quitious Chinaman builds many wing-dams every year, and the fact that it is impossible to obtain Chinese labour when river mining can be carried on would seem to indicate that the work is remunerative from their point of view. The benches vary much in value. There appear to be two pay streaks, one right on the surface and one on the bedrock. In one place several thousand yards washed by the Vermillion Forks Mining Company indicated a gold content of 12½ to 15 cents per yard, and in a lower bench nearer the river of nearly 30 cents. This latter would, however, require dredging or elevating, as the channel is below the present river bed. This claim was not worked this summer, as owing to the extremely light snowfall it was not considered worth while clearing ditches, etc., for a very short run. The water supply as at present used being only obtained from two small creeks with a system of reservoirs. Higher up the Similkameen above the coal basin the benches are more easily workable, owing to the existence of heavy seams of clay and sand and the duty of the miner's inch is consequently much heavier. Some of the low-lying flats are eminently suitable for dredging. The existence of gravels underlying these tertiary coal measures is a very interesting question which could only be solved by boring. The question of the origin of this gold which must in the aggregate amount to an enormous sum, is as yet a problem, though it appears probable that the erosion of the immense mass of Copper and Whipsaw Mountains with its quantities of low-grade copper-gold ores may account for it to some extent. The proportion of platinum which amounts to as much in some cases as one-quarter or one-fifth of the weight of gold washed, would seem to indicate that some of the erosion must have taken place from the west, as the only known source of this metal is in the area spoken of above on the Tulameen.

Areas 7 and 8. In following up the Similkameen River the outcrop of the Tertiary measures mentioned above are covered by a thick bed of volcanic rocks apparently of a porphyritic character. Other cappings of a like nature occur on the northern end of Copper Mountain being more andesitic in character and the later floes being very loose tuffs and breccias. Nearly all these floes can, it appears probable, be traced to a mountain situated on one of the tributaries to Wolf Creek near the point marked "volcano" on the map. This mountain is a well defined volcanic crater of which one wall has burst away, leaving a high red bluff, on the other side making it an easily recognized peak from any point. In the bluff layers of ejecta are visible to a great height. Some of these layers carry very fine nodules of chrysopease and chalcedonic matter. Large trunks of silicified trees are also to be seen and the approach to opal is in many cases so close that perhaps closer search might discover some of gem value.

To return to the Similkameen River. Below these volcanic beds the crystalline rocks of Copper and Whipsaw Muntains appear. As showing that these rocks represent a very ancient massif it may be noted that the decomposition at the original surface has extended for a horizontal distance of nearly 300 yards on the river banks, making it appear almost schistose at a distance. The nature of this rock varies locally, but from a mineralogical point of view both these mountains Copper Creek and Whipsaw Creek may be treated as one. The Similkameen has evidently cut its way through a line of rock which was very feldspathic and lent itself readily to the action of the river. Evidences of this are seen by the bluffs of very soft red and gray rock which appear on the river varying in colour according to the nature of the contained feldspar. Otherwise the composition of the rocks is very similar and the nature of the contained ore bodies and their continuance from one mountain to another shows them to be of the same geological age and that the mineralization has proceeded upon the same system. In a paper of this nature it would be impossible to go into technical details of the genesis of these bodies let alone the fact that such would require a very minute geological study by an accomplished petrologist, but it may be noted incidentally that in the opinion of the writer there are two distinct classes of veins, one class being only to a small extent represented on Whipsaw Mountain.

In one class may be placed the bornite carrying dykes of the Sunset Copper Farm, Gardner, etc., which would appear to have a course approximating northwest, and the other the chalcopyritic ores of the other claims and of Whipsaw Mountain, which run more westerly. The first class may be taken to represent a large diabase dyke of unknown width, probably a very long and wide lens whose greatest width is shown on the Sunset where the hornblende of the diabase has been replaced by bornite. Lenses of similar nature but smaller may be seen on other claims, and in one case a vein of feldspar containing nodules of bornite (sometimes of large size) has been opened up. Another is where a dyke of pink feldspathic rock has bornite disseminated all through, apparently replacing hornblende. The second class spoken of seem to consist rather of fissures or breaks in the country rock which have been filled by later infiltrations of feldspar accompanied by the lower grade sulphuret chalcopyrite. Many of these feldspathic veins are visible in the district but not in all cases cupriferous. Both of these systems would appear to be the result of concentration from the surrounding country rock which can be shown on analysis to invariably contain a small amount of copper and a trace of gold. In one place where the rock was of the nature of a porphyritic granite, samples taken over an area of half a mile in length and a quarter of a mile in width gave assays of nearly $50 in gold and one half per cent. Cu. It is possibly from the concentration of this immense body of auriferous bedrock that the placers of the Similkameen are largely due. The summits of the mountains within the copper belt are approximately 1,500 feet above the Similkameen river and the width of the valley between these summits about one mile.

The general petrological character of the whole massif may be taken to be a porphyritic granite which has become more or less decomposed in its ferro magnesian constituents, probably through the hot waters by which the metallic sulphides were deposited in replacing these constituents. The rock in places is almost entirely feldspar, the sprinkling of hornblende, biolater, mica and a little quartz being quite small in quantity. The massif is dyked and fissured in various directions by finer textured rocks of varying ages and types, such as felsites, syenites, etc.

It can be taken as extremely probable that veins