

THE MINING INDUSTRY.

(From Our Special Correspondent.)

DREDGING IN OTAGO.

It is no exaggeration to say that the advent of the dredge in its present comparative state of mechanical efficiency has completely revolutionised the mining industry in Otago. During the last half-dozen years the dredging industry in the Clutha River and, indeed, on the flats and river beds everywhere throughout the goldfields of Otago, has almost exclusively monopolised the attention of the investing public. Nor can it be said that the public confidence has not been generously rewarded and the highest expectations entertained of the industry fulfilled. Of course, no form of investment or speculative enterprise can possibly be so hedged round with saving influences and favouring certainties as to entirely disassociate it from loss or the temporary deprivation of profits. The limit of its possibilities is restricted or controlled only by the degree of efficiency which may be ultimately attained in the perfection of the present dredging appliances and dredging methods generally. There is no doubt that in these respects, and particularly with regard to the gold saving appliances in use, there is much room for improvement, as under present conditions I am satisfied that fully a third of the gold taken up out of the river bed is lost. It may, however, be said that if the

consisted of three canoes roughly fashioned and lashed together and steadied by lines from the banks of the river. The spoon for lifting the dirt consisted of a bag made of raw bullock hide, laced or riveted round an iron frame, and secured at the end by a long pole. So adjusted and heavily weighted, it was dragged along the bottom, and when filled or partly filled it was hauled up and the dirt washed in a cradle rocked by hand. This was what was known as the spoon dredge era. The evolution of the dredge went on for many years, slowly and with laborious advance, until, as I have just stated, it produced in 1880 the first steam dredge on the Clutha River.

I do not think I can do better in this letter than endeavour to convey to your readers a general, but yet a tolerably clear, understanding of the present mechanical equipment of the dredges employed on the Clutha River and contiguous to it, if the financial conditions attending the industry, and such information on a subject of the highest national concern, be of some practical value.

The dredging industry on the Clutha River is now represented by a fleet of 73 dredges, which have cost for their construction and equipment something like £300,000. In addition to these there must be at least 20 other dredges in course of construction at the present moment, as a result of the stimulus imparted to the industry during the past twelve

of £2,271 17s 4d, equivalent to £66 16s 4½d a day.

In March the company declared a first dividend of £3 per share, and £250 was placed to the reserve fund. In June another dividend of £7 10s was declared, and the reserve fund was increased to £300. Early in July the third dividend was declared, making in the brief space of four months a total reimbursement of £1,800, or 45 per cent. on the capital. The interval since then has been attended with even a larger measure of success, the returns for many months past giving dividends of upwards of £10 a week per share. And there is every probability that these satisfactory results may go on repeating themselves for many years. An important feature in connection with this claim is that, given dredges of sufficient power and capacity, it has been made clear that the river in the gorges may be profitably worked and the heavy drift overcome. Another point of interest is that, although a rock and boulder bounded claim, no large stones have yet been lifted by the Moa, proving that though the sides of a river may be rough it is no reason to conclude that the bottom or bed of a river will necessarily be unworkable. Certainly there is a limit to the working of the gorges by dredges, yet it may be confidently expected that at no distant date many suitable sites in the gorges still untouched may be dredged with satisfactory results. In the average dredge about 80z of gold a week will cover working expenses.

In order to convey some idea of the

the banks, is on deck. The consumption of coal on board this dredge is about 14 bags a shift of 24 hours, though there are dredges that do not average the half of this amount. As the dirt comes up in the buckets it falls into a revolving screen about 10 feet long. The stones and coarse shingle fall from the screen down a semi-circular iron shoot and go back into the river. The fine material from the screen falls on to tables about 10 feet in width, covered with cocoanut matting, with a small mesh wire screen on top. The main run in some of the dredges is 40 feet and even 50 feet in length, and over these the finer stuff runs and the gold is saved. There are also return boxes, and 'save alls' designed to catch such gold as may escape the boxes; but despite every effort the percentage of gold lost is very large. Water for sluicing purposes is supplied by a centrifugal pump, worked by a couple of sets of belting off the main shaft. Altogether the appliances are numerous and somewhat complicated, and do not readily lend themselves to brief description. Six men are usually employed on a dredge, and the lifting capacity averages about 70 tons an hour.

Among the dredges working between Beaumont and Miller's Flat, that is, on the lower reaches of the river, the Golden Treasure dredge, a company-owned property, may serve to illustrate how the industry fares on that part of the river. During the year 1896 the total quantity of gold



DUNSTAN, OTAGO, 1863.

advance made in the perfection of dredging equipment during the next twenty years should in any approximate degree correspond with that of the same period just passed, the borders of mechanical perfection in this industry would surely be reached, and as a consequence, results hitherto undreamt of accomplished.

What has been done will, perhaps, be understood when it is stated that the first steam dredge (the Eureka), with, of course, numerous mechanical imperfections, was only in 1880 launched on the Clutha River, near Alexandra. Seventeen years before that period the first attempt known to tradition was made at the Beaumont, in the Tuapeka district, to obtain gold from the Clutha River by dredging. This first primitive vessel took the form of a couple of barrels surmounted by a timber platform, into which the stuff was shovelled by a man standing in the water close inshore, the dirt being afterwards taken on shore and cradled.

The next advance represented what was known as the spoon dredge. This

months by the returns obtained on the upper reaches of the river.

One of the most successful dredges on the river during the last year is the Moa, owned by the Clyde Dredging Co. She is working a river claim known as the Grand Junction, 75 acres in extent, which is situated close to the township of Clyde, and includes the mouth of the Manuherikia River and Butcher's Point. The company was registered in May, 1895, with a capital of £4,000, divided into 80 shares at £50 each. Early in the following July they had risen more than 100 per cent., their market price being £95 to £100. This dredge, which had previously been working on another part of the river, commenced operations on her present ground early in June of last year. Four days afterwards she washed up for 460z of gold. The next week's work resulted in a return of 1570z, of which 800z were won in three days. For the succeeding three weeks the returns aggregated 3080z. For the 34 days working from June 8 to July 17, the total yield was 5900z 3dwt 2gr, of the value

methods of gold saving, mechanical outfit, etc., of the dredges, I may take the Dunedin Gold Dredging Co.'s dredge as a specimen. This dredge has been for some years working on the Clutha River at Coal Creek, the chief fruit-growing district in Otago, situated at the southern end of Tuapeka. This dredge has taken as much as 1600z of gold a week out of the river, and has paid a very large amount of money away in dividends. This dredge is 80 feet in length, and consists of two pontoons, one 7 feet and the other 14 feet in beam and 7 feet deep. In the body of the larger pontoon are placed the boiler and engines. The ladder, on which the buckets work, is 60 feet long; and there are 32 buckets, the capacity of each being 3 cubic feet. These are worked by steam supplied by a dry back tubular boiler 5 feet 6 inches in diameter and 8 feet long, which works up to a pressure of 100lb to the square inch. The steam gear for moving the dredge by means of bow, stern, port and starboard wire ropes, secured on

returned by this dredge was 1,382oz 13 dwts, of the value of £5,323. From November 14 to Christmas, 1896, the dredge won 2960z of gold and paid in dividends 4/6 per £1 share. Since 1891, when she first commenced work, to the end of last year, she has paid in dividends £4,160, or £1 9/ per share, £1,384 only being paid-up out of a nominal capital of £3,000. This was equal to 145 per cent. on the capital paid up. The wages paid during the financial year 1896 amounted to £945 17/8, and for coal, which costs 13/ per ton carted to the river bank, £410 14/8.

The same company have another dredge (the Golden Run) on an adjoining river claim that took nearly £13,000 out of three acres of ground. A dredge close by, owned and worked by a party of six workmen has been during the last three or four years taking an enormous store of wealth out of the river. For a very long period during that time they were making £70 a man a week, and seldom go below £30 a man.