

face by hydraulic sluicing, allowing the muddy water to pass into the underground tail-race, taking the tailings and stones up to the surface by elevators and tramway. In adopting this system a large paddock has to be made before there is room for a sufficient length of sluice-boxes to be placed in the bottom, and room to stack the stones; therefore it will take a long time yet before the full benefit of this system is obtained, as the large stones have now to be broken up and sent up to the surface, whereas they can be stacked in the bottom when the paddock is sufficiently large. This will likewise enable the elevators to lift more of the fine tailings, and consequently the ground can be washed more rapidly. The quantity of stuff washed in the paddock is limited to the amount of tailings and stones that the elevators and trucks on the inclined tramway can take up. According to data supplied me by the manager, the greatest quantity of stuff lifted by the elevators and trucks is about 19 cubic feet per minute. This shows that, although the buckets of the elevators have a capacity of 5 cubic feet, in the ordinary course of working they do not lift more than about 3 cubic feet each. This may occur through large quantities of stones being lifted, which takes up more space in the buckets than fine tailings, which set close together. The way I arrived at the quantity of material lifted was from the following data supplied by Mr. Wylie, the manager. He informed me that the greatest quantity of stuff yet lifted was 163 trucks, each holding 30 cubic feet, in four hours and a quarter. When the trucks are at the top of the incline they run into kick-ups, and are emptied on to an iron grating made of iron rails. The fine stuff falls into a sluice-box, and is carried away by a stream of water to Donnelly's Creek, and the stones fall into trucks, which are run out and emptied over a tip-head. Annexed is a sketch-plan of the elevators and tramway, showing the general arrangement. This mode of working has not so far been remunerative to the shareholders; and this appears to have induced them again to open out in the deep shaft, to try and find the bottom that Mr. Cassius was working on previous to the stoppage of the drainage-engine in 1872. They therefore opened out at 315ft., and constructed several tunnels in different directions into the flat, and one towards Cassius' old workings; but were not successful in finding any gold of a payable nature on this level. They constructed a pump above the tunnel, and afterwards sunk a monkey-shaft near the end of one of the tunnels furthest out in the flat, and struck good payable gold in the monkey-shaft at a depth of about 10ft. below the level of the tunnel. The wash-dirt here is about 5ft. 6in. in thickness, and from the prospects ought to pay handsomely for working. From this monkey-shaft, which is about 6ft. 6in. by 4ft., 2oz. 8dwt. of gold was obtained, which is equal to about 9dwt. per cubic yard. This ground cannot be worked, however, until another chamber and main tunnel is constructed at a deeper level; and it is questionable whether the present pumping-appliances will be able to keep down the water when the ground gets opened out. From my previous knowledge of the ground, the layer that has now been struck is entirely different from that worked by Cassius, the Morning Star, and the Excelsior Companies; and, from what I know of the levels, it is a little deeper. The wash is blue, mixed with a number of flat and angular slate stones, whereas the layer worked by the other companies was brown wash, mixed with a large quantity of soft sandstone floating reef, greatly rounded. The appearance of this layer exactly corresponds with a gold-bearing layer that was found in the Morning Star Company's shaft about 2ft. under the brown wash, and about 285ft. below the level of the surface. Taking the dip of the ground in the direction of where the gold has now been found would also correspond with this level. The present pumping-appliances are two hydraulic engines, 18in. cylinders with 9ft. stroke. These are working under a head of 314ft. of water, and are placed in a chamber in the shaft on a level with the tail-race. Each of these engines works two columns of pumps 15in. in diameter. One of them works one column 125ft., and another 71ft. The other engine works one column 207ft., and another 73ft., working seven strokes per minute with about 6-feet stroke; or, in other words, the engines are nearly working up to their full power. I would here point out the great necessity of better provision being made before blocking out the deep workings is commenced, and also before continuing any tunnel further in the direction of Cassius' old workings. The water in the old workings stands 200ft. above the tunnel from the Ross United Company's shaft, and there is no ladder-way or any way for the workmen to get away in the event of breaking into the old workings. If such an event happened at the present time the whole of the men underground would be drowned. The present shaft is divided into three compartments, one for the pumps, and two for winding; and the pumping-shaft is so full of pipes that it would simply be useless to attempt to put ladders there; another shaft or compartment is required for ladders alone. The Regulation of Mines Act ought to be strictly enforced here in compelling flank-bores to be kept well ahead of any drive going towards the old workings. This is all the more requisite, as there has been no correct survey of the old workings kept, and the company is entirely in the dark where they extend to. They do not know the exact level they were on, neither the dip nor inclination of the layers worked. Except these provisions are strictly enforced, there will be a catastrophe as great as that which occurred at Creswick Creek some years ago.

*Prince of Wales Company.*—This company's property now belongs to the Ross United Gold-mining Company, which consists of a mining-lease of sixty acres, elevating machinery, with head- and tail-race. The ground, previous to the formation of the Prince of Wales Company, was held in small claims, which paid the shareholders good wages for working. These claims were all purchased, and a company formed to work them on a more extensive