

stream. A considerable amount of mining has been carried on in these deposits, but gradually the payable parts are becoming worked out, and the miners, as they work out the claims held by them, are at a loss to find fresh ground that will pay, and thus their number on Wilson River is gradually diminishing. The bed of Wilson River, it is admitted by the miners, is rich in gold, but, owing to the prevalence of floods, the working of it is very costly, and now few care to make the attempt. The gravels of the river are payable to work for gold only below the Golden Site Claim, and it is clear that the gold in that part has its immediate source from the Silurian rocks that form the gorge. Half a mile below the Golden Site Claim the tops of the plateau-like hills on each side of the valley show the presence of well-washed gravels containing gold, the destruction of which over the intervening space must have yielded gold to the gravels of the river; also the grits and conglomerates at the base of the coal-bearing series have proved, probably, a factor in the enrichment of the gravels along the lower part of the river valley. The conditions are not favourable for the development of hydraulic sluicing, there being neither material to operate upon on a large scale nor ready facilities in the way of water-supply for doing so.

Macnamara's Creek rises in the *pakihi* tableland lying between the lower valley of the Grey and the most westerly branch of the Wilson River. Below the tram-line and the road from Otago's Retreat to the Wilson River it has been at places worked for gold, but at the present time no one is at work within the watershed. In the upper part of Sealers' Creek No. 1 a relatively considerable amount of alluvial mining has been carried on, but the auriferous gravels are now poor or exhausted. The gold here, as in Macnamara's Creek, evidently has been derived from at least two sources—viz., the auriferous slates of Silurian age and the high-level glacier-drifts that have overspread this part of the country up to heights of 900ft. above sea-level.

II.—PLEISTOCENE OR NEWER PLOIOCENE.

(a.) *Glacier Drifts usually reassorted by the Action of the Sea.*—These rocks are spread over the area between the Wilson River to the east and the Grey Valley and eastern shore of Preservation Inlet to the north-west, and from a mile north-west of the Tram Line from Cromarty to Wilson River extend, in patches more or less connected, to the sea between the mouth of Sailors' Creek and the narrows between Coal Island and the mainland. On Coal Island they form fully three-quarters of the area of the surface-rock, and are also largely developed at Gulches Head Peninsula, and to a lesser extent between Te Whara Beach, the Neck, and South Port. Over the long, gentle coast-ward slope from Treble Mountain they are in part developed to heights corresponding to those at which they are found on the eastern side of the inlet, while inland of Landing Bay, near Cape Providence, their presence has been reported, and it is probable that they attain to somewhat similar heights to the north of Chalky Inlet to those reached between Cromarty and Wilson River. The only patch of gravel to the east of Wilson River, that occurring at a high level may or should be considered under this head, lies opposite Dunedin Flat and between the Wilson River and the upper part of the Coal Burn Gorge. No workings have been carried on in these beds.

On the opposite side of the Wilson River Valley, at a height of 800ft. above the sea, well-rolled gravel forms the surface of Dunedin Flat, and in these several holes and paddocks have been put down. Gold was obtained, but the results do not appear to have been sufficient as the ground has not since been worked. These gravels give evidence of the action of the sea, and this is the highest altitude to which, subsequent to the maximum development of the glaciers flowing west and south, the action of the sea has been distinctly traced. On the height of land between the gorge of the Wilson River at the Golden Site Claim and the shores of Preservation Inlet at Cromarty, glacier drifts reach a height of 950ft., but on the northern face of this ridge rearranged glacier-drifts do not appear higher than 755ft. to 800ft., but below these levels the evidences of the action of the sea are abundant to the present sea-level.

From above the bend in the course of the Grey River the northern slope of the ridge formerly indicated is deeply covered with glacier *débris*, so that the Silurian slates and sandstones are completely hidden from view except in the channels of some of the more abrupt creeks descending to the Grey. At places the glacier drifts appear as deposited, but usually the upper part has been modified, at the higher levels but slightly, but in the middle and lower parts of the slope the material acted upon has been separated into coarse bouldery-wash and beds of finer sand. Below these reassorted drifts there is usually an unascertained thickness of unmodified glacier deposits, which is readily distinguished from the former by the angular character of the material and the presence of clayey material giving this lower deposit the appearance of *till*. At several places these beds have been prospected, and at one place an attempt has been made to work them; but after a time the work was abandoned on account of the low returns and the inability of the miners to reach the bottom of the deposit, it being thought that could the bed-rock be reached richer deposits would be found. This might have been so where the upper reassorted drifts rested on the bed-rock; but, as might have been foreseen, in trying to bottom the raw glacier-drifts, scarcely better prospects could be expected.

Over the greater part of the sloping table-land around the source of Sealers' Creek No. 1 glacier-drifts are or have been present, and by the cutting-down of the upper valley of the stream through the glacier-drifts, and deeply into the underlying Silurian rock, a mixed gravel has resulted, which for a time proved payable to work for gold. The richer parts of this have now been exhausted, and at the present time there is very little alluvial mining being done at Sealers'. Gold-bearing quartz reefs crop out in the bed of the creek at Langley's claim, and these are being prospected to the neglect of alluvial mining.

Between the landing at Otago's Retreat and the Puysegur Point Lighthouse there appears on the flat-topped spurs on each side of the road a very coarse but well-rounded gravel, and a small creek cutting through this has its bed choked with granite boulders of large size. This is therefore