carried on, a superficial coarse gravel overlying quartz grit and beds of breccia conglomerate being operated upon. The underlying beds involved along a line of fault have their west limit along this line. The fault limiting the breccia conglomerate and quartz drift beds can be traced to the foot of the gorge above the township, and in the other direction followed to Gibbston on the Kawarau.

At the township, the shallow workings of the river-flat laid bare banks of clay, gravel, and quartz grit apparently dipping at high angles to the eastward. These beds in the hill-borders at the back of the township are a strange mixture of schistose and sandstone gravels, banks of clay, and beds of white quartz grit. The workings on the flat extended back to the foot of the hills as shallow surface-workings; and, in some cases, on to the hill-slope. Then it was discovered that the underlying highly-inclined conglomerates and quartz grits were auriferous, and ordinary sluicing operations were directed against these. Next, an elevating plant was erected, which has worked to lower levels than was possible with previous appliances. On the opposite side of the creek, MacKersie and party have brought in a race, and are preparing to commence operations—first, by washing away the old workings and recent gravels to the foot of the spur, and, next, the hill-slopes themselves. Ordinary ground-sluicing has effected already the removal of part of the spur on MacKersie's side of the creek; and these works have exposed breccias and heavy conglomerate beds similar to those of Blue Spur and Waitahuna. The conglomerates at this place particularly resemble the slickensided and polished conglomerate deposit described as showing on the west side of Waitahuna Gully.

The junction of these beds with the schist on the west side of the valley may or may not be along a line of fault; but the lower beds of the younger series are here vertical, indicating such movements as might very well imply faulting. In Nevis Burn, along the contact line between the younger beds and the schist, to the westward, the evidence of faulting is more apparent; and in following the line across Dootan's Creek and the saddle-divide between this watershed and the Kawarau at Gibbston, it is clear that the beds are preserved only by being deeply involved between the schist rocks to the east and west, and that on the western side they are suddenly terminated by a line of fault. This line of fault probably runs along the whole of the Nevis Valley from the upper end of the lower gorge to the saddle leading into the Nokomai Creek and the Mataura watershed. North of Stewart's Creek the general dip of the quartz grits is to the west. Further up the valley the coal appears on the east bank of the river, while the quartz grits and breccia conglomerates which also belong to the lower part of the same series dip to the eastward.

Upper Nevis and Roaring Lion Creek.—On the occasion of a visit to the Upper Nevis some years ago nothing was observed that indicated the presence of the quartz grits in this part, and, in spite of descriptions of beds intended to convey the idea that these or the breccia conglomerates are present just above the second gorge, there are doubts that such is the case. The beds described probably are heavy deposits of modern creek-gravel and slope-deposit, which, whatever else is, are there present. At the junction of the two main branches of the Roaring Lion Creek, and at a considerable altitude above the bed of the Nevis, white quartz gravels are present, and extend north and south along the valley of the streams indicated. Gravels of the same type also occur as isolated patches on the higher parts of the range up to about 5,000ft. These particulars regarding the Roaring Lion deposit were furnished by Mr. James Carson, of the Lower Nevis.

Gibbston to the Saddle leading into the Watershed of Dootan's Creek.—At Gibbston there are beds of gritty sandstone and shales with a thick deposit of lignite or brown coal. In the lower grounds heavy traces of river-gravels obscure these deposits, and higher on the range schistose *débris*, as slope-deposit, also to a large extent hides the junction of these rocks with the schists to the west. The coal is worked at about 500ft. above the level of Gibbston, and at a second mine 300ft. to 400ft. higher, or near the saddle leading into the Nevis watershed. Though thus obscure at the surface, the different levels at which the coal-measures are found show that deep involvement of the beds has taken place, and that the formation as a narrow belt of younger rocks runs through the range from Gibbston to Dootan's Creek and the Lower Nevis Valley. At Gibbston there is no development of grits, gravels, or breccia conglomerates that are likely to prove gold-bearing, and the beds at this locality are of interest, chiefly as showing the manner in which the involved and faulted beds are brought in contact with the older rocks along the opposing side of the fracture.

Cardrona Saddle.—About 800ft. below the Cardrona Saddle, on the side of the steep slope to the Kawarau, there is a patch of white sand and some traces of coal. This indicates the continuation of the line of fracture across the river to Gibbston from whence it crosses the saddle into the Upper Cardrona in the direction of the coal-mine on the left side of the valley, under the higher part of the Crown Range, six miles above the Township of Cardrona.

Crown Terrace.—This lies along the east or left bank of the Arrow, at a height of from 500ft. to 800ft. above the river. The Crown Terrace constitutes an old shore of Lake Wakatipu at a time when an extension of the lake filled the valley between the northern end of the Remarkables and the Crown Range to the height above mentioned. Gold-workings are being prosecuted at the northern end of the terrace, above and below the line of Tobin's Road, which leads along the face of the Terrace to Arrowtown. The gold found in this part is probably due to the action of the Arrow River at a time when it discharged into this arm of Lake Wakatipu.

Millar's Flat.—This lies between Arrowtown and Arthur's Point, and is bounded on the north by the southern slopes of the range between the Arrow River and the Shotover, and on the south by a ridge of low hills running from the Shotover below Arthur's Point to Lake Hayes. Clearly Millar's Flat is an old channel of the Shotover, and a very legitimate field for prospecting. There are no traces of glacier-action to be found on the higher levels of the Crown Terrace, but at a lower level at the head of Millar's Flat a small moraine extends across the valley, and the outlet of the river is clearly seen to have been close under the hill-slope on the northern side. The road from Queenstown to Arrowtown has been cut through this old moraine, thus exposing to view the