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The workings on the western division have reached nearly 400 feet in depth, and have developed no special feature beyond a comparatively well defined formation, the veins on both the north and south dips maintaining their full strength and show no sign of extinction.

One important feature demonstrated in this district is that comparatively no flow of water worth mentioning has been found in the deep workings. What has to be contended with is from surface sources largely increased in the old workings by the ill advised methods of mining twenty-five years ago where the drainage has been *into* instead of *from* the mines, but this can be avoided in the future by making new openings and operating under the old works which in general have no considerable depth.

During the first 14 years that the Waverley Mines were operated under the crude methods of those days some 51,000 ounces of gold were reported at the Mines Office, fully eight tenths of which were obtained from West Waverley, since which time until the last two or three years past all mining there was relegated to the spasmodic and destructive operations of tributors.

The ore on the east division, though discovered simultaneously with that on the west and at the time considered the richest in gold, was supposed to be circumscribed in area, and special local conditions prevented at that time any extensive operations. Yet it is on this east division where the most interesting geological problems are presented, and where glacial and pre-glacial forces have left their unmistakable imprint.

On the east side the exposed rock rises abruptly from the lake in a strong mountain range, backed by an extended table-land and attaining an altitude of 200 to nearly 300 feet in places, and this heavy deposit of metamorphic rock appears to have been an occupant in possession long anterior to the anticlinal upheaval, which brought the auriferous lodes of the Waverley district to the surface, and further, this back bone of table rock appears to have presented decided objections to being disturbed by the ambitious new comer, and if the two powers of the period exchanged any courtesies they were probably akin to those between the ant and the elephant "Who are you shoving," at any rate there are evidences of some very decided "shoving" on the part of the latest arrival and some equally obstinate resistance by the original "party in possession" and so vigorous was this conflict that the old mountain carries very conspicuous marks of it on his back, and had grudgingly to afford room for the obtrusive metaliferous veins, but still held its own so well that there are no scars on its western brow, and it had such a firm foothold under the waters of the lake below that there are no signs of his having "budded an inch."

In 1862 some drift quartz carrying gold was found on the top of this hill, and further search revealed the outcrop of a sheet of quartz lying nearly horizontal, covered with two to four feet of soil and a corresponding amount of rock, and continued workings disclosed what might aptly be termed a blanket of quartz overlying the hill and gradually dipping south, west, and north, but most decidedly to the west, or toward the lake at the foot of the hill, and several small owners soon made numerous openings on it, each apparently intent on forming open reservoirs for the local water-shed and in which they were exceptionally successful, and discounting future for immediate results, soon got it in such condition that no one could work it, not an occasional effort of tributor, who managed to find some spot of ore on high ground. But practically everything was under water and it became generally conceded that the only economic means of operating it would be through a tunnel driven from the lake level and intercepting the vein at from 200 to 400 feet from or below the surface openings and thus escape the overwhelming water of the surface. The scheme though a good one was confronted with the necessity of providing many thousand dollars to carry it out, also a further deterrent was the frequently expressed doubt of the vein existing at that depth and in such position as to be reached when proposed. But after a lapse of many years such a tunnel was eventually driven some 635 feet and last December struck the vein on the back of the crown of the anticlinal on its western dip toward and presumably under the lake where as before mentioned the old mountain has such a firm foothold.

The developments from both tunnel and surface workings are most interesting to the geologist as well as to the miner, a very interesting feature being the peculiar forms presented by the Auriferous vein.

At the outcrop it was crimped or folded together upon itself, and if smoothed out like a sheet of paper would have presented a vein not over 10 to 12 inches thick, but being folded together it filled a space of 20 to 30 inches, and with associated slate occupied a working belt of about 48 inches between the upper and lower enclosing walls of hard metamorphic rock, and when denuded of the overlying rock presented the appearance of rows of barrels and hence the name "Barrel Lode" was applied.

There was originally much speculation as to what would be the form of the vein at 300 to 400 feet below the surface. Some thought it possible that it would be smoothed out, that is, divested of its crimpings, which were presumed to be the result of surface shrinkage or compression. On the contrary the foldings as demonstrated in the tunnel workings are in no way changed beyond being apparently compacted by the increased weight of the superincumbent rock.

Whatever may have been the difference in age or time of deposition of the several strata and auriferous veins, the condition in which we find the quartz may be accepted as presumptive evidence that at the time of upheaval, the material composing the several belts must have been in different states of rigidity, as the quartzite under the barrel lode shows only occasional change of form, consequently must have been quite rigid, while the overlying rock was most pliable and conformed in some measure to the forces exerted upon it, but the auriferous belt, particularly the quartz part of it (and now the most rigid of all) and which plainly shows the marks of laminated deposition must have been the most plastic of the lot, to admit