

wrong. Hope River is running five miles across Gorge River and right through Gorge River Plateau ; Awarua River running miles across Pyke River, and so on. On comparing the coast-line of our old map, which I say must be about a mile and a half too long between Cascade and Big Bay, with the coast-line on the latest Admiralty chart, the following is the result : Jackson's Head to Cascade River, difference about three miles ; Cascade River to Big Bay, difference about five miles ; Big Bay to Milford Sound (River Cleddau, as given on Otago maps), difference about six miles. There are evidently serious discrepancies in the positions of the headlands of the coast which require rectifying as soon as possible:

Main Roads.—In regard to this point, the result of the explorations has been very satisfactory. A splendid inland line of road, from the Cascade Plateau to the junction of the Pyke and Hollyford can be had, and, what is more, there is only this one line of inland road possible, namely, across Cascade and Gorge Saddle and across Jerry and Pyke Saddle, as marked on tracing. The whole of the road-line has been explored, excepting that portion between Lake Alabaster and the Knoll, but it could be plainly seen from the ranges I was on. It presents no difficulty whatever. It is just a level run along the foot of the range from the Lake to the Knoll. The ascents and descents on this line need be nowhere steeper than 1 in 15, and along these, as far as I could see, there will be nothing but ordinary sideling cutting. I have been particular to watch for rock outcrops, and of these a few only are found along the west bank of Cascade River and on the east side of Lake Alabaster, neither of these, however, more than a couple of chains long. Of the three proposed connecting roads I have explored two, namely, the one into Barn Bay and the one into Big Bay. Neither of these presents any difficulties. The third one, into Martin's Bay across Jamestown Saddle, I did not follow, but from what I saw, looking at it from both sides, I feel satisfied that it also will be found easy of construction. But, whether or not, it is the only practicable communication with Main Road, as constructing a road along either side of Lake McKerrow means a couple of miles of rock-work, and that is prohibitive on account of its great cost.

GENERAL.

Land for Settlement.—There is a large quantity of very good land in the Cascade Valley, and patches of from five hundred to a thousand acres of fair agricultural lands in the Hope and Gorge River Valleys. The Big Bay Flat is worthless—sour and swampy—but both along the foot of the McKenzie Range and Skipper's Range, more especially along the foot of the latter, the land is very good. In the Pyke Valley there is scarcely any land suitable for settlement on the western side of river, while on the east there is a narrow belt of good land extending from north boundary, Otago, to near Lake Alabaster.

Land for Pasturage.—Every one of the river valleys, but particularly the Cascade River and the Pyke River Valleys, are good pasturage ground for cattle. Not a beast ever having been on these, the bush is full of karaka and broad-leaf. Of the open-top ranges Olivine Range, Hope Range, and Barrier Range are absolutely worthless for grazing purposes. Red-hill Range and Skipper's Range are partially grassed, while Gorge River Plateau is very good, grassed from end to end.

Geological Formations.—The most remarkable feature about the southern district appears to me to be that of Olivine Range, to the east of Cascade River: it is a red-and-violet-looking mass, and, from about 1,000ft. above the river, devoid of almost every vestige of vegetation. It is the same formation the Cascade Plateau and a great part of the Gorge and Jerry Valleys country consist of. The "Red-hill" itself is olivine, while the spurs running therefrom are a sort of greyish slate with grey granite belts here and there through them. An extraordinary red granite belt is crossing the Jerry River a little above the proposed road crossing. The olivine formation is traceable as far as the Humboldt Mountains; the last indications of it I saw on the low saddle the Barrier and Olivine branches and Hidden Falls Creek rise from: the extent of it there does not exceed a couple of acres, but it is very marked and distinct. A great part of the Hope Range is auriferous, and along the whole length of Gorge River the "colour" is found on washing a dish of stuff. I believe that when once made accessible the Gorge country will prove a great field for hydraulic sluicing—the getting the necessary water supply there will not be difficult. Almost all along the coast-line from Barn Bay to Martin's Bay the beaches and coast terraces carry gold. Some of these beaches proved very rich in the early days of the coast, and are still being worked. Coarse gold in considerable quantity was found at the mouth of the Gorge River—a party of two men, both known to me, lifted forty-three ounces in less than a week from a patch 10ft. square. The colour of gold is also got in several of the tributaries at the headwaters of the Pyke River. There are a number of other interesting geological features about that district, as, for instance, the various outcrops of limestone, &c., all of which are marked on map at this office, and about which a geologist might write pages of foolscap; but, extensive acquaintance with this branch of science not being an acquisition I can boast of, I shall desist philosophizing upon the way how all or either of the formations originally got there, where they came from, and why they are not somewhere else.

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