

to 18 in. in width. Two other cross-cuts, 20 ft. and 55 ft. in length, were also driven. No return of gold has been made; therefore it would appear that no crushing took place. Thirteen men were employed.

Empress of India Mine (Area, 85 acres and 37 perches).—A large amount of work has been done in this mine, in which forty men are employed. 4,170 ft. of driving has been done, the greater part being on the reefs. Winzes have been sunk, and other prospecting work done. The reefs and leaders traversing the property vary from 3 in. to 4 ft. in width. An option is held over the property by an English company.

Otunui District.

Very little prospecting was done in this district during the year.

Mangakirikiri District.

A discovery of cinnabar was made by the Lowrie Brothers on the western side of Otunui Creek, about midway between the Kauaeranga Creek and the Otunui Mines. Several outcrops are seen on the range from 200 ft. to 500 ft. above the creek-level, in which small pockets of cinnabar are to be found. The rock formation is apparently due to thermal agency, and the matrix consists of this rock and bunches of quartzite. The vermilion colour is clearly visible in the quartz and in the overlying surface. Prospects washed in the dish show a tail of cinnabar. The same is also got by pounding the solid quartz and panning off small parcels.

The quantity of work done is insufficient to enable a fair opinion to be given as to the extent of the matrix, and whether it occurs in the form of a reef or lode. The appearance of the places where the cinnabar is to be seen gives encouragement for further exploration, when possibly a deposit of value may be met with.

Mr. Alexander McKay, the Geologist for the Mines Department, who visited the place subsequent to my seeing the outcrops, has furnished the following report:—

“I have the honour to report that, on the 26th April, I visited the cinnabar lode occurring in the Kauaeranga Valley, about six miles from where the river enters the Firth of Thames at Shortland. The mercury deposits occur within the valley of Mangakirikiri Creek, about a mile from where that joins the Kauaeranga, and are more particularly located along the south-west side of Otunui Creek, a tributary of the Mangakirikiri. Mercury-ore as cinnabar is found along the hill-slopes on the right bank of the creek over a distance east and west of about 6 chains, and from the crest of the ridge 500 ft. to the level of the creek, which may be some 200 ft. above sea-level. The exact location is about a mile north-west of the Kauaeranga River, and the most westward and highest of the outcrops examined appears near the crest of the ridge, at the height indicated, as a series of sinter blocks so arranged that they appear to dip to the east, and indicate the occurrence of a solid lode in the near neighbourhood, but as yet this has not been traced at this the highest outcrop. Distinct traces of cinnabar are to be found here both in the quartz blocks and in the country-rock upon which they rest, and to all appearances there is here the outcrop of a band or stratum of highly silicious country, carrying a percentage of mercury-ore. Two or three chains to the eastward, at a slightly lower level, another outcrop of quartz-carrying cinnabar occurs. This also strikes north and south, and dips to the east, at angles varying from 40° to 48°. The stone varies from 3 ft. to 4 ft. in thickness, and at various horizons, principally in the middle of the lode, carries ore that itself varies from medium to rich. Some work has been done at this place to expose the lode along its strike, and this work shows that both this and the higher outcrop is underlain by a grey rock, consisting mainly of feldspar corresponding to the kindly sandstone of the miner, while in both cases the more silicious deposit is overlain by breccias and tufaceous sandstone that evidently are of younger dates. Descending the slope eastward towards the Mangakirikiri Creek, some 6 chains, a third exposure of quartz-rock carrying cinnabar is seen, which has been bared at three places sufficiently to show that its extent is considerable. The ore at this place is more generally distributed throughout the stone than at either of the two localities mentioned as occurring higher up the slope of the hill, and from stone which at first sight shows little trace of the presence of cinnabar a fair prospect can be obtained by the rudest method of crushing and panning off. Passing to the south-east along the middle slope of the hill a constant exposure of quartz-rock is met with, which at several places shows the presence of cinnabar; and at one place there is a very considerable development of quartz-rock, forming a line of cliffs which, though not closely examined, seemed likely to carry the ore of mercury, being similar to the outcrops already mentioned. More to the east, masses of quartz are met with on the slope of the hill, and as loose boulders in the hollow forming the source of a small creek descending to the Mangakirikiri, and here also it was said prospects of cinnabar could be obtained from the soil and near the surface. Finally, near the crest of the ridge, the most easterly of the various prospecting holes is situated. Here but little work has been done—not more than to prove the presence of the ore, and the quartz matrix seems to be but feebly developed. I was informed that some 12 chains to the westward of this area good prospects of cinnabar could be washed from the soil, and that masses of quartz there occurred similar to what appears within the area more particularly prospected, and which is here reported on. Numbers of analyses have been made of the stone at the School of Mines, Thames, and I am informed that the results have been from 2 to 25 per cent. as from the least promising that showed cinnabar to the best that could be found. I obtained samples which, I think, should exceed 25 per cent., but such rich ore is limited in amount; while, so far as I could judge, there is a considerable amount of medium richness. As to the nature of the deposit, I conclude that the ore matrix is the deposit of a thermal spring which seems to have been active at different periods, during the intervals between which activity deposits of another kind—ash and tufa beds—were accumulated over the first-formed sinter deposits. The character of the deposit as above indicated is demonstrated by the occurrence of numerous dicotyledonous leaves in the upper part of the sinter deposits or in