camp, it is unreasonable to suppose that pay shoots are confined to the few earliest locations. While development work has shown that ore in workable quantities is much more restricted than was expected during the exciting days of the boom, it has by no means exploded all possibility of further discoveries.

The stratified rock in places are impregnated with arsenopyrite and other sulphides. The rock matter is usually very siliceous. Such material, if it contained values, could be very cheaply mined or quarried, and might be amenable to a cheap process of treatment. Samples were taken from the surface of such an impregnated band, running north from the Giant workings, through the west end of the Novelty. The exposures were laid off into blocks, and chip samples, systematically taken from the surface, were pulverised and reduced to convenient bulk for assay. While such samples are not absolutely representative they should afford some indication of the contents of the rock. Of twenty-three lots taken, twelve gave the following results per ton in gold: Two went $1.20, four $1.60, one $1.80, two $2, two $2.40, one $3.60, and one $4; five gave results under $1, and six yielded only traces of gold. A large sample averaging $2.30 was taken, and is undergoing concentration tests by Prof. J. C. Gwillim at the School of Mining, Kingston, Ontario. It would appear from the foregoing that the more heavily impregnated areas of these stratified rocks are deserving of more careful tests as to values and amenableness to concentration or cyaniding. If the values are distributed throughout a considerable mass of such rock, so as to ensure a large tonnage, and concentration, or cyaniding is successful, $2.50 or $3., or perhaps an even lower grade rock, might be profitable.

It is to be emphasised that the present conditions are much more favourable for cheap mining and smelting than formerly, as a glance over the section of this report on "Costs of Operation" will show.

While it is conceivable that costs may be still further reduced, it is uncertain, and it might easily happen that future conditions would be less favourable for operating than the present; so that the present seems to afford the most favourable opportunity for any projected prospecting, development and mining. That this is the case, is shown by the leasing of old claims by practical miners, which was a marked feature in the past year's operations.

There are a large number of prospects now idle, equipped with serviceable compressors and hoisting gear, which machinery could probably be secured at a reasonable price for such development work. Prospecting in this camp requires the best technical skill, bold and courageous persistence, cool judgment and ample capital. With the knowledge that has been gained regarding the character and modes of occurrence of the ore bodies in this camp, with the present low cost of treatment, and with operations on a sane and business-like basis, the chances for success are vastly greater than in the earlier days.

A production of $34,000,000 in the first decade of a camp's development is a tribute to its substantial worth. While the profits on this ore have not been what might have been wished, the mines have been and are operating at a profit. Had all the ore been treated at the present cost, after allowing for all the past expenditure in development, equipment, fixed charges, etc., the net profit would probably considerably exceed $8,000,000. All these costs have now been lessened, and there are further economies projected to secure the maximum profit on each ton, and to bring lower grade material into the workable class.

METHODS OF MINING.

The first development has usually been surface stripping, tunnelling along the vein, or cross-cutting to it. A few of the mines—as the Jumbo and Columbia-Kootenay—are so situated that they have been wholly or largely developed by tunnelling. When the positions of the vein and ore-shoots have been satisfactorily determined, shafts are generally sunk on the dip of the vein. At convenient intervals, formerly about 100 ft., but now usually about 150 ft., stations are cut out and horizontal drifts run along the strike of the vein, following it as closely as possible. The rock is firm, and timbering has not often to be resorted to in stations and drives, except occasionally when fissure zones are encountered. The numerous dykes and zones of fracture cause interruptions in, and often displacements of, the vein, so that after passing through them, cross-cutting or boring has often to be resorted to in order to locate the vein. Systematic cross-cutting and boring are also necessitated by vein branchings, shifting of pay shoots from one set of planes to another, and the possible occurrences of parallel ore-bodies. The extent to which diamond-drilling is utilised is shown by the expenditure by one mine alone of $75,414.68 on this work up to December, 1904. Accurate geological maps of the levels showing the positions of the veins, ore shoots, faults, dykes, etc., are valuable aids in development, indicating, as they do, what may be expected on a new level and the direction of displacement, etc. Such maps are kept up and constantly utilised in planning prospective work in most of the larger mines. Raises are put in between levels where needed, as man-ways or chutes or to prospect the veins or for purposes of ventilation. When an ore shoot is located, a sill-floor is excavated, and, if the shoot is wide, sills and square sets are put in position. The ore is then extracted by overhead stoping, the timbering advancing by successive floors with the stoping, till the level above is reached. If the shoot is 15 ft. wide or less, stulls are generally used instead of square sets. The ground stands well in most places, timbering being necessary only for convenience in mining, and to prevent the infall of loose blocks and slabs. In some cases—where the ground is not subject to slabbing—only one floor is timbered for tramways and chutes, the stoping above being done from the top of broken-down ore, enough being drawn to keep the broken ore a convenient distance below the backs. When stoping is finished, the ore is drawn. The large chambers thus left may afterwards be filled with waste, or used as store-rooms for material too low