CORNELL UNIVERSITY CENTER FOR RADIOPHYSICS AND SPACE RESEARCH

A NEW research centre is to be set up by Cornell University, Ithaca, New York, for the purpose of conducting research, and training research workers, in the subjects of radiophysics and space research. The centre will operate a high-powered radar equipment in Puerto Rico, financed by the Department of Defense. This equipment will make use of a fixed parabolic mirror with a diameter of 1,000 ft. built into a natural hollow in the mountains. It will have a peak power of 2.5 MW. In addition, it is proposed that there should be a radio-astronomy receiver near Ithaca, and a transmitter on the campus of Cornell.

The director of the new Centre will be Prof. T. Gold, who will be assisted by Prof. H. G. Booker as associate director. Both Gold and Booker went to the United States from Great Britain. Both worked on radar in England during the Second World War, Gold at the Admiralty Research Establishment, and Booker at the Telecommunications Research Establishment of the Ministry of Aircraft Production. After the War, Gold became a Fellow of Trinity College, Cambridge, and a demonstrator in the Cavendish Laboratory. Later he joined the Royal Observatory, Greenwich, as a chief assistant, and in 1957 he left for America, where he became professor of astronomy at Harvard. He is noted for the originality of his researches in astronomy, geophysics and the theory of hearing.

Booker took the Mathematical Tripos at Cambridge in 1933 and afterwards worked on the theory of electromagnetic waves in close collaboration with the radio section of the Cavendish Laboratory. He became a Fellow of Christ's College and a University lecturer in mathematics. During the War he led the theoretical division at the Telecommunications Research Establishment and was responsible for

originating the 'duct' theory of super-refraction of radio waves. He returned to Cambridge after the War and played an important part in developing the theory of the scattering of radio waves from ionospheric irregularities. He left Cambridge for the United States in 1948, and became professor of electrical engineering at Cornell University. There he extended the theory of scattering to include the effect of irregularities in the troposphere, and he was one of the leaders in the team which turned this scattering to practical use in commercial 'forward scatter' radio links. He will retain his present position at Cornell in addition to becoming associate director of the new Center.

Both Booker and Gold are noted as mathematicians who can not only talk the language of the physicists but appear also to think in that language. They seem to have an intuitive grasp of fundamental principles which enables them to see at once what a piece of mathematics really implies. Together with the physicists, engineers and mathematicians at Cornell, all of whom will be called upon to help them from time to time, they will form a powerful team.

In one set of investigations the high-power radar equipment will be used to observe radio-echoes from the planets. In another it will be used for the observations of incoherent back-scatter from the electrons in the terrestrial ionosphere. Its use for the latter purpose will follow a suggestion by Gordon, which has already been tried out successfully by Bowles, that incoherent scattering might be used to investigate the upper side of the ionosphere. Gordon is to be a member of the Cornell team at the new Centre.

All radio- and space-physicists will look forward to valuable results from the new Center.

J. A. RATCLIFFE

RESEARCH BY MCGILL UNIVERSITY IN BARBADOS

Bellairs Research Institute

THE Bellairs Research Institute of McGill University was founded in 1954 by the late Commander C. W. Bellairs, R.N., for the purpose of providing the University with research facilities in tropical biology. The first laboratory was put into operation in the seaside residence of Commander Bellairs in 1955. An increasing interest in the Caribbean area on the part of McGill soon made it apparent that the original quarters were not adequate for an expanding research programme. Plans were drawn up for a new building which was completed early in 1959.

While the present Institute quarters were designed primarily for the pursuit of studies in marine biology, the needs of workers in other fields of biology have not been overlooked in the construction of the building. The laboratory consists of three bright and airy work rooms with water tables and running fresh water and sea-water. There are a large concrete aquarium and outdoor tubs for the storage of freshly caught material. There are also an office, store-rooms, photographic room and microscope room. Outlets for

bottled gas have been installed and the electric supply is 110 volts, 50 cycles. Accommodation, consisting of single and double bedrooms, lounge and kitchen, is available for a limited number of visiting investigators.

There are several small boats with outboard motors for collecting in shallow water and a 30-ft. diesel launch for work at sea. The launch is equipped with a winch and gear for oceanographic and plankton collections. Diving equipment, including aqualungs, an underwater camera and a variety of nets, dredges and other collecting gear, is available.

The Institute is situated on the western coast of Barbados, some seven miles from the capital, Bridgetown. A well-developed coral reef lies directly in front of the laboratory and extensive reefs lie along most of the western side. Around the rest of the island there is a wide variety of marine environments, including rocky shores and shallow-water flats of sand, mud or grass. Along the southern coast there are extensive shallow banks of corals and gorgonids, and many deep-water forms such as crinoids and antipatharians are found in 30-40 ft. of water. Deep