

interfered considerably with working the bed of the river. The dredge was taken further down the river, when, after the first week's dredging, 30oz. of gold was obtained, and the second week the returns gave 82oz. gold. During the past year the company made a profit of about 11½ per cent. on the capital invested.

*The Ettrick Dredge.*—This dredge is 90ft. long, and is working in the Clutha, a little above Miller's Creek dredge. A soft schist rock and "pipeclay" bottom is found at from 25ft. to 30ft. from one side of the river to the other. The schist rock stands above ordinary water-level on both sides of the river, the west side being sluiced bare for several chains back by the miners many years ago. This dredge is supposed to lift 20 cubic feet per minute, and the yield of gold is said to be about 10oz. per week. The coal consumed for the same time is about 11 tons. It will take several years to work out the length of river-bed held by this company. The sluice-boxes are 2½ft. wide and 40ft. long. At 28ft. from the top end of the box there is an opening in the bottom through which all the fine stuff falls into a similar box 12ft. long, which has a fall in the opposite direction, and empties into the centre-well of the dredge. In this last 12ft. box, cocoanut-matting is placed, and a fair proportion of the gold is said to be saved here. Perforated plates are used in the top boxes, which have 8ft. of plush at the top end, and matting from this downward. A "save-all" box is also successfully used to catch the gold in the drippings from the buckets when dredging sticky sandy stuff. When clean wash is being dredged very little gold is found in the "save-all" box.

*Dumbarton Rock Dredge.*—This dredge was moored in mid-stream; not working. The manager stated that after a long struggle he found he could not cope with the great body of loose tailings constantly coming down the river. He said that, after making a low depression in the bed of the river, the inflow of tailings was equal to her full dredging-powers—viz., 30 tons per hour. Some months ago the dredging operations reached the white quartz wash bottom at 28ft., which gave good returns; but in a very short time the dredge failed to keep on the bottom. The dredge is 75ft. long, and required a ton of coal every twenty-four hours, during which time four men were employed. The sluicing-water was lifted by a wheel with buckets. The engine is a compound one of 10-horse power nominal.

*The Edina Dredge Company.*—This dredge is a short distance above the Dumbarton Rock, where there is a bar crossing the river, and on the inside of the bar, on the western side, the dredge has been getting fairly large returns during the time it has been at work. The operations of this dredge, and the gold that it was the means of obtaining, leads to prove the existence of a deep channel which crosses the river at this point from the eastern to the western side, and shows apparently that the river must at one time have flowed along the foot of the range on the western side, going up to some extent the valley at the Bengerburn, and again joining the present channel a little below that stream. This dredge is the most powerful on the river; it is 105ft. long, with a 60ft. ladder capable of dredging to a depth of 30ft. The average depth dredged is about 30ft. The bottom in most places is pipeclay. At the time of my visit the bottom on the west side of the stream was hard rock. When the work is going on steadily the quantity dredged is estimated at 1,500 tons in the twenty-four hours. There are eight men employed besides the manager—viz., four men and the manager on the day-shift, and two on each of the other shifts. The coal consumed is about 4 tons in the twenty-four hours. There are two engines, one drives the centrifugal pump. The sluice-boxes are 40ft. long by 2½ft. wide. Iron ripples are used, and under the ripples is placed calico on the wood, and cocoanut-matting on top. A side box is placed parallel with the first, and at a lower level, in order to receive the fine sand which flows from off the matting in the top box. The lower box is paved with fine bagging, over which is matting covered with wire netting. This plan saves some fine gold. The dredge-buckets are said to hold 3 cubic feet, and the pump is said to throw from two to three sluice-heads of water.

*Manuherikia Dredge.*—This dredge is situated a little below the Alexandra Bridge; it is a current-wheel dredge 60ft. long and 22ft. beam. The ladder is 48ft. 6in. in length, and will dredge to a depth of 31ft., but the operations at present are only carried on to a depth of 21ft. The bottom at present is a soft schist rock, off which the buckets can in most places scrape up a little. The estimated quantity of stuff lifted is about 30 tons per hour, and the labour employed is one man each shift. The material is put through a revolving screen 9ft. long and 3½ft. in diameter. The fine material from the screen then passes over tables, 6ft. wide, covered with cocoanut-matting, and from this into a box 14ft. long by 3ft. wide, covered with matting and wire netting from end to end. A "save-all" box is fixed under the buckets, immediately under the tumbler as in other dredges. The sluicing-water is lifted in small buckets attached to the rim of the current-wheels. There are seventeen buckets, 15in. by 12in. by 8in. on each wheel—thirty-four buckets. In this part of the river the stream is very rapid from side to side, which enables the dredges to do all that a steam-dredge could do, and at much less cost per week. The sample of gold obtained is coarser than in other places a short distance higher up the stream.

*Eureka Dredge, Alexandra* (C. Leigon and party), is situated a short distance above the Alexandra Bridge and close to Mr. Noble's orchard. The dredge is 75ft. long, made of two pontoons, each 7ft. wide, and 4ft. well. The length of ladder is 45ft., and the buckets hold 1½ cubic feet each. The dredge is supposed to lift 50 tons per hour, and the consumption of coal is about a ton in the twenty-four hours. It is a similar dredge to the "Ponui" or No. 2 Dunedin dredge. The depth dredged is from 15ft. to 25ft., but capable of dredging 28ft. The bottom of the river is sandy clay in places, and coal in others. The sluicing-water is lifted by buckets fixed to a wheel on the main shaft. The size of bucket is 14in. by 12in. by 8in. The wash is passed through a revolving screen 6ft. long and 3ft. 3in. in diameter. The first box under the cylinder stands at a right angle with it, and is 6ft. long by 3ft. wide; there is a drop of 6in. into the next box, which is 8ft. long by 3ft. wide; this again has a 3in. drop into another box 8ft. long by 3ft. wide. This last box carries perforated plates and matting covered with wire netting. The floor of all the boxes have cocoanut-matting. The "save-all" box is ingeniously slung on chains in order to shift it fore-and-aft to suit the angle of the ladder. This box saves a fair proportion of the gold obtained when