

*Moa Flat, Miller's Flat, and Anderson's Flat.*—These are different parts of a rather extensive area of flat land which have resulted from the infilling of an old lake-basin, the southern rim of which, and its bed, has been deeply excavated to form the present channel of the river. The flat is almost level, and there are no series of descending terraces to the level of the river, but between the high banks it looks as though the river had at once selected its course and rapidly cut this down to the level at which it now flows. Toward the northern end and on the west side of the river there are some high terraces resting against the southern slopes of the Mount Benger Range, which indicate that the lake-basin has been filled to the level of their upper surface. Whether the entire area of the old lake-basin was at any time filled with gravels to this level seems doubtful. The nature of the lowest deposits in the Moa Flat lake-basin could not be definitely determined, but beds of lignite are exposed in the bed of the river opposite Ettrick, and along the foot of the hills on the opposite eastern bank of the river there are many white quartz cement boulders, the bed-stone of which has been formed in the quartz drifts of older date. A low saddle leads from Moa Flat by way of Moa Flat Station into the Pomahaka Valley, and it is evident that there has been a connection between this part of the Molyneux Valley and the low country west of the Tapanui Mountains, over which quartz drifts and lignites are spread as far as the Mataura River and the Southland Plains.

*Coal Creek, Five Miles above Roxburgh.*—Between Roxburgh and the entrance to the gorge of the Molyneux, a little above the junction of Coal Creek, the valley expands to a width of two miles, this wider portion having a length of five miles. At and near the mouth of Coal Creek quartz grits and sands are seen on the banks of the Molyneux and in the banks of the creek at intervals, to where they are overlain by a very thick bed of lignite, or brown coal. The grit-beds apparently strike across the river to the southern bank, but are not exposed to view, on account of the heavy terraces of river-shingle on that side. It is noticeable, however, that to the point where the grits should be on the southern side the banks of the river have been worked for gold, but for some distance above this point there is no working of any consequence. This may be interpreted as meaning that the quartz drifts that have been washed away were gold-bearing to such a degree that whatever gold they yielded to the ordinary gravels of the river-bank made the latter worth working. Coal Creek brings down from the southern spur of the Old Man Range very coarse *débris*, often large blocks of schist. These, forming terraces, to a large extent obscure the area over which would otherwise be exposed the quartz drifts underlying the coal. Their possible area at the surface is also lessened by the brown coal and other beds overlying the grits.

*Noisy Creek.*—From Coal Creek the road rises along hilly country on the right bank of the river till at Noisy Creek the difference in elevation is some 1,200ft. Grits and quartz sands show at many places along this part of the valley, and at places on the descent into Gorge Creek. At the crossing of Gorge Creek there is a small patch of sands and indications of lignite, and on the roadside between Gorge Creek and Coal Creek (Bald Hill Flat) quartz grit occurs at several places. These drifts have been prospected, but yield nothing more than the colour of gold.

*Bald Hill Flat.*—A number of sluicing-claims are being worked on Bald Hill Flat, and along the bed of Coal Creek to the bridge on the main road. The wash is modern schistose *débris* carried down from the slopes of the Obelisk or Old Man Range, and therefore requires no special description. This wash, varying from 10ft. to 20ft. thick, rests on a bottom of white clay and quartz grit, or yellowish quartz sands, that are chiefly seen in the southern end and towards the west side of the basin. The surface of the schist rock on the east side slopes at a moderate angle to the west underneath these sands, &c., but on the west side the younger beds terminate abruptly against a wall of schist rock. Where the junction is laid bare there are no very distinct indications of faulting; but more to the south, in the same line, the spur from the high range separating Coal Creek from Gorge Creek, there is strong evidence of the existence of a fault. In the middle of the northern broader part of Bald Hill Flat (sometimes called Spear-grass Flat) are two isolated hills rising from 100ft. to 150ft. above the general level. These are capped by coarse river-gravels which on the western or lower hill have been to a considerable extent worked for gold, without, however, yielding sufficiently, as at the time the ground was visited work was suspended. These gravels are distinct from and older than the slaty schistose gravels of the southern end of the flat, and evidently are due to the action of the Molyneux at a time ere it had cut the deep gorge which it now follows from the Manuherikia Junction to and beyond the junction of Gorge Creek. These coarse river-gravels must at one time have been present over the whole area of Bald Hill Flat.

On the southern point of the range between Bald Hill Flat and the Molyneux there is a small area of well-washed sandstone gravels. These are decomposed so far as to assume the usual light-brown colour of what is known in the Upper Manuherikia and Naseby districts as Maori bottom. They are easily recognised as a fragment of the extensive sandstone gravels that fill or are found in all the valleys and old lake-basins to the north and north-east of this point. At the place here referred to the gravels are at an elevation of about 1,700ft. above sea-level. A small patch of white cement-stones and traces of quartz grit occur at the same place.

*Butcher's Gully.*—Remnants of a once widespread formation of quartz drift are found from the northern end of Bald Hill Flat, across and along Butcher's Gully, to beyond the junction of the road from Conroy's Gully with the main road leading to Alexandra. Generally the grits have been removed from the higher grounds, and there remain only the hard blocks of grey cement to attest the former presence of the sands; but in the creek-bed, a little south of the road junction spoken of, holes have been sunk to a considerable depth in white quartz grit, which showed all the evidences of being the original deposit, and not a rewash of this into the gully.

*Conroy's Gully.*—This is reputed to have been, in gold, one of the richest gullies in the whole of Otago. Conroy's Creek takes its rise from the Old Man Range, near the Obelisk—a solitary rock 80ft. in height and less in diameter, having the appearance of a column or pillar, and to be seen