

The research program of the Division of Medical Research is entirely extramural. Research problems are supported by grants-in-aid, and training is provided by the appointment of Research Fellows. Most of the work under the Division is done in Canadian Medical Schools. The Research Fellowship program of the Division, established in 1946, has filled an obvious need in the provision of research training for medical graduates.

The scope of the Division of Mechanical Engineering includes aeronautics and hydrodynamics as well as phases of mechanical engineering. The aeronautical laboratories provide the Canadian aviation industry, both constructors and operators, with research, development and testing facilities, and the laboratories also function as the research organization of the Royal Canadian Air Force. Provision is made for work in almost all fields of aeronautics, including aerodynamics, gas dynamics, power plants, structures, and fuels and lubricants.

The cold chambers of the recently opened low-temperature laboratory have been in almost continuous use on projects for the Department of National Defence and industry. Construction of the refrigerated wind-tunnel is nearing completion. In the hydraulics laboratory further work was done on the model of the Fraser River for the Department of Public Works. Arrangements have been made with the University of British Columbia for the construction of a larger model at the University and further tests. Other model work has included studies of spillways, log chutes and log diversion relative to power plants.

Work in the physics laboratories is both fundamental and applied in character. Pure science is represented by studies in spectroscopy, carried on by a group of specialists in this field. Cosmic rays, precision electrical standards and radioactivity also present problems in pure physics.

On the practical side several investigations are in progress. Studies on the thermostatic control of refrigerator cars have been continued. Research is proceeding on the thermal conductivity of metals at high temperatures. Progress has been made in studies on migration of moisture through wood; apparatus for measuring thermal conductivity of textiles in still air and in wind has been further developed; and the project on panel heating of houses has been continued.

A substantial volume of work passes through the metrology laboratory. This unit is responsible for the custody and periodical checking of Canada's national standards of measurement.

Aid has been given in the modification of equipment used for geophysical prospecting. Practical results have been obtained in colorimetry tests on railway fuses, and a great amount of work has been done in assessing the performance of aerial camera lenses. A motion picture camera capable of taking photographs at 200,000 frames per second has been built. Numerous types of precision instruments are being designed and built for use in laboratory studies both in physics and in other fields of science.

The Radio and Electrical Engineering Division carries on fundamental research in radar, radiophysics and applications of radar techniques to peacetime problems, and does a great deal of work for the Armed Services. Electrical equipment needed by other laboratory divisions is also designed and built as required. The Division is co-operating with the Meteorological Service and other government departments. Mention may be made of the use of radar in studying meteors. Electromagnetic