

regained the first rank and continued to lead during the next seven years, with the exception of 1912, when the Yukon was again the greatest producer. As a result of the development of the Porcupine and contiguous areas, Ontario passed the other provinces and mining districts in 1914, and still holds the first place so far as the production of gold is concerned.

Ontario.—Though gold had been mined in various parts of the province, the production of the metal was comparatively small until 1912, when the first permanent camp was established in the Porcupine area. The total recorded production of gold in Ontario for the period 1887-1912 was 210,040 fine oz., of which more than 40 p.c. was obtained in the year 1912. The production rose from 219,801 fine oz. in 1913 to 492,481 fine oz. in 1916, but fell during the next two years, owing to scarcity of labour. The yield rose to 1,000,340 fine oz. in 1922 and in 1927 reached the record total of 1,629,246 fine oz.

Porcupine Area.—The Porcupine district, the most important gold-mining area of Canada, lies about 150 miles northwest of Cobalt, the present productive portion being limited to the township of Tisdale, an area six miles square.

The gold deposits seem to be generically related to the porphyries which have intruded the older Keewatin greenstones and also the Timiskaming sediments. Rocks of these series are widely distributed throughout the Porcupine district and it is in them that the gold-bearing deposits are found. The theory of deposition is that the intrusion of porphyry fissured the older rocks and opened a way for the circulation of the mineral-bearing siliceous solution which filled the fissures. The application of this theory in the search for new ore bodies has been attended with great success.

Ordinarily from 95 to 97 p.c. of the gold in the ores mined at the Porcupine field is extracted chemically by dissolving it in a weak solution of sodium cyanide, the details of the process varying at the different mines. There are five steps in the cyanide process, which are briefly as follows:—(1) reducing the ore to a size where the gold particles are freed from enclosing rock, carried to a point where the ore is ground about as fine as cement; (2) dissolving the gold in sodium cyanide solution; (3) separating the solution containing the dissolved gold from the impoverished ore; (4) precipitation of the gold from the solution by zinc dust; and (5) refining of the precipitates.

Kirkland Lake.—Of the other gold-producing localities, Kirkland lake, in Timiskaming district, has been the most important. The first gold discovery in the vicinity of Kirkland lake was made in 1911 on a claim now forming part of the Wright-Hargreaves mine. The geological formation is similar, as regards age relationship, to that of the Porcupine district. The rocks are Precambrian, the Keewatin predominating. Unlike the Porcupine, most of the productive veins are found within the porphyry, which is of a syenitic variety. Three principal zones of mineralization have been indicated by exploration:—(1) the main or central zone, which runs in a northeasterly direction along the southern expanse of the lake and along which a group of important mines is being developed over a length of 2½ miles and a width of ½ mile; (2) a southerly zone which lies about ½ mile to the south; and (3) a northerly zone known as the Goodfish Lake gold area.

British Columbia.—The production of gold in British Columbia has varied considerably at different periods. Rapid increases took place between 1858 and 1863, when 189,318 fine oz. were obtained by placer mining. Thereafter a decline