

was 120ft. deep, a colour of gold being got. The character of the cements in this shaft is very different from that of those in other parts of the field, being very brown, and the schists much decomposed."

Glenore.—There is no visible exposure of breccia conglomerate at this place, but it was reported to me that breccias similar to those of Blue Spur underlaid the superficial gold-bearing wash of the creek-bed, as far east as this has been worked. It appears also that the breccias are met with to the south-west, on Adams's Flat, as shown by the above quotation from Mr. Cox's report. Slaty breccias of schistose material occur at various places over the area of the Kaitangata Coalfield.

Speaking of the breccia conglomerates at this place, Mr. Cox says, "At Adams's Flat, near Mount Stuart, the cements occur again, but have only been worked as the bottom for the alluvial diggings of this district. A few shallow pits have, however, been sunk at different places, and all of these, when tested, showed a colour of gold, but never very much. Since none of these shafts, however, have bottomed, there is practically nothing known of the cement there. . . . From Adams's Flat the best idea can be obtained of the flow of the glacier which deposited these beds, for from here a distinct depression in the country can be seen in the direction of Waitahuna and Weatherstone's. Moreover, the character of the beds is so identical along this line as to leave no doubt in my mind that the rocks constituting the cements have travelled in this direction—namely, from north-west to south-east, and also that the means of transport has been glacier-ice."*

Tuapeka River.—A patch of Blue Spur conglomerate, it is said, occurs about two miles up the Tuapeka from the bridge on the road to the Beaumont, but this was not examined, and it is possible that the workings carried on there may be in another class of deposit.

The breccia-conglomerate deposits of this part of the district have been described consecutively, disregarding for the time being another class of auriferous strata which in other parts of Otago are, as gold-bearing deposits, of as much importance as the breccia conglomerates of the Blue Spur. Reference is thus made to the auriferous quartzose gravels and grits that are widespread over the greater part of Otago, and which have yielded by natural processes to younger deposits, or at the instance of man directly, perhaps the greater portion of all the gold hitherto raised on the Otago goldfields. Such gravels occur in the district around Lawrence, and, strangely enough, in the close neighbourhood of the breccia conglomerates, but never (in this district at least), except it may be in the Waitahuna River bed at Havelock, directly associated with them. This is indeed surprising, since, collectively, they will have to be considered as belonging to the same formation, and in the general sequence will have to be considered as being the next following beds to the breccia conglomerates. In other parts of the Otago district this association is seen, and actual interlamination of the two kinds of deposit takes place, as for instance within the Kaitangata Coalfield. Nevertheless, within the Tuapeka district they are ever apart, and hold a vertical relationship that is sufficiently puzzling. Their lower beds are usually formed of quartz detritus, more or less, sometimes completely, rounded, over which are more quartz drift or beds of clay and dark shales with seams of lignite or brown coal, usually again followed by quartzose sands of finer grain, sometimes by an upper conglomerate mainly composed of quartz pebbles.

Beaumont Hill.—On the road from Lawrence to the crossing of the Molyneux River at the Beaumont, after crossing from the watershed of the Tuapeka River, about a mile from the saddle, there is a development of quartz gravels, forming a hill of some height, and they also fill the valley to the eastward. The underlying slate rocks are so placed that the lowest or any horizon of the gravels forming the hill might easily be prospected. A pit for road-metal has been made in the side of the hill, and from the material thus taken it is said gold, but not in paying quantity, was obtained. Elsewhere in these beds no signs of prospecting can be seen; and where the underlying rock appears, near the road, exposing the lower strata of grit, the beds have not been prospected. This area of quartz grits extends south in the direction of the lower valley of the Tuapeka River, between which and the Molyneux there appears to be a considerable development of the same gravels, generally occurring as isolated patches on the higher lands.

Monro's Farm.—There is an area of quartz drift associated with beds of lignite present between the lower part of Monro's Gully and the saddle by which the main road leads to Evans's Flat. The grits, &c., show in the road-side near the farmhouse, but nothing could be learned respecting the prospecting of the beds. They appear to extend some distance along the south-east of Monro's Gully.

Lawrence Racecourse.—The depression west of the Town of Lawrence, where is a racecourse, and once was a coal-mine, brick-field, &c., has quartzose gravels underlying the lignite seam, which may or may not prove auriferous, but which should be tried, as all such deposits are worth prospecting, more especially those that are resting on gold-producing rocks like the schists of this part and Central Otago. Further removed from the source of the gold there are great bodies of quartz drift and sand which are not likely to yield, yet sometimes do contain, payable gold, and it is therefore reasonable to expect gold in the same beds when they lie near to or on the rocks yielding gold, and from which the quartz drifts have been derived.

Coghill's Hill, Waitahuna.—This is 800ft. above the level of Waitahuna Railway-station. The lower and middle parts of the hill are formed of schist. On the top there is a deposit of quartz gravel and grit about 20ft. thick. The lower half of this is a free-working deposit that may easily be pulled down with the pick; the upper part is cemented into a hard rock that would have to be removed by blasting. These sands are gold-bearing. They are said to have been rich enough to pay highly if water could have been got to sluice them *in situ*, but, this being impossible, the material had to be carted to the Waitahuna River, and the cost of carting rendered the working of the deposit unprofitable. No work was being done when the place was visited, and clearly, unless

* It seems to me that Mr. Cox has overlooked the occurrence of what at Coombe's claim may be described as coal-grit, which beds are stated to be younger than the cements: hence these deposits are not identical with, nor of the age of, the lower breccia conglomerates of supposed glacier origin, yet lie in the line indicated.