



NOTES

from ABROAD

PHYSICS IN CANADA

Canada has large natural resources but these have been only partially developed. The population is small and the area very large. Research is sponsored by a number of different administrative authorities. Consequently, organization assumes an even greater importance than usual if maximum success is to result. It is the intent of this article to give a brief survey of the nature of the work in Canadian physics and the method of its organization.

In most countries research is supported in three main ways: by government, the universities, and industry. Canada is no exception. To avoid wasteful duplication it is important that means be provided for a high degree of informal cooperation, and one very effective way of doing this has been to establish really active research committees. Some are quite national in character; others deal with relatively local problems. Sometimes two or more committees work in the same field under different administrative authorities and their coordination is accomplished either by interlocking memberships or joint sponsorship. Grants in aid of research also contribute to coordination since the majority of the grants are made by the larger administrative bodies who, though they may have no direct formal administrative connections, make it a point to be familiar with each other's activities and to take account of them when making awards.

The Federal Government gives most of its support to physical research through the National Research Council of Canada, the Defence Research Board, and the Department of Mines and Resources. Other branches of the Federal Government have laboratories doing a certain amount of physical research but the main interest of these laboratories is in some other field such as agriculture or health, and to these organizations physics is a tool rather than an end.

The National Research Council

Occupying a rather unique position, not only in physics, but in other branches of science, the National Research Council of Canada has proved so effective an organization that other research authorities in Canada have, to varying extents, followed its method of organization and operation. This Canadian body has the same name as one in the United States but the two are very dissimilar in many important ways. Relatively speaking, the responsibilities of the Canadian institution are broader and its functions more comprehensive.

The National Research Council is not a department of Government in the ordinary sense but a corporate body

deriving its powers from the National Research Council Act of 1924, revised in 1946. This Act established a Committee of the Privy Council (the Federal Cabinet) of Canada on Scientific and Industrial Research consisting of certain Ministers of the Crown designated by the Governor-in-Council and under the chairmanship of one of them. The latter position is presently held by the Right Honourable C. D. Howe, Minister of Trade and Commerce. Under this committee is the Honorary Advisory Council on Scientific and Industrial Research. This body, usually called the Council, consists of a president, two vice presidents, one for administration and one for science, and not more than seventeen other members appointed from men distinguished in science and industry. Except for the president and vice presidents, they serve for a three-year term without emolument. They are really equivalent to a board of governors and as such are generally responsible for all the activities carried out under the National Research Council Act. The president is the chief executive officer and ranks as a Senior Deputy Minister. Dr. C. J. Mackenzie currently holds this position. The Act gives the Council very broad, general and specific powers to sponsor and promote scientific research and development in the public interest. It also confers to it responsibility for the maintenance of all primary physical standards. Thus some responsibilities parallel those of the National Bureau of Standards in Washington.

The activities of the Council can be placed under four general headings: maintenance of its own laboratories, awarding grants in aid of research, financial support of committees coordinating research in special fields, and the giving of scholarships. The main laboratories of the Council are located in Ottawa. These house the administrative offices and the divisions of physics, chemistry, applied biology, information services, and radio and electrical engineering. A few miles outside of Ottawa are two additional establishments, one devoted to mechanical engineering, aeronautical and building research, and the other to radio investigations mainly in the field of radar engineering. A regional Laboratory for the Prairies at Saskatoon is in active operation. This, as its name suggests, is devoted to special problems of the region and at the present time is mainly concerned with problems of applied biology such as the utilization of agricultural waste. A second regional Laboratory for the Maritimes, at Halifax, Nova Scotia, is in the planning stage. At Chalk River, about 135 miles up the Ottawa River from Ottawa, is a large atomic energy project which is devoted exclusively to fundamental research in nuclear physics and to peacetime applications of atomic energy.

Through a system of special committees, the Council makes an effective contribution to the financial support of research in special fields and to the general coordination of research throughout Canada. These committees, set up as associate committees of the National Research Council, bring together representatives of all groups interested in a particular field. Generally they comprise members of the Council's laboratory staff, the universities, industry, and other Government agencies. The researches, under the general guidance of a committee, may be located in