

Director of the Bureau of Standards by the head of the department or independent agency charged with the execution of such project: And provided further, That any state or political subdivision thereof may obtain a test, study or other work on a problem connected with a project the prosecution of which is under the jurisdiction of such state or political subdivision thereof.

Sec. 2. There is hereby authorized to be appropriated out of any money in the Treasury not otherwise appropriated, not to exceed \$350,000, to be expended by the Secretary of Commerce for the construction and installation upon the present site of the Bureau of Standards in the District of Columbia of a suitable hydraulic laboratory building and such equipment, utilities and appurtenances thereto as may be necessary.

A number of government departments have a long list of urgent problems awaiting solution, and the experiments in connection therewith will be taken up in the new laboratory as soon as it is completed. Among these are questions relating to large reclamation and water conservation projects in the West, the control of erosion below spillways and dams, losses of head in large pipe and channel bends, the flow of water over dams, the entrainment of air at tunnel and syphon entrances, the regulation of rivers, the laws of silting and erosion in drainage ditches and streams, and the improvement of instruments and devices for measuring flowing water.

Owing to the great variety of problems which will be submitted for study, the equipment of the new laboratory will be designed to furnish the greatest possible flexibility of arrangement and combination, so that it can be adapted easily to the simultaneous study of a number of different problems.

The fixed equipment will include electrically driven pumps for circulating the water, a large concrete water-supply basin, a concrete measuring tank, several steel weighing tanks, elevated control tanks for supplying water under several different fixed heads, a standpipe and piping systems for distributing this water to all parts of the laboratory and for returning it from the models under test to the supply basin. A large unobstructed floor will be provided where a number of models can be built and tested simultaneously.

WEATHER FORECASTS FOR AIRWAYS

THE Weather Bureau is organizing an expansion of its service in aid of aviation, which will provide frequent and regular weather reports covering approximately 13,000 miles of airways. Effective soon after July 1, these reports will provide sufficient detail to meet all needs.

On about 8,000 miles of these airways teletype lines will provide 24-hour communication with exchange of reports once each hour. The remaining 5,000 miles will be served by reports transmitted by telephone or

telegraph and at such intervals as will best meet current needs. On nearly 3,000 miles of airways, over which there is as yet comparatively little flying (one or two daily flights each way), the bureau will provide a limited service.

The current reports along all of these airways are supplemented by specialized, short-period airways forecasts which are based primarily on the twice-daily, country-wide reports and weather maps used in the general forecasting service, and, secondarily, on a series of three-hourly reports concentrated at designated centers from a well-selected network of stations. Some of these reporting stations are on the airways and others are at a considerable distance from them. At present the centers to which these reports go and from which the short-period forecasts are issued are the airport stations at Cleveland, Ohio; Fort Crook, Nebraska; Salt Lake City, Utah, and Oakland, California. After July 1, the increased appropriation will enable the bureau to open three new offices, at Atlanta, Georgia, at Dallas, Texas, and at Portland, Oregon. About 110 reporting stations will transmit to these forecasting centers.

Bulletins and short-period forecasts based on these reports will be sent by teletype from the seven centers to other airports and to landing fields and will also be broadcast to aircraft in flight through a rapidly expanding network of radio stations maintained by the Department of Commerce.

The Weather Bureau's program provides for the establishment of observation from pilot balloons at several additional stations, including Albuquerque, New Mexico; Cincinnati, Ohio; Dallas and Del Rio, Texas; Elko, Nevada, and North Platte, Nebraska.

Outside of continental United States, the bureau is increasing its airways service in Alaska, where a new first-order station is being organized at Nome. Pilot balloons will be stationed at Nome and Fairbanks. The service in the Hawaiian Islands will include a chain of inter-island stations from which reports will be transmitted by radio to Honolulu, there to be made available for the information of pilots flying from one island to another.

The Weather Bureau also announces that it is continuing its investigations with kites, captive, pilot and sounding balloons and airplanes (through cooperation with the Navy Department), and is now engaged also in studies of ice formation on aircraft, turbulence or gustiness and other problems. The bureau's appropriation for all phases of its airways forecasting and study is \$1,400,000.

APPOINTMENTS AT THE ROCKEFELLER INSTITUTE

THE Board of Scientific Directors of The Rockefeller Institute for Medical Research announces the

following appointments and promotions on the scientific staff.

New Appointments: Assistants—J. Lionel Alloway, Albert J. Anthony, James V. Bickford, Laurie L. Burgess, Frank Cortese, Macdonald Dick, Robert C. Elderfield, Filip C. Forsbeck, Kenneth Goodner, Benjamin E. Hodge, Stephen S. Hudack, Lewis G. Longworth, Margaret J. Pittman, Paul D. Rosahn, William B. Rose, Kenneth C. Smithburn, Douglas H. Sprunt, Radford C. Tanzer, Robert Thomas, Robert S. Tipson and G. Payling Wright. Fellow—Basile J. Luyet.

Promotions: Associate Member to Member—Peter K. Olitsky. Assistant to Associate—Mortimer L. Anson, Robert B. Corey, René J. Dubos, Rebecca C. Lancefield, Currier McEwen, Alfred E. Mirsky, Albert L. Raymond, Julius Sendroy, Jr., Richard E. Shope. Fellow to Assistant—Fred Smith.

Resignations: Charles A. Doan to become professor and chairman of the department of medical and surgical research of Ohio State University; Robert R. Hannon, associate professor of medicine, Peiping Union Medical College; James A. Hawkins, associate professor of applied biochemistry, department of ophthalmology, Washington University Medical School, St. Louis; Louis A. Julianelle, associate professor of applied bacteriology and immunology, Washington University Medical School; William S. Tillett, associate professor of medicine in charge of the department of biology, Johns Hopkins Medical School.

THE DEPARTMENT OF PHYSICS OF HARVARD UNIVERSITY

As reported in the *Harvard Alumni Bulletin*, members of the staff of the Harvard department of physics will spend the summer vacation in writing, travel and research as follows:

Professor P. W. Bridgman will be engaged in writing at his summer home in Randolph, New Hampshire. Preparation for his research on the properties of matter under high pressure at the Jefferson Physical Laboratory will be carried on during his absence by an assistant.

Professor William Duane will supervise his general X-ray research in connection with the work of the Harvard Cancer Commission, both at the Harvard physical laboratories and the bio-physical laboratories at the Huntington Hospital. He will also supervise the installation of a radium plant at the Palmer Memorial Hospital.

Professor F. A. Saunders, of the Jefferson Laboratory, will revise his "Laboratory Manual on General Physics" and will be occupied with the plans for the new physics laboratory.

Professor E. L. Chaffee, of the Cruft Laboratory, will spend the vacation at his summer home in Ludlow, Vermont, where he will complete the first volume of his textbook on radio vacuum tubes.

Professor N. H. Black, of the Jefferson Physical Laboratory, will be on sabbatical leave during the academic year 1930-31. He will study the methods of teaching science at the English public schools—Eton, Harrow, etc.—and later will engage in research at the Cavendish Laboratory, University of Cambridge.

Professor E. C. Kemble, of the Jefferson Laboratory, will give courses on quantum mechanics and molecular spectra at the summer session at Cornell University.

Professor J. C. Slater, of the Jefferson Laboratory, will be engaged in writing a volume on the quantum theory of the structure of atoms, molecules and solids at his summer home near Rochester, New York.

Professor R. F. Field has resigned from the staff of the Cruft Laboratory and accepted a position as research engineer at the General Radio Company, Cambridge, Massachusetts.

F. H. Crawford, instructor in physics, will spend the first half of the summer vacation in research on band spectra at the Jefferson Laboratory.

Of the instructors in physics at the Cruft Laboratory, H. R. Mimno will continue his research on radio frequency amplifiers, F. V. Hunt will be engaged in the calibration of acoustic measuring devices, R. W. Hickman will continue his work on gas-filled vacuum tubes and W. N. Tuttle will travel in England, Holland and Germany, visiting the great physical laboratories of those countries.

HONORARY DEGREES FROM THE UNIVERSITY OF NEW HAMPSHIRE

THOMAS A. WATSON, Boston; Wilton E. Britton, New Haven, and Ambrose Swasey, Cleveland, were among those receiving honorary degrees from the University of New Hampshire. The citations given were as follows:

WILTON EVERETT BRITTON—Entomologist of the Connecticut Experiment Station; Connecticut State Entomologist; graduate of this institution in the Class of 1893; horticulturist in Connecticut for six years; teacher in the Yale Forestry School; doctor of philosophy from Yale University. Your steady progress in the great science to which you have given your life—the science that protects the crops of the farmer and makes safe the food supply of the nation—has been rewarded during the years by many and marked honors. You have been the president of the American Association of Economic Entomologists and for twenty years the associate editor of the *Journal*. You have served one state for almost four decades, but your influence has gone far beyond its borders. Your devoted labors have won for you international reputation in your profession, a reputation of which your Alma Mater is justly proud.

THOMAS AUGUSTUS WATSON—On the last page of a delightful life story you have written these words—"mountains have always reminded me of my telephone days, probably because my first sight of them was so impressive on the notable day I spent in North Conway,