

make the venture successful. In some instances men were placed in charge of these operations who had never been employed on the goldfields previously, their only recommendation being that they were either good mechanics, capable of repairing any portion of the dredging machinery, or men who had been accustomed to have charge of dredging operations in deepening harbours. The result has been that as far as the lifting capacities of these dredges were concerned it may be said they were fairly successful; but the gold-saving appliance—by men not acquainted with it—was of secondary importance, and consequently many failures have taken place; yet the time will come when many of the ocean-beaches, and other places where dredging operations have proved failures, will be again taken up and made remunerative for working.

#### WEST COAST.

##### *Greymouth.*

*Taylor's Dredging Company.*—This is a company that was formed about twelve months ago to purchase the claim and dredging-plant belonging to Mr. Joseph Taylor, who has been working the claim successfully for these last three years. When Mr. Taylor first commenced working the ground he lifted the material with a Priestman grab, which emptied the material into a hopper, and from there the wash-drift was partially sluiced in boxes, when the stone and coarse shingle was separated from the sand, the latter material being washed on tables. After working by this method for some time, a cataract-pump, similar to the one used on the Saltwater dredge—which was highly spoken of as being the class of dredging machinery employed in deepening New York harbour—was obtained. However, it proved an entire failure; it would not lift stones above 3in. in diameter, and had to be abandoned as a dredging-machine capable of dealing with the class of material found on the sea-beaches. However, it is now fixed as a stationary pump for draining the paddock and lifting water for washing purposes, which it is admirably adapted for. Since the formation of the present company a set of stationary elevators have been fixed, worked by a steam-engine; but the supply of water for washing purposes was not sufficient, unless in wet weather, to keep the stationary dredge at work, and consequently this appliance is now abandoned for a time, and the Priestman grab again employed, but under different conditions than formerly.

The width of the lead or run of gold that is being worked is about 25ft. The steam-engine and grab is fixed on a trolley with wheels, and placed on rails. The jib of the derrick, to which the grab is attached, has a radius of about 30ft. The upper material overlying the auriferous black-sand layer is about 23ft. deep; there may be a few colours of gold here and there in it, but nothing to justify any one washing it for the value of the gold it contains; therefore, this material is stripped off with the grab and deposited in the worked-out paddock. A large wooden box-drain is carried along from the pump-well to the face of the ground to be stripped, and as each paddock is taken out another box is added on, so that the cataract-pump always keeps the ground drained during the time it is being stripped, and wash-drift lifted entirely dry. When the stripping is completed, the wash-drift, which is about 2ft. in thickness, is then lifted with the grab and deposited on a level place made for it on the bank, and afterwards lifted and washed on tables in the ordinary manner.

With regard to the quantity of material lifted, Mr. Taylor states that a paddock 45ft. long, 25ft. wide, and 27ft. deep, is taken out every week, and that eight men are employed. This is equal to 15yd. by  $9 \times 8\frac{1}{2} = 1,125$  cubic yards of material lifted every week. Out of this quantity there would be about  $8\frac{1}{2}$  cubic yards of auriferous drift that is washed on the tables—that is, supposing the auriferous layer is 2ft. in thickness. The quantity of gold obtained varies considerably. Taking the total quantity of material shifted, including stripping and wash-drift, the value of the ground, Mr. Taylor states, ranges from about 1s. to 2s. per cubic yard, but there are some places where the value comes even below 1s. per cubic yard. Taking the average, one month with another, at 1s. 3d. per cubic yard, it would give an average return of £70 6s. per week; or, say the wages and other expenses are about £40 per week, it would leave about £30 per week profit on the workings. If this can be depended on, the venture ought to be a payable one, as this means a profit of £1,500 per annum, which is equal to 10 per cent. on a capital of £15,000. Taking the value of the actual wash-drift treated on the tables as £70 6s., it means that it gives an average yield of about 4dw. 2½gr. of gold per cubic yard. Mr. Taylor states that in some instances the actual material washed has yielded from 1oz. to 2oz. of gold per cubic yard. The nominal capital of this company is £20,000, but only £7,000 is actually paid up.

*Parker's Dredge.*—This dredge is constructed on a somewhat different principle from any other at work in the colony in regard to the separation of the stones and shingle from the fine sand, and although the mechanical appliances are not perfected to any great extent, the idea is one which if properly carried into effect will solve the question of separation. The hull, on which the dredging machinery is erected, is considerably larger than most of the other pontoons used for this purpose; its length is 65ft., with 30ft. of beam, and a depth of 9ft. Most of the other pontoons are only about 18ft. beam, and the result is that the slightest thing makes them oscillate, and this action is injurious to the gold-saving tables, as these should be as steady as possible.

The dredge is what is known as a centre-bucket dredge, the capacity of the buckets being  $3\frac{1}{2}$  cubic feet each, but in ordinary dredging they lift on an average 2 cubic feet, and as the speed of the buckets is twelve per minute, the quantity of material lifted is therefore about 53 cubic yards, or 80 tons per hour. The difficulty in washing so large a quantity of material on the limited area of tables which can be erected on the hull of a pontoon is to a great extent minimized here by the use of a travelling-table, which is 7ft. 6in. long and 4ft. wide, having the discharging end 9in. higher than the receiving end. This table is made of bars or plates 6in. wide, which are perforated with ½in. holes. The plates are all hinged together, so as to form a flat surface when conveying the material, and being hinged it travels round pulley-wheels at each end, and forms a complete chain-belt. This table is driven off the vertical shaft on which the pinion is placed to drive the crown