

island, forming a new deposit on the top of the older auriferous drifts on the low-lying lands, while the mountains became denuded and supplied this material.

In the basin of Ross Flat no regular bottom has yet been reached, such as schist or slate; nothing but what is termed in Ross old-man reef, and in other places Brighton bottom. It would be interesting to ascertain the dip of the schist or slate bottom when reached, and its direction. There is no reason that rich auriferous layers of drift should not be found below this on the slate, schist, or sandstone rocks.

#### OTAGO DISTRICT.

##### *Maruwhenua.*

Since my last visit to this district there has been a considerable amount of work done on the north-western side of the Maruwhenua River, considering the small amount of water brought on to work this field. The workings are principally on the side of the terraces falling into the gullies which lead down to the land the Government purchased from Mr. Allen some years ago as an outlet for tailings, and also on the other side of the gullies falling into the flat, on which the West Maruwhenua School is situated, where a sludge-channel is constructed on land purchased by the Government some years ago from Robert Campbell and Sons. On this portion of the field there are in all about forty-seven miners working when water is available, which is only in wet weather. Mr. H. Howe has one water-race from the Maruwhenua River, which has a permanent supply of about four sluice-heads of water; and the Pioneer Company has a water-race from the same source, which brings in a permanent supply of about four sluice-heads. Frater Brothers have a small water-race from the small creeks in the vicinity of Ben Lomond, and Mr. Howe and Mr. G. Bailey have each a small race from Sheepwash Creek and Bushy Creek respectively; but in the three last-mentioned water-races there is no water in dry seasons. Mr. T. Smith has also a catch-water-race, but during the last season he had little or no water.

Some of the ground is shallow, being only from 6ft. to 12ft. in depth, but some of the ground is 40ft., and the most of the gold lies on the bottom; so that, with the small amount of available water, the deep ground can in very few instances be made to pay for working. The ground also is hard, requiring a great deal of breaking up; this, together with the limited supply of water, tends to prove that the ground must be very good to enable the miners to make a livelihood. The old system of working with water falling over the face, or a short piece of canvas hose, is rigidly adhered to in many instances. If iron-piping were used, even with the small supply of water, and the whole of the fall from the races utilised, twice the amount of work could be done; but the field will never be able to sustain a large population, as there are very few available streams in the neighbourhood from which a permanent supply could be obtained. There is no doubt that a much larger supply could be obtained from the Maruwhenua River during about six months of the year; and also from the Otakaike a supply of about six or seven heads might be obtained during the summer months, and from twelve to fourteen heads during about six months of the year; but at the present time Robert Campbell and Sons have constructed a race from the river which conveys the most of the water in summer, and is used for wool-washing and irrigation. Any water-race constructed from this stream to command the ground on the Maruwhenua would have to be lifted from about thirteen to fourteen miles up the Otakaike River, from the railway crossing, and at that point the stream is small in dry weather; the nature of the country also through which a water-race would have to be constructed, being rocky sidelings and across old slips, would make it very costly, as in many places the water would have to be conveyed in either iron- or steel-piping, or in flumes.

On the Livingstone side of the river there are about twenty-seven miners working by means of two water-races, both constructed from the Maruwhenua River. One of these belongs to the Musquito Company, which is said to have a carrying capacity of from six to eight sluice-heads; but at the time of my visit the quantity of water in this race was only about two and a half heads. This water-race is leased to Botting and party, who are said to pay £150 per annum for its use, and also keep it in repair. The other water-race belongs to R. Cook, having a carrying capacity of about three heads. As far as could be ascertained the price paid for water on this field is equal to £2 per sluice-head a week for eight hours per day. The water is generally conserved in dams at night, so that the available water for working the ground during the day is equal to three times the carrying capacity of the water-races.

In reference to the quantity of gold obtained from this field, the information supplied me was so variable that nothing reliable as regards the yield of gold can be given. Mr. H. Howe states that in good seasons, when plenty of water is available, he can get between 200oz. and 300oz. of gold; but the last season being very dry he did not get anything like that quantity. Taking the amount of gold-duty paid to the Waitaki County Council before the gold-duty was abolished, the quantity of gold obtained from the field per annum would be about 1,200oz., or, say, the value in round numbers would be about £4,800 per annum. Taking the number of miners on the field (seventy-four), the average earnings would be about £64 17s. 3d. per annum, or £1 4s. 11d. per week. The miners have on this field, however, greater advantages than on any other goldfield in the colony. There is a large mining reserve where they can run cattle and take up occupation-licenses for cultivation when they cannot work in their claims, and by this means some of them are enabled to make a good livelihood. There is very little of the land on this field that is not suitable for cultivation.

With regard to the length of time this field will maintain the present population, there are great differences of opinion amongst the miners. Some assert the ground will last for twenty years, while others place the life of the field at about half that period; but the miners agree that, unless there is a much larger supply of water to sluice away the wash-drift in greater quantities, the ground will soon be getting too poor to work on the present system. Judging by the supply of water in the Maruwhenua River below the place where all the miners' tail-races join the river, there is not the slightest chance of getting more water from this source, unless during wet weather. The water-races already constructed do not appear to be very profit-