

**Minerals.**—The numerous and varied mineral deposits of the Dominion form another of her most important resources. Their value was first appreciated early in the 17th century, when iron was mined in Cape Breton. Following a development which has only become an important one during recent years, when the needs of manufacturing industries and a more settled civilization were to be met, Canada has now become one of the important mining countries of the world. Her coal resources are only now being exploited to any considerable extent, the estimated total reserves available amounting to 1,234,269,310,000 metric tons, approximately one-sixth of the world's reserve; over 85 p.c. of the Canadian reserves are in Alberta. The total estimated reserves constitute almost one quarter of the total amount of coal available in North and South America. Extensive oil fields exist in the western provinces, where they remain practically undeveloped. Some smaller fields in Ontario have been exploited, while oil shale occurs in several parts of eastern Canada. In the production of natural gas, Canada holds second place among the countries of the world. Nickel deposits at Sudbury, Ontario, are as large as all others in the world combined, and produce six-sevenths of the world total. Copper deposits in the same area and in Manitoba, while not of great extent, still assure the maintenance and possible increase of the present rate of production. Arsenic in large quantities is a by-product obtained in the smelting of Ontario silver ores of the Cobalt and Porcupine districts, where the latter are found in large quantities. Gold, of which Canada was in 1922 the world's third largest producer, is also found in the same region, in British Columbia, in the Yukon, and in Quebec, where a large field is now being extensively prospected. Canada is the second largest producer of magnesite and the third largest producer of mica in the world. Large iron deposits, although of a low grade, are found in the district north of lake Superior. The asbestos deposits of southern Quebec are unrivalled in the production of this mineral. The total value of mineral production in Canada during 1923 was \$214,312,857.

**Water Powers.**—Canada's water area of 125,756 square miles, distributed as it is throughout all parts of the country, provides a large amount of potential electric energy. It is estimated that 18,255,316 h.p. are available at a minimum yearly flow, 32,075,998 at maximum flow, and that a turbine installation of 41,700,000 h.p. is available. The present turbine installation of 3,227,414 h.p. thus represents only 8 p.c. of the recorded water power resources. Perhaps the greatest use to which these resources have yet been put has been in the pulp and paper industry, and to a lesser degree in the mining, the electro-chemical, the electro-metallurgical and the flour milling industries. The water power utilized in the pulp and paper industry alone amounted on Feb. 1, 1924, to 726,375 h.p. Over 90 p.c. of the power available is in Quebec, Ontario, Manitoba and British Columbia; Quebec, with 7,000,000 h.p. available at ordinary minimum flow, has the largest resources in the Dominion.

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## VII.—CLIMATE AND METEOROLOGY.

### 1.—The Factors which Control Canadian Weather.<sup>1</sup>

Several prime factors play important roles in establishing climatic types, latitude, distance from the sea (especially on the western side of the continents), altitude, and prevailing winds, the last named being a variable, accounting for differences in the character of corresponding seasons in different years.

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<sup>1</sup>Contributed by Sir Frederick Stupart, Director of the Meteorological Service, Toronto, Canada.