

At the surface above where the present adit is being driven the Iona reef shows a thick outcrop of quartz, and many large boulders strew the slope from the outcrop downwards, but these fail to convey an idea of the great size of the reef, as this is seen underground. As yet prospecting has been carried on by a single adit, which, cutting the lode 30 ft. to 40 ft. under the surface, shows the foot-wall to be decomposed andesite, the hade of contact with the reef being to the south-west at an angle of about 45° . The reef itself has, at right angles to its strike, been driven into a distance of 42 ft., at which distance the hanging-wall was not met with, and it is therefore as yet uncertain what the actual thickness of the lode may be. The general body of the lode consists of flinty or curly agate-looking quartz with bands and ribs of granular and crystalline quartz. In driving across the reef from the foot-wall the first 25 ft. of quartz was considered not "likely-looking" stone, but for the last 15 ft. or 16 ft. there have been indications of both gold and silver in the reef, indeed, small nests of very rich ore were found. One such small sample, on analysis made in Auckland, yielded gold and silver to a value of £263 per ton, the gold and silver values being about equal. But this excessively high return gives no indication of the actual value of the lode. It is difficult to take from the ore in the paddock samples that appear much better than the general run of the stone. The samples taken, and of which the returns are here given, were selected in the manner above indicated, and therefore represent fairly the better class of ore, while yet they are in no sense specimen samples.* This lode strikes to the north-west, and eventually must pass into the Aotea No. 1 and the Great Barrier Claims. Quartz is found along the course here indicated, but no prospecting laying the reef bare has been done. From the foot of the high cliff under the trig. station the direction the Iona lode takes has yet to be proved, other massive lodes appearing in this part; but, as far as the Iona Claim extends, there can be no doubt as to the identity of the lode stretching along the foot of the sinter cliff.

Kaitokai Claim (Kaitokai Nos. 1 and 2).—A drive is being carried south in this claim, commencing 300 to 400 yards to the north-east of the line of cliff. This will cut a small leader of quartz showing on the surface, but will have to be considerably extended towards the mountain to cut the Iona reef, which must occur beyond the south boundary of this claim. The adit is therefore driven in the hope that a silver-bearing reef will be cut before reaching the south boundary of the claim.

Great Barrier Claim.—This claim is well situated with respect to the probable continuation into its area of the Iona reef, and, at the same time, the occurrence of several other reefs within its boundaries. Of the Iona reef within this claim nothing is known, but its presence is suspected by the occurrence of huge blocks of quartz along and near the southern boundary of the claim. Such quartz does, indeed, betray the presence of at least one massive lode, and one such, *in situ*, is seen crossing Ryan's Creek, on the boundary of the Great Barrier ground and Ryan's Freehold. But this reef has not a thickness of more than 5 ft., and other and even larger reefs must exist higher on the hill to the south. At the present time it does not appear as a matter of much moment whether the Iona reef runs through the property or not, the attention of the directors of the Great Barrier Company being chiefly devoted to the development of a small but exceedingly rich lode occurring a little to the north-east of the line of the larger reef crossing Ryan's Creek. This lode ranges from less than 1 ft. to 2 ft. or a little better between the walls, but generally, over the distance it has been driven on, it may be considered as averaging 15 in. in thickness. The strike of the lode is east and west, and the dip south, but usually at a very high angle. The lode occurs in hard dark-grey andesitic rock, over which Ryan's Creek is precipitated as a cascade some 30 ft. in height. From the creek valley below the fall a low-level adit is being driven to cut the lode 60 ft. or 70 ft. below the present level, driven east along the lode. The lode yields silver to an amount considered very payable; one ton treated gave a value of £15 per ton, and since the above result was known a considerably larger parcel (10 tons) of ore has been shipped for treatment at Swansea.

Ryan's Freehold.—This is the area contiguous to the Great Barrier, on its western boundary, the reef from which passes into Ryan's Freehold at the waterfall, in the bed of the creek. In this the reef has been explored west a distance of 60 ft. The ore-band is continuous, and at the upper level shows a thickness varying from 12 in. to 15 in. or 18 in.; 15 in. may be considered the full average thickness of the lode in this part of its course. The ore is richer here than in the Great Barrier Claim, and magnificent samples might have been collected from the heap when the mine was visited. At that time a winze was being sunk to cut the lode at a further depth of 25 ft. to 30 ft. This has now been done, and it is reported that in the winze the lode shows 30 in. in width, carrying ore quite as rich as may be had from the upper level. A low-level adit is contemplated, which may be made to cut the lode 70 ft. to 80 ft. below the present workings, and at which it is hoped the thickness of the lode will be further increased. Many tests on small samples of the ore have been made, leading to the conclusion that the value of the ore is not less than £36 per ton, and from the character of the ore coming from the mine at the time of my visit the above seems to be a very moderate estimate of what the average yield will be should the ore continue of the same grade. A sample analysed at the Thames School of Mines yielded at the rate of 500 oz. silver to the ton. The country on the foot-wall of the lode within Ryan's Freehold is fairly well decomposed to a kindly-looking "sandstone," but this will probably not continue to any great depth, the foot-wall in the winze being very hard andesite; so that anticipations of the presence of soft country along the western part of the lode are of doubtful realisation. There is ample warrant for the energetic prospecting of this lode in both claims in which it has been traced, and the ore is rich enough to pay for transit to Europe for treatment. Its richness, therefore, to some extent

* The analyses referred to are as yet uncompleted, but they show that, while none of the stone is very rich, all parts of the reef contain some silver, the poorest parts yielding about 5 oz. of silver per ton, and of gold but a trace.