Fortrose, on the ocean-beach, towards Waikawa. The plant has been erected, and operations commenced, and up to the present time there has been an expenditure of about £7,500 on the claim—water-race, dam, and plant. As this dredge has all modern improvements, the washing appliances being specially constructed for saving fine gold, a description of the plant taken from the *Otago Witness* of the 23rd April last may be interesting.

"The plant, generally speaking, consists of a Welman dredger, suction on the centrifugal principle being the means adopted in raising the material. The hull for the machinery is 60ft. long by 20ft. wide, with two side pontoons for the outriggers carrying the gold-saving tables. All the machinery is walled and roofed in with corrugated iron, together with subsidiary portions for the nozzleman, gold-saver, electric-lighting plant, &c. The pump, with a 13in. delivery, is 3ft. 6in. in diameter, and strongly constructed of cast iron and steel, and is driven at a speed of 260 revolutions per minute by a 25-horse power compound surface-condensing engine, made by Davey, Paxman, and Co. The cylinders are 10in. and 16in., with an 18in. piston-stroke, and the working steam-pressure is 120lb. to the square inch. All the latest improvements have been adopted to economize fuel, and the engine is fitted with automatic cut-off expansion gear, sight lubricators, &c. The engines, boilers, and pumps are substantial and highly-finished pieces of machinery, and will doubtless give good working results. The steam-winches are controlled by levers leading to the nozzleman's house, on the upper deck, and the whole manipulation of the dredging apparatus is controlled by one man with the utmost ease, the nozzle being raised, lowered, and transversed at will. The suction-pipe works on a radius of about 40ft., and is fitted with Welman's patent sleeve-nozzle and revolving cutter.

"The gold-saving appliances are very complete, the tables being 64ft. in width, a fall of 18in. to the 12ft., side boxes collect and carry all the tailings to the stern of the dredge, where they are received by a tailings-pipe, 15in. in diameter, and conveyed on to the beach, gravitating thence into the sea. The tailings-pipe is fitted with a universal socket-joint, and suspended from a post-crane, so that the tailings-pipe can swing in any direction where it may be desired to deposit the sand from the tables. The material to be treated is composed principally of sand; the bottom consists of a strong wash of varying size. The stones are caught on the hopper-plate, and disposed of on either side on the ground already dredged, the sand passing through the perforated plates into the hopper, whence it is distributed with the water on to the various tables in equal proportions, each table being separately connected to the hopper-box by an independent run. The gold, which is extremely fine, is caught on the plush mats, the latter being washed every shift into the gold-box. On the starboard-side of the dredge there is an appartment which contains an amalgamating barrel and special tables for saving the quicksilver and amalgam. The barrel gearing is driven by a Tangye engine, which also supplies motive-power for working a 4in. centrifugal pump for streaming down, and drives the dynamo that generates the electricity for lighting purposes. An arc lamp of 2,000-candle power will illuminate the tables and nozzle, while the engine-room and other apartments are lighted with sufficient incandescent lamps of 20-candle power each.

"As the suction dredger only lifts a small percentage of solid material compared with the quantity of water raised and used on the tables, it will be readily realised, where 60 or 70 tons an hour have to be treated, that an abundant water-supply is necessary, and the company have taken measures to meet this demand. A dam has been constructed in a specially suitable site, giving a storage-area of not far short of 150 acres. This reservoir is now full, and it is estimated to contain about 75,000,000 cubic feet of water. The reservoir is fed from three creeks, and also a water-race bringing in four heads of water from Cook's Creek, Waikawa, on the adjoining watershed. The reservoir is connected with the beach by an 18in. cast-iron pipe, from whence the water is conveyed to the dredging-paddock by timber fluming, the supply being regulated by an 18in. sluice-valve."

The dredging company at Lake Brunton has commenced operations. This dredge is fitted with a suction-pump similar to that in the Six-mile Company's dredge. This pump, it is said, readily passes stones 56lb. in weight through it with the greatest ease, and if the stones get caught by the arms of the runner they are broken to pieces without causing the slightest injury to the pump. This goes to show that with improved suction-pumps dredging can be successfully carried on. If the lifting of the stones can be got over it will then become a question of the cost of the wear-and-tear as compared with bucket-dredgers, and the suction-dredgers could then be used with more advantage to lift the gold of a hard, rocky, rough bottom, which cannot be done by bucket-dredgers.

The dredge employed in working Waipori Flat has also proved successful, and shows that where there is wet ground, with no fall for draining or working by hydraulic-sluicing, dredges can be used to advantage. It is also gratifying to find that a large percentage of the dredges which have been carrying on operations are likely to become profitable investments to the proprietors. Taking the returns published in the *Gazette* of the dredging companies formed in the colony which have published statements of affairs in accordance with the provisions of the Mining Companies Act, the capital subscribed amounts to £322,585, of which £72,879 10s. is paid up, and dividends to the amount of £9,870 have been paid. The dividends appear small in proportion to the expenditure, but it must be borne in mind that this branch of mining is only commencing, and very few of the companies referred to are yet carrying on active operations.

West Coast.

Mr. Joseph Taylor, who has been successfully carrying on dredging operations for the last two years on the North Beach, near Greymouth, has recently sold his property to a company in London with a capital of £20,000, who intend carrying on dredging operations on a larger scale. Mr. Taylor has been, ever since he commenced operations, making experiments with different dredging and washing appliances, and the class of plant now to be used is described in the *Mining and Finance Journal* of the 1st May last as follows:—

"At last a definite system was decided upon, the plant being adapted and designed by Mr.