Model Basin is now equipped to and does carry out wind tunnel tests on current airplane proposals and designs and ship forms.

The facilities available have been constantly improved and new ones developed. The following are now in operation: four separate model basins—a deep-water basin for testing models of large ships, a shallow-water basin for testing models of small and shallow-water vessels, with a turning basin for testing the maneuvering and steering characteristics, a high-speed basin for testing models of motor boats, seaplane hulls and pontoons, and underwater bodies, and a small model basin for testing special models and conducting unusual research investigations; two variable-pressure water tunnels for testing models of propellers to determine their characteristics and for the study of cavitation; a circulating water channel, equipped with a three-dimensional dynamometer; and a small, transparent, wall tank for the study of underwater trajectories. The principal characteristic of the circulating water channel is that the water moves past a stationary model, whereas in the model basins the models are towed through the water.

With reference to aerodynamic facilities, two subsonic wind tunnels are now in operation. In the near future these facilities will be increased by two small supersonic wind tunnels. One $2' \times 2'$ supersonic tunnel, one $7' \times 10'$ transsonic tunnel, and one large, general purpose tunnel are projected for construction.

The structural laboratory of the David Taylor Model Basin is fully equipped with instrumentation and testing machines that have been found necessary to make the assigned investigations in the past.

The Model Basin is under the management and technical control of the Bureau of Ships, Navy Department, but for purpose of military administration it is part of the Potomac River Naval Command. The director, Rear Adm. C. O. Kell, USN, is responsible for operation of the establishment and guidance of the research testing and development programs.

The Model Basin is organized into 8 principal departments: 4 scientific departments—Hydromechanics, Structural Mechanics, Aerodynamics, and Applied Physics, and 4 service departments.

The National Institute of Health

Research activities of the Public Health Service date back to 1887, when a bacteriological laboratory was set up in the Marine Hospital at the port of New York. Bacteriology was then a new science, and recognition of its value in matters pertaining to the successful administration of national quarantine and public sanitation and hygiene was immediate. Before long, the Hygienic Laboratory was moved to more suitable quarters in Washington, and in 1901 land and funds were provided to erect "a laboratory for the investigation of infectious and contagious diseases, and matters pertaining to the public health." The name was changed to the National Institute of Health in 1930, and in 1937 the Institute was moved to its present site, northwest of Washington in the adjoining Maryland countryside.

The work of the Institute developed along with the expanding program of the Public Health Service. Confronted with the practical problems of disease control, the Service depends on scientific research to discover the cause of the disease, means of spread, and, when these are known, the possible methods of prevention.

Assistant Surgeon Gen. R. E. Dyer is the director of the National Institute of Health; Medical Director Norman H. Topping is associate director.

At present there are 7 administrative divisions in the Institute:

(1) National Cancer Institute (engaged in cancer research, control activities, and the allotting of grants-in-aid);

(2) Experimental Biology and Medicine Institute (includes the Division of Physiology, Pathology Laboratory, and the Chemistry Laboratory);

(3) Division of Infectious Diseases (maintains, in addition, a large field station at Hamilton, Montana—the Rocky Mountain Laboratory);

(4) Division of Tropical Diseases (also operates a number of field units);

(5) Laboratory of Physical Biology;

(6) Biologics Control Laboratory; and

(7) Division of Research Grants and Fellowships.

In the near future, present facilities will be augmented by a 500-bed Clinical Center. Major emphasis will be placed on the study of cancer, heart disease, and mental disease.

Studies now under way at the Institute include: (1) tissue culture studies on normal and malignant cells, experimental production of tumors, and carcinogenesis induced by radiation; (2) chemotherapy of tuberculosis, surgical and burn shock, dental caries, dietary deficiency diseases, cardiovascular disease, and the aging processes; (3) the cause, epidemiology, and prevention of rickettsial diseases, the common cold, and other communicable diseases; (4) development of methods for immunization and diagnosis of malaria, clinical evaluation of antimalarial drugs, and improvement of diagnostic procedures for parasitic diseases; (5) research in the fields of biological chemistry and physics, including high- and low-energy radiation biology, molecular biophysical studies, and cellular metabolism; (6) maintenance of standards of safety, purity, and potency of biologic products.

The many scientific achievements at the Institute include: the first bacteriological diagnosis of cholera in the Western Hemisphere; pioneer work on anaphylaxis; the discovery that pellagra is a deficiency disease; studies that contributed all of our knowledge of tularemia; the discovery that typhus fever is transmitted by rat fleas as well as body lice; the isolation of the causative virus of epidemic encephalitis; the discovery of the virus of a new disease, lymphocytic choriomeningitis; the development of vaccine to be used against Rocky Mountain spotted fever; the discovery of a disease entity, ariboflavinosis; the development of hyperimmune rabbit serum for treatment of spotted fever; the discovery of curative action of physiological salt solution administered by mouth in shock produced experimentally; the first transformation in test tube of normal mammalian cells into cancer cells; the discovery of the virus of a new disease of the atypical pneumonia group; the discovery of a new clinical entity, rickettsialpox; and the isolation of an agent of the common cold.

Symposium on Natural Resources

The Symposium on Natural Resources will deal, in a broad and diversified manner, with man's relationship to the useful materials in his environment. The aim of the contributions will be to clarify thinking by the scientific and general public on the principles involved in a wise utilization of such resources. At the present time the difference between the renewable or cyclical and the nonrenewable or noncyclical resources of the earth is inadequately appreciated. The basis of any sound permanent economy must lie in ensuring that the renewable resources are really used in ways that permit full cyclical restoration, and that, in so far as nonrenewable resources are vital to such an economy, adequate provisions for continual exploitation of progressively poorer sources, and of substitute materials, be made in advance of exhaustion. Such substitutions involve social and economic as well as purely technological problems. The whole material basis of human culture is involved in problems of this kind. Such problems can be discussed only in terms of a wide variety of disciplines, ranging from geochemistry and plant physiology to economics and social anthropology. Moreover, any practical consideration of the question as to whether we are making the best use of our resources inevitably involves problems of value in contemporary cultures. A particularly urgent case is involved in the extreme strain placed by modern warfare on the riches of the earth.

The contributors to the symposium will be T. S. Lovering, of the U. S. Geological Survey; Stanley A. Cain, of the Cranbrook Institute of Science; and G. E. Hutchinson, of the Osborn Zoological Laboratory, Yale University. Dr. Lovering has had extensive experience as an investigator and a teacher and has given much attention to the general aspects of mineral resources. He is a graduate of the Minnesota School of Mines and has a doctorate from the University of Minnesota. He is the author of *Minerals in world affairs*. Dr. Cain is one of the ablest of the younger botanists of the United States. He is a graduate of Butler and has his doctorate from the University of Chicago. Before being called to the Cranbrook Institute he taught at Butler, Indiana, and the University of Tennessee. He has been particularly interested in the broader aspects of plant ecology and their relationship to evolutionary and general biological problems. Prof. Hutchinson, who has given attention to these problems in connection with his work as consultant in biogeochemistry at the American Museum of Natural History, will discuss Man in the Biosphere.

Biological Societies to Meet

A number of biological societies are planning to meet in Washington, September 10–13. Arrangements for their meetings are being handled by local committees which are being coordinated by the American Institute of Biological Sciences. It is planned to have central registration at the Willard Hotel. To date the societies which have selected their residential headquarters are the Botanical Society of America (Willard and Washington Hotels), the American Society of Zoologists (Washington Hotel), the Genetics Society of America (Roger-Smith and Hay-Adams Hotels), the American Society of Plant Taxonomists (Willard Hotel), the Mycological Society of America (Raleigh Hotel), the Phycological Society of America and the Sullivant Moss Society (Hotel Harrington), and the American Society of Naturalists (Roger-Smith Hotel).

Members of the above societies are asked not to send requests for reservations to the Hotel, but directly to Mr. Clarence Arata, Greater Washington Convention Bureau, Evening Star Building, Washington, D. C., for clearance and assignment. Single rooms are limited in number. Whenever possible, it is advisable to make reservations and share a double room, as it may be necessary to use double rooms exclusively during the AAAS meeting. Early application will be of material assistance in securing the hotel accommodations desired. It is imperative that members state whether or not they are remaining for the meetings of the AAAS. Rooms will be assigned in order of receipt of reservation. No reservations received after September 1 can be honored, as the blocks of rooms will then be released to the hotels. Hotel reservation blanks are being distributed by the secretaries of the societies, together with detailed information on program and papers.