

The Physical Metallurgy Division aids the metal industries through the development of new alloys, new manufacturing techniques and new applications and in activities aimed toward improving present practices in metal fabrication. It serves the Department of National Defence by extensive research and investigative work concerned broadly with the development of defence materials and prototype equipment and with the metallurgical problems of that Department. The Division is also operative in the nuclear metallurgy field.

Dominion Observatories.—The two main units of the Dominion Observatories are the Dominion Observatory at Ottawa, Ont., and the Dominion Astrophysical Observatory at Victoria, B.C. Permanent magnetic observatories are maintained at Agincourt, Ont., Meanook, Alta., and at Resolute Bay and Baker Lake, N.W.T. Seismic stations for recording earthquakes are operated at Victoria, Horseshoe Bay and Alberni, B.C.; Banff, Alta.; Saskatoon, Sask.; Ottawa, Ont.; Seven Falls and Shawinigan Falls, Que.; Halifax, N.S.; and Resolute, N.W.T.

The Dominion Observatory, Ottawa, Ont., is responsible for the time service of Canada which involves nightly astronomical observations of star positions and radio broadcast services for distributing accurate time to all parts of Canada. Other astronomical activities centred at Ottawa include upper atmospheric studies by means of meteor observations, studies of the sun and its effect on earthly conditions and mathematical studies of the atmospheres of the sun and stars. The geophysical work, also administered from Ottawa, includes the magnetic survey of Canada with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed to study important aspects of the earth's crust in Canada and to assist in world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating mineral deposits.

The Dominion Astrophysical Observatory, Victoria, B.C., is devoted to fundamental research into the physical characteristics of the sun, stars, planets and the material of interstellar space. Its 73-inch reflecting telescope is one of the largest in the world and through its use many important contributions have been made to astronomical knowledge.

The Geographical Branch.—The function of the Branch is to organize and make available all the geographical data on Canada that might be of use in promoting the economic, commercial and social welfare of Canada. The work is of two kinds—the compilation of geographical material of national significance, and geographical surveys in the field.

Mineral Resources Division.—Formerly a unit of the Mines Branch, this Division is now a unit of the Department's Administration Branch. It provides a mineral information service that is freely used by government departments, mining and allied industries, and others interested in mining or its significance in the Canadian economy. A mineral resources index inventory is maintained of all known occurrences and of mines, both active and potential. The Division makes economic studies of different phases of the mining industry. It gives technical advice as required for the administration of the Emergency Gold Mining Assistance Act, prepares reports on request to aid in the administration of such matters as tax exemptions on new mining properties, and prepares reports and briefs on general legislation, taxation and tariff matters connected with the mineral industry.

The Dominion Coal Board.*—The Board was established by the Dominion Coal Board Act (R.S.C. 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to the production, importation, distribution and use of coal in Canada. The Board is also charged with the responsibility of advising upon and administering transportation subventions.

* Prepared under the direction of W. E. Uren, O.B.E., Chairman of the Dominion Coal Board.
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