

A sample of the pigment separated from the gravel was examined by the Dominion Analyst, who reported that it consists of "a fine-grained clay and possesses a pleasing red-brown colour. It is, however, deficient in tinting and covering powers, due no doubt to the low percentage of iron oxide present." The sample contained 10.56 per cent. of iron oxide, whereas an ochre of good quality should contain 20 per cent. or more.

12. MARBLE IN THE TAKAKA DISTRICT, NELSON. (Summary of Report by J. HENDERSON.)

Fine-grained light- and dark-grey marble, estimated to be from 2,000 ft. to 3,000 ft. thick, occurs on the western side of the Takaka Valley, some five or six miles south of Takaka Post-office. The lower part is interbedded with feldspathic micaceous schist, and rests on similar rock. The strike is from north-west to west-north-west, and the dip north-eastward at angles of 25° to 60°.

Quarrying for building and decorative stone has been started at several points on the low hills that rise from the valley-flats, here about 170 ft. above sea-level. Unfortunately most points of attack are close to a fault which, striking north-north-west, has, as indicated by the displacement of the Tertiary limestone resting on the marble, a throw to the east of about 180 ft. The master joints strike nearly east and west and dip steeply southward, and there are other joints more or less parallel with the fault, which, of course, has shattered the marble close to it. The stone, which is of fine quality and pleasing appearance, is from eight to ten miles by level road from the port of Waitapu.

13. COAL IN THE TAKAKA DISTRICT AND IN THE OTIMATAURA VALLEY. (Summary of Report by J. HENDERSON.)

The coal-measures and coal-seams of the Takaka district have been described in N.Z.G.S. Bull. No. 3, and those of the Otimataura Valley in Bull. No. 25. Some few details were observed in addition to the descriptions of the coal-bearing strata given in these reports, but nothing of special interest or at variance with their general conclusions.

14. TALCOSE SCHIST IN SPRINGBURN VALLEY, KAWARAU SURVEY DISTRICT, OTAGO. (Summary of Report by J. HENDERSON.)

Kawarau Survey District forms part of an area geologically examined by Professor Park and described in N.Z.G.S. Bull. No. 5. The Springburn, a branch of Gentle Annie Creek, which joins Kawarau River from the north four miles east of Gibbston, drains part of the southern end of the Crown Range. A fault striking south-east along the headwaters of the Springburn extends towards the Nevis junction, where the Kawarau forms an abrupt southward bend. In this fault, near the source of the Springburn, occurs the large mass of serpentine described by Professor Park (pp. 28 and 29 of Bull. No. 5). In another part of the same fault, downstream from the serpentine, crushed chloritic schist containing talc outcrops in the bed of the Springburn. Talc-chlorite schist also outcrops at several points along the western side of the valley and some 5 or 6 chains from the stream. Other outcrops occur about 15 chains east of the Springburn.

Wherever observed the talcose chloritic schist was crushed and contained a large proportion of light-greenish, fine, flaky material which could readily be separated from the rest of the rock. This flaky material has been analysed by the Dominion Analyst (see p. 26, 54th Annual Report of the Dominion Laboratory, 1921).

15. NOTES ON THE GEOLOGY OF THE NEVIS VALLEY, OTAGO. (By J. HENDERSON.)

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16. CINNABAR IN GREENVALE SURVEY DISTRICT, NEAR WAIKAKA, SOUTHLAND. (Summary of Report by J. HENDERSON.)

Three veinlets of cinnabar in a zone 10 ft. to 12 ft. thick have been exposed in trenches on the top of a rounded hill 920 ft. above sea-level on Section 8, Block 11, Greenvale Survey District. This locality is a few miles north-east of Waikaka. Two vertical shafts respectively 25 ft. and 50 ft. deep have been sunk, and some 150 ft. of driving done at a depth of 25 ft., mostly on the largest veinlet, which consists of about 1 ft. of somewhat crushed rock occasionally showing slickensides and containing a nearly continuous but thin and irregular sheet of cinnabar up to $\frac{1}{2}$ in. thick. An adit has been started 100 ft. below the outcrop, and when visited (November, 1922) had been driven 230 ft. on a northerly course. The veinlet prospected above should be cut at about 600 ft. Dabs of cinnabar were observed on joint-faces at 166 ft.; from the rock broken from the face at 230 ft. a little cinnabar could be obtained on panning.

The country containing the cinnabar is weathered greywacke, the veinlets in places are slightly silicified, and pale iron pyrites occurs. The rock removed from the drives on the veinlet on the top of the hill had been kept separate and a general sample of this, taken by the Inspector of Mines, Dunedin, was found by the Dominion Analyst to contain 0.88 per cent. of mercury.

17. NOTES ON THE GEOLOGY OF THE NASEBY DISTRICT. (Summary of Report by J. HENDERSON.)

The oldest rocks of the Naseby district are the greywackes of Mount Ida and the schists of Quartz Reef Hill, a rounded prominence at the head of Hogburn Stream, on which the township is situated. These schists contain numerous quartz veins. The beds next in age, consisting of red-coloured breccia-conglomerates known as the "Red Bottom," are probably the oldest Tertiary strata in the district, but their relation to a series of quartz-grits, which pass laterally into white quartz