

débris from these old slips has to be removed at the same time. The depth of this character of wash-drift, which is of a much older formation than the gravel-drifts further out on the flat, has never yet been ascertained, neither here nor at any place where it has been worked in the district." The "shaft sunk near the boundary of the Mountain Race Company's ground and the Sugar-pot Claim to a depth of 240ft.," showing "no indication of being near the bottom," yielded "about the same" prospect "of gold all through; but the question of being able to work to this depth is a problem not yet solved, but there is no doubt that it will yet be worked by several hydraulic elevators, one below the other, to a considerable depth. The wash in the shaft does not appear to be rich enough to drive out, but will give good returns for working by hydraulic elevators and sluicing. How far this run of ground may traverse the foot of the range has not been ascertained, and, indeed, it is of very little use for any one to go prospecting for sluicing-ground in this locality, as all the available water that can be brought on the ground is taken up and utilised."* The wash-drifts constituting the deep ground at Tinker's consists of partly-rounded slaty schistose breccias, containing sandstones and cement boulders from the older quartz drifts. Towards the line of contact with the older rocks to the north-west beds of quartz gravel or grit alternate with the more slaty material, and in Ewing and McConochie's claim the lowest bed seen is a massive development of quartz, sand, and grit. Mr. Gordon, in the above extracts which I have made from his reports of 1890-91, describes how the beds dip so as to pass at a varying but always high angle under the schist rocks forming the lower spurs of the Dunstan Mountains. In the eastern end of Ewing and McConochie's claim the beds are nearly vertical, while the sandstone gravels of the "Maori bottom," although younger, seem to be pushed underneath the more auriferous beds. Looking, however, at the section shown in the south-west end of the claim, it is seen that the beds throughout are exceedingly disturbed, and that, except in a general way, little is to be learned from the mere dip and apparent relative position of the different beds. In the Blue Duck Claim the auriferous beds are nearly vertical or inverted, the lower beds resting on those higher in the sequence and passing under the schist rock with a high dip to the north-west. There is less quartz drift showing in this than in Ewing and McConochie's claim, next to the south-west, but the reason of this appears to be that the works have not so closely approached the fault-line as they do in the other. There is again in this claim the appearance of the "Maori bottom," the beds forming it being unconformable to the auriferous bands. In the Sugar-pot Claim the wash is sometimes very coarse, and all the beds are standing nearly vertical. Making here careful inquiries as to the occurrence of the white cement stones derived from the older grits, several examples embedded in the solid wash 30ft. or 40ft. from the surface of the ground were shown to me, also specimens said to come from the lower part of the 240ft. prospecting-shaft; and it was also stated that a great number of "Chinamen," or "white Maoris," as these boulders are called by the miners, were met in sinking the shaft. As to the dip of the strata met with at this the greatest depth reached in this neighbourhood, no definite information on this point could be obtained, but the probabilities are that the beds return to the vertical and then dip to the east under the higher beds of the same series and the "Maori bottom" where this latter is present.

Drybread, or Matakani.—This locality shows a continuation to the north-east of the auriferous deep ground of Tinker's. The strata consist of thick banks of clay with beds of slaty schistose shingle and quartz grit dipping to the north-west, but at a lower angle than the dip of the same beds at Tinker's. The auriferous bands may not be as rich as they are at Tinker's, but there is certainly more material favourably placed for sluicing than at that place. The formation also shows a considerably greater thickness of beds, and there seem to be several bands of gold-bearing wash. As some of these lie at a greater distance from the fault-line and schist rock than do the auriferous bands at Tinker's, there will thus be avoided the danger and cost that threaten future works in the latter locality. The downs east of Drybread are formed of sandstone gravels, while the lower terraces and flats extending to the main road along the Manuherikia Valley show at most places a preponderance of schistose shingle.

Lauder Creek.—This is the principal stream coming from the Dunstan Mountains between Drybread and Cambrian's. Though there is no place between Drybread and Cambrian's where extensive mining has been carried on in the line of deep country along the foot of the Dunstan Mountains, it is the general opinion that the deep ground is continuous; but whether it be that the beds of Tinker's and Drybread are continued to the north-east, or those of Vinegar Hill and Cambrian's to the south-west, remains to be seen. The auriferous beds constituting the deep ground in the areas indicated are not of the same age. Why neither series appears along the valley of the Lauder Creek appears to be owing to the fact that the terrace-gravels of younger date reach back to the schist rock of the lower part of the Dunstan Mountains, and are nowhere cut through by the creeks deep enough to lay bare the underlying deeply-involved drifts. As an instance of the depth to which these older gravels have been covered up by the sandstone gravels of the "Maori bottom" may be mentioned the fact that the hydraulic head of the Mountain Race Company's supply at Drybread is from the top of a spur some 400ft. above the workings, and that at this height there are gravel-beds of "Maori bottom" resting on the schist rock in a horizontal position. The extension of these beds to the east had to be denuded away in order to expose the slaty and quartzose auriferous drifts underlying. These and younger beds occupy a lower level in Lauder Creek, and thus hide the older beds from view.

Cambrian's.—The first workings at Cambrian's were in the coarse shingle of the creek-bed, and on its banks, but prospecting soon led to the discovery of gold in the white quartz gravel similar to that of Kildare Hill at St. Bathans. Together, these sources of gold-supply have maintained Cambrian's as a mining township from the earlier days of the rush to the present time. In 1892, Mr. Gordon, speaking of Cambrian's, reported as follows: "There has been a considerable quantity

* Reports on the Mining Industry of New Zealand, 1891, p. 70.