The question of the auriferous character of the gravels of the "Old-man bottom" has been dealt with in the report containing the description of the blocks reserved for mining purposes (Mines Reports, 1896, C.–9); and Block LIII., within which is situated the part of Boatman's Creek forming the subject of this report, is described at page 4 of the report in question (*q.v.*)

That portion of the valley of Boatman's Creek which is under consideration has a creek channel of moderate width, in and along which lies a considerable amount of drift timber. The banks are bare of timber, but a few feet from the stream the flats have till recently been covered with bush and stumps and dead timber, the presence of which may to some extent interfere with the working of the flats.

As bearing on the matter of this report might be raised the question, much discussed by miners on the West Coast, as to whether the gravels of the "Old-man bottom" carry appreciable quantities of gold or no. This has been dealt with sufficiently in the introduction to the description of the blocks reserved for mining purposes above cited, and in the reports for the year 1895, for which see Mines Reports, 1895, C.–13, "On the Geology of the South-west Part of Nelson and the Northern Part of the Westland District."

ALEXANDER McKAY,
Government Geologist.

The Under-Secretary for Mines.

REPORT ON THE COPPER DEPOSITS OF OMAUNU No. 2, WHANGAROA COUNTY.

ABOUT the beginning of February, 1898, an examination was made of the copper deposits at Omaunu No. 2, Whangaroa County, on which the presence of copper-ore was first ascertained in 1892.

Copper was first discovered in a small creek, which, from the trig. hill (Maunga-meme) overlooking the lower Kaeo Valley, drains south-west into the Upper Pupuki. The outcrop consists of a series of pyritous boulders forming a bar and rapid in the bed of the stream. Since the discovery a mineral lease of 100 acres has been secured by Messrs. Bell and Houston; and subsequently an endeavour has been made to ascertain the size and direction of the lode, and whether or not other lodes exist on the same property. Other leases have been granted; and at the time when the district was visited prospecting was being carried on on two or more of these, and has resulted in the discovery of at least a second lode of considerable size.

The rocks of the district consist of Palæozoic slates and sandstones, with which serpentines are associated within the area over which the copper-lodes have been found. More to the south-west, in the Upper Pupuki and Kaeo Rivers, diorite intrusions are plentiful, and the whole forms part of a belt of mineralised country that extends from Puhipuhi in the south to the north of Doubtless Bay, Mangonui.

At the point where copper-ore was first discovered on Omaunu Block, in the bed of the creek, some endeavour has been made to ascertain the size and direction of the reef, and the character of the rocks with which it is associated. A shaft was sunk on the east bank of the creek close to the outcrop of the lode as seen in the bed of the creek, but this was beyond the outcrop, and, the dip of the lode being north, the rocks on the foot-wall side of the lode were cut into, and no lode of any kind were met with in a depth of 30 ft. A drive was made in a north-west direction till the line of creek-channel was driven across at a point where ore showed vertically over the drive; but, the drive being nearly in the direction or strike of the lode, this, as far as carried, continued in the foot-wall, and failed to show the presence of ore. The original outcrop in the creek-bed showed as a mass of angular blocks that crossed the creek apparently in a west-north-west direction, or nearly at right angles to its course, and which continued up and down the creek some 10 ft. or 12 ft., and constituted the bed of a miniature rapid thus formed.

The ore at the surface consisted mainly of iron-pyrites, but many of the blocks, on being broken into, showed the presence of yellow copper-ore of good quality, and the sample originally taken and tested at the Colonial Laboratory, Wellington, yielded over 30 per cent. of copper.

To lay bare the outcrop the loose blocks in the creek were removed, and all loose material from the foot-wall side of the lode to where it began to be confined by the hanging-wall, but no attempt was made to trace the ore underfoot where so covered in the direction of its dip. On the west side of the creek a pit was sunk close alongside the outcropping ore, but this again was in the foot-wall of the lode, and was not so disposed as to prove anything respecting the lode itself. On both sides the copper-ore has a tenacious clay of a blue colour, which must be regarded as lying between the walls proper. The lode itself is mullocky, and quartz is almost absent.

The rocks exposed in the shaft and drive, and developed on the foot-wall side of the lode, are sandstones and shales of a type such as characterizes the young Secondary rocks of the district, and are like the rocks of the Pupuki Lower Valley, and calcareous in character. The nature of the hanging-wall outside the "pug band" has not yet been definitely ascertained. On this side there is, and apparently over the pug band of the hanging-wall, a thick band of iron-gossan, which, though completely oxidized, still seems to indicate a massive body of pyritous ore which has yet to be cut into and explored. A pavement of boulders of volcanic rock is met with in the bed and banks of the creek, and for 5 or 6 chains higher up than the outcrop of ore the nature of the rocks cannot be ascertained till some distance away from the creek. Further towards its source the banks of the creek show rocks *in situ*, which, however, are decomposed, and a little higher up, at the waterfall, pass into the serpentine. In these rocks copper-ore again appears, some large blocks occurring in the bed of the creek, and others appear in the right bank (which, however, appears at this place to be slipped ground), while at the foot of the waterfall cliff a considerable block of ore lies wedged in a fissure of a rock at that place. From the few facts that could be observed at and near the waterfall it may be concluded that the direction of the ore band must be nearly east and west,