auriferous quartz are present, but of this there is no evidence here at Boatman's, nor at Reefton, and I cannot adopt the theory.

It has already been said that all the rock of Kirwan's Hill and the adjacent ranges to the north and north-east are slates and sandstones belonging to the Maitai series, of Carboniferous age, and that outside of this area eastward beyond the Waitahu the rocks of the Victoria Mountains are granitic gneiss, with belts and bands of mica-schist. From the absence of any such rocks amongst the *débris* covering the slope of Kirwan's Hill it is very unlikely that the loose quartz on the southern slope of the hill has been derived from the granitic region to the eastward, nor could the quartz material have come from the westward without being accompanied by granite from the conglomerates at the base of the coal-measures in that direction, and of other different and characteristic rocks lying in that direction.

The rich quartz that is found on the surface of the Lord Brassey Claim has therefore in all probability been derived from a lode not now seen at the surface, and which will most likely be found running along the western boundary of the claim mentioned. More to the westward for a considerable distance there is little indication of the presence of quartz reefs.

The Carboniferous rocks and the lodes which they contain belong to the eastern division of the auriferous rocks stretching along the east side of the Inangahua and Little Grey Valleys from Larry's Creek to Blackwater. This eastern division contains the lodes worked in the vicinity of the sources of Rainy Creek, and thence to Big River, and in some parts are characterized by comparatively thin veins of quartz rich in gold, as on the eastern slope of Merrijigs Hill. The slates and sandstones between the Waitahu and Larry's Creek extend considerably east of the boundary hitherto assigned to this formation, and towards the upper part of Larry's Creek there is a large area over which prospecting might be carried on with a fair show of success.

REPORT ON THE AURIFEROUS CHARACTER OF BOATMAN'S CREEK, INANGAHUA VALLEY.

SIR,— Wellington, 31st December, 1898.

In accordance with your instructions dated the 17th December last, in which I was directed to report on the geological features of the valley of Boatman's Creek, between Cronadon and Capleston, I have made the examinations required, and have the honour to submit the following report relating to the district above referred to:—

REPORT.

Boatman's Creek between its main source and where it falls into the Inangahua River drains across a variety of formations, almost all of which have been proved to contain auriferous reefs or deposits of alluvial gold. Its valley, more especially in the middle and upper parts, has been deeply excavated in an auriferous country carrying reefs, while below Capleston, where the width of the low grounds of the valley is greater, coal-bearing strata and gravels of later date are the only rocks.

Boatman's Creek has been worked for gold from Capleston upwards to the junction of the two main branches of the principal stream, and Little Boatman's Creek has been worked to its source in Specimen Hill. The amount of alluvial gold that has been obtained from this part of the watershed has been considerable.

At Capleston the slates and sandstones forming the Maitai series, and which constitute the formation in which lie the auriferous reefs of the district, are overlain by Cretaceo-tertiary rocks, comprising coarse conglomerates, gritty sandstone, and shales with coal-seams. The conglomerates and grits of this series are to some extent gold-bearing, though perhaps to a less degree than are the same beds within the watersheds of the Waitahu and the south branch of the Inangahua. Yet on being cut through and carried away by the action of the creek they must have yielded a considerable amount of gold, that may in part be looked for in the gravels that form the flats of the lower valley. At the lower end of the township the coal-bearing series is followed by heavy deposits of conglomerate and coarse gravels, locally known as "Old-man bottom." These gravels form hills on both sides of the valley to within a short distance of Cronadon, and over a width of from a quarter to half a mile, and to a depth varying from 200 ft. to 400 ft., they have been removed in the formation of the creek valley.

Gold occurs in the lower beds of the "Old-man bottom," and again in a horizon about 60 ft. higher in the series, and further down the valley on Boardman's property at a third and yet higher horizon. The recent alluvial deposits along the valley below Capleston should therefore contain gold, derived—first, from reefs in the slates and sandstones of the Maitai series; second, from the base of the coal-formation; and, third, from two or three horizons in the "Old-man bottom." And it is only on account of the comparative depth and wet character of the ground to be proved that gold-workings have not been essayed in the lower part of the valley, west of where the coal-bearing rocks disappear under the gravels of the "Old-man bottom."

That much gold has been liberated from the slate-formation the richness of the reefs worked and being worked is evidence sufficient. That gold also has been derived from the lower beds of the coal-bearing series there is also evidence, and yet more so it is clear that large quantities of gold have been liberated from the gravels of the "Old-man bottom" and should now lie along the bed and banks of Boatman's Creek. This may all the more confidently be presumed from the former presence of rich alluvial workings in the parallel streams to the north and to the south in part tributaries of Boatman's Creek. It is true that these streams are not of equal volume and do not cut so far back into the slate country to the east of the coal-bearing rocks, but this would only tend to show that the gravels of the "Old-man bottom" have been the principal source of gold-supply to such creeks as the lower part of Italian Gully and Frying-pan Creek.