The gravels of the Big Bend country occupy an area between the summits of the Rocky Mountain range and the Gold range extending from the 53rd parallel southerly some 50 miles. The most productive sections have been the valleys of Gold creek and Carnes creek and their tributaries, covering an area of about 35 by 20 miles, or between 600 and 700 square miles.

Since 1895 many discoveries of auriferous veinstone have been made in this district, some carrying free gold and others carrying sulphides of iron with which free gold appears to be associated. At the period of writing several attempts are being made to open up these veins which promise a substantial basis for a remunerative quartz mining industry. Difficulties of access have kept this region back, but the general progress of transportation methods, now so rapidly advancing in British Columbia, will soon remove obstacles.

The gravels of the southern portions of the Kootenay divisions do not appear to be so extensive, nor accompanied by such large areas of gold bearing formations as are seen in the districts north of the line of the Canadian Pacific Railway.

The most productive of these southern fields on the eastern side has been that occupied by Wild Horse creek on the western slope of the Rocky Mountains, and by Perry creek and Moyie river on the eastern slope of the Selkirk range.

The gravels which have been worked on these streams are chiefly of modern origin, although a portion of a tertiary channel was worked on Perry creek. The area embraced covers, for the three streams, some 40 square miles, underlain by slates and quartzites of probable Cambrian age, with patches of diorites included.

In this slate series occur schistose or "bedded" veins, often of large dimensions (on Perry creek reaching widths of 40 to 60 feet) carrying gold associated with iron pyrites, and occasionally with the higher sulphurets of copper. But the gold contained is fine and so intimately associated with the sulphurets as to preclude the idea of milling the ore; several extensive tests conducted in 1897 failed to discover the existence of paying veins and led to the conclusion that the gold in the gravels must have been derived either from richer portions of these veins, long since eroded, or that it had come from the outcrops of pay chutes now deeply buried beneath a heavy drift.

Small amounts of gold have been washed from recent gravel deposits in valleys occurring on the range of metalliferous rocks running north-easterly from Trail towards Kootenay lake, in Nelson mining division.

These gravels are the detritus of small quartz veins occurring in the granites and mica syenites of the country, one or two of which veins have been worked as lode mines in recent years and have made a small production. Their size however, is small and the free gold appears to be confined to the zone of decomposition, after passing which the values are contained almost entirely in iron sulphides.

The valley of the Similkameen and tributaries, in the political district of Yale, is the most important of the southern placer fields. Although one of the first fields discovered is has never been abandoned, and gravels on two tributaries (Tulameen river and Granite creek) are yet abundant and remunerative in grade.

In this district most of the gravels worked have been modern, but there are undoubtedly deep lying deposits of tertiary gravels there which may prove as high in grade as gravels of similar age have done in the northern districts.

The area of Similkameen country approximates 700 to 800 square miles, and although quartz veins have been found in rock exposures in the valleys, no systematic work has been done upon them; but from recent discoveries during the last twelve months there is every reason to anticipate the establishment of vein mining in this section.

The other southern sections of Okanagan and Rock creek are now abandoned to the Chinese, though in Rock creek, as previously mentioned, mining upon one vein has been profitably carried on for some years.

This vein in character is similar to those described as occurring in the granites near Kootenay Lake. It lies in a massive rock said to be diabasic (*a*), and other veins are found in the immediate vicinity. The region is one of flat dipping faults, and the values contained in the veins are associated with sulphides of the base metals.

A district to which reference has not before been made is that lying between, and embracing, Bridge river and Cayoosh creek in Lillooet. Gold bearing gravels were found here early in the sixties, and considerable quantities of gold were washed from them. The valleys of both streams have great exposures of rock, in many places narrowing to a rock gorge. These rocks are a series of slates, quartzites and schists, said to be of early Palaeozoic age, which have interstratified with them layers of quartz, the whole being more or less crumpled or folded, and traversed by a complex series of faults.

It was early acknowledged that these quartz bands were the original source of the gold found in the bars of both streams, and some of the early work in quartz mining was done on the "Bonanza" ledge on Cayoosh creek. In 1896 the discovery of an outcrop of quartz carrying very rich specimens attracted great attention, and the progress of the "Golden Cache Mines Company" formed to work this deposit, has attracted equal attention. The results which have been made public by this company regarding its operations have not been such as to inspire belief that these quartz veins will be found to be of high grade or specially remunerative. But attention has been directed to the field which covers some 400 to 500 square miles, and it is not unlikely that profitable ore bodies will be found there

Large exposures of quartzose schists, associated with quartzites, and carrying interbedded quartz veins have been known (and worked to a slight extent) for some seven or eight years in the camp of Fairview, on the Okanagan river, but so far the various attempts to work these deposits have not resulted profitably, with the exception of one chute in the "Morning Star" mine.

Vein mining for gold in British Columbia is at present practically the monopoly of the Trail district, in which (as previously noted) the gold occurs so intimately associated with iron and copper sulphides as to make it a smelting ore.

Trail district, politically, covers about 600 square miles, but the area within which payable ores occur is less than 20. This district has so far produced a total of $4,000,000 in the four years of its existence as a producing country. The ore bodies have been the subject of careful study by the Geological Survey (*b*). The deposits appear to have the form of replacement veins along lines of fracture occurring in an irregular area of eruptive rock which has for its centre a mass of gabbro surrounded by an area of fragmental volcanic rocks frequently appearing to be porphyrites. Along these lines of fracture or of fissuring have been deposited bodies of iron sulphides (chiefly pyrrhotite) associated with small quantities of chalcopyrite and arsenopyrite. In some cases two walls are apparent, but in most of the deposits there is but a single wall which does not act to define or limit the ore body, but is simply evidence of the channel through which the mineral solutions may have acted to dissolve away the country rock and deposit their metalliferous contents. Comparatively few of these deposits of iron sulphides are sufficiently auriferous to pay for their extraction, and so far no indication of values can be obtained except through assaying. Owing to the hardness of the eruptives in which

(*a*) Annual Report, Minister of Mines, B. C., 1897, p. 604.
(*b*) Summary Report, 1896, p. 23-29.