

scale processing and pilot-plant-scale operations are carried out. There is also a group, working in the field of mycology, concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

Administration.—Administration of the foregoing laboratories is organized as a Division of Administration and Awards, which exists only to serve the scientist. The five service units of this Division are: Awards and Committee Services (Awards, Committees, Publications, Research Journals); Administrative Services (General Services, Purchasing, Personnel); Information Services (Technical Information Service, Library, Public Relations Office, and Liaison Offices in Ottawa, Washington, D.C., and London, England); Plant Engineering Services; and Legal and Patent Services. The latter group works closely with Canadian Patents and Development Limited (see p. 108). An expert on economic research acts as special assistant to the Assistant Director, Information Services.

Section 2.—Research in the Atomic Field*

In the past, the atomic energy activities of many countries have been devoted mainly to uranium mining operations in support of military uses. However, a more durable phase is approaching, when a great proportion of the expanding annual construction of new electric power generating plants will employ nuclear energy. This transition is creating a temporary slowing down in the demand for Canadian uranium.

During the next ten years a large part of the relatively small uranium supply for nuclear power will be directed to the supporting inventory of nuclear fuel; beyond that, the make-up to replace consumption is foreseen as rising to match and surpass the current world rate of production. By that time the atomic energy industry as a whole should be supported by the consumers of electric power but at present, in all countries and for a number of years to come, the young industry has the greater part of its costs furnished directly or indirectly through taxation. In an intermediate phase, capital advances made in anticipation of revenues from power consumers will be important.

Three government organizations have the basic responsibilities for atomic energy in Canada: (1) the Atomic Energy Control Board, responsible for all regulatory matters concerning work in the nuclear field; (2) Eldorado Mining and Refining Limited, with a double function as producer of uranium and as the Government's agent for purchase of uranium from private mining companies; and (3) Atomic Energy of Canada Limited, concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as cobalt-60 Beam Therapy units for the treatment of cancer.

The four principal uranium-producing areas in Canada are at Great Bear Lake, N.W.T. (closed), the east end of Lake Athabasca, Sask., Elliot Lake, Ont., and Bancroft, Ont.; all resulted from reports made by the Geological Survey of Canada. For the greater part, the mining operations themselves are conducted by private companies supported by export contracts that would have terminated in 1962, but have been revised so that some will be stretched out, without increase in total supply, to 1966. Eldorado ran two mines, at Beaverlodge on Lake Athabasca and at Port Radium on Great Bear Lake. However, the latter mine exhausted its ore body during 1960 and closed after 27 years of operation. The revision of the contracts also closed down the less economical mines of private companies. Only two of the original six companies in Beaverlodge were in operation in January 1961 and seven of the original eleven in the Elliot Lake area. A refinery run by Eldorado is located at Port Hope on the northern shore of Lake Ontario. The Research and Development Division of Eldorado, together with the Mines Branch of the Department of Mines and Technical Surveys, also makes important contributions to the solution of recovery problems; a noteworthy example was the development of the sodium carbonate leaching process for the Beaverlodge uranium ore processing plant, which did away with the necessity of shipping of large amounts of acid to that remote area.

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