con" research type are being carried aloft by 68-foot diameter, "Skyhook" balloons to a height of approximately 80,000 feet. Each rocket carries an instrument load of 20 pounds and floats above the ocean until a solar "flare" is observed.

Inasmuch as solar "storms" rise to a maximum in a matter of minutes, NRL scientists using conventional rocket techniques have been delayed by the time taken, first, in detecting the flare from the ground, and then, in launching the rocket and gaining the altitude necessary for scientific observations. The ship-controlled balloon-rocket technique will reduce the delays. It is expected that a minimum time-lag of 90 to 120 seconds between the decision to fire and the attainment of the required observational altitude can be achieved by using this approach.

The decision to fire is based on the occurrence of a detectable solar flare. Detection can be achieved in two ways. One notice of a "flare" is the sudden radio "fadeouts" of the medium- and short-wave radio receivers aboard the ship. A second method makes use of an optical telescope coupled to a closed-circuit television system, with a red-colored filter corresponding to the light of a hydrogen flare. The picture of the sun as viewed on the TV screen shows the flare as a vivid flash.

When the decision has been made to fire a rocket, signals from a shipboard transmitter activate electronic instruments in the nose of the rocket, and also energize the receiver that controls the rocket igniter. As the rocket takes power, its pull shatters the plastic balloon, and in the next 90 to 120 seconds it attains an altitude of 60 to 70 miles in the ionosphere. In its trajectory it telemeters to the observing station aboard the *Colonial* data on the strength of x-ray and ultraviolet radiations from the "flare."

In addition to the telemetering transmitter, the "Deacons" contain photon counters sensitive to radiation from the sun in three wavelengths; 1216 angstroms, 1 to 10 angstroms, and 0.05 to 1 angstrom. These wavelengths correspond to the Lymanalpha line of hydrogen, x-rays, and "soft" gamma rays, respectively, which are believed to have independent but accumulative effects on the ionosphere, and hence on radio "fadeouts."

News Briefs

■ A suit that enables a man to work for several minutes at a temperature of 1200°F has recently been developed by the Minnesota Mining and Manufacturing Company, St. Paul, Minn. The suit is made of fiber glass coated with aluminum. The aluminum coating reflects much of the heat and permits the insulating layer of fiber glass to be much

less bulky than would otherwise be necessary to provide equivalent protection. Aluminum coats have also been bonded to cotton cloth and to asbestos for other specialized uses. The accompanying picture shows a demonstrator holding a wooden box inside a furnace. The box has burst into flame, but the demonstrator is unharmed.

Use of the suits is expected to save time and expense in the repair of equipment used in high-temperature installations.

■ Development of an iron lung that will automatically adjust itself to a patient's needs will be undertaken at Vanderbilt University under the supervision of Randolph Batson, associate professor of pediatrics.

The object of the development is to produce an iron lung that a patient can control through the muscle impulses he would normally use for breathing. Thus the patient himself will control both the rate and depth of breathing. Present respirator aids all tend to force the patient into a pattern of breathing that may not be precisely what he needs at all times. The key to the proposed device is the use of electrodes from which electric connections will lead from the patient to a controlling device for the iron lung. Thus, as the patient makes a normal attempt to breathe, an impulse resulting from the attempt will trigger the iron lung and the air will be forced into his lungs.

■ The Veterans Administration plans an enlarged medical research program under the record $10 million appropriated by Congress for the fiscal year that began 1 July. Most research will be concentrated in four areas of major diseases: mental, nervous, and brain diseases; heart and artery diseases; cancer and leukemia; and problems of aging.

The VA will expand its research program in tuberculosis, in the fungus diseases that resemble tuberculosis, and in the infectious diseases. It will support individual projects in such subjects as high blood pressure, hardening of the arteries, the metabolic diseases, and epilepsy and related nervous disorders.

In addition, the VA plans to enlarge its studies of drugs for the treatment of specific diseases, such as tuberculosis, multiple sclerosis, psychiatric disorders, high blood pressure, and cancer. The VA also will investigate changes in lung function due to aging and disease, and the effects of brain surgery in the treatment of schizophrenia. It will conduct two follow-up studies in order to make an evaluation of the natural course of coronary artery disease and coronary thrombosis and an evaluation of the long-term results of chemotherapy on tuberculosis. It also has a program in atomic medicine.

In all of these studies, the VA will be advised by the National Research Council Committee on Veterans Problems, the Statistical Agency of the National Research Council, and the Advisory Committee in Research of the VA, which is composed of outstanding leaders in American medicine.

Scientists in the News

ROBERT GRAHAM, dean of the University of Illinois College of Veterinary Medicine, will retire 1 Sept. A member of the faculty of the university since 1917, he was made dean of the College of Veterinary Medicine in 1945. Graham was the first scientist to detect botulism in animals, and the first to develop an antitoxin for botulinus, a form of food poisoning in human beings. In 1948 he was the first veterinarian to be appointed as scientific consultant to the Federal Pure Food and Drug Administration. Graham will be succeeded as dean by CARL A. BRANDLY, now chairman of the department of veterinary science at the University of Wisconsin.

The following are among those who have recently received honorary doctoral degrees.

University of Wisconsin: BENJAMIN M. DUGGAR, former professor at the University of Wisconsin and consulting scientist for the American Cyanamid Company.

University of Bonn: WEIKKO A. HEISKANEN, director of Ohio State University's Institute of Geodesy, Photogrammetry, and Cartography.

Carleton College: LLOYD H. REYERSON, chemistry professor, University of Minnesota.

Stevens Institute of Technology: DONALD A. QUARLES, Secretary of the Air Force; WILLIS H. TAYLOR,