

expected to be linked with the Coleridge hydro-electric station early in 1939. The pontoon dimensions are—length 186 ft. 8 in., beam 72 ft., depth 12 ft. at bow stepped to 11 ft. midships and continuing that dimension to the stern. There are twenty watertight compartments, and total weight of the hull is 650 tons. The digging-ladder is 161 ft. between centres and weighs 168 tons. The dredge is designed to dig 85 ft. below water-level and carry a 30 ft. face above water-level. The buckets are 18 cubic-feet capacity, and there are 107 in the line, the rate of discharge being twenty-one per minute. The bucket-pins are 8 in. in diameter. The screen is 9 ft. in diameter, 54 ft. 10½ in. overall. It is set on a slope of 1½ in. to the foot, and revolves at 5·86 revolutions per minute. The size of the holes are ⅜ in. to ⅞ in., ⅝ in. to ¾ in., and 1 in. to 1½ in. The stacker-ladder is 223 ft. 1¼ in. between centres, the conveyor belt being 44 in. in width. The dredge is spud-operated, two spuds being fitted each 75 ft. in length and weighing 57 tons. Gold-recovery is effected by both short riffles and jigs, the latter being of the Bendelari type constructed in two banks, one on each side of the dredge. There are twelve primary jig units altogether, each with four cells and two secondary jig units, the concentrates from which may be treated in two amalgamation barrels or tables in the usual manner as necessity demands. The horse-power of the principal units are—bucket drive, two individual motors of 250 horse-power each, one on each side of the upper tumbler gearing driving through Pulvis shot-clutch and Brown reduction gearing; ladder-hoist 250 horse-power, screen drive 100 horse-power; swing winch 80 horse-power; stacker conveyor-belt drive 75 horse-power; jig-drive—two motors 40 horse-power each, high-pressure pump 170 horse-power; low-pressure pump 100 horse-power; hopper pump 60 horse-power. In addition to the above motors there are separate motors for the gangway hoist, stacker hoist, amalgamation barrels, and service pumps. The total horse-power of all motors connected is 1,487. The total weight of the dredge is 2,970 tons.

Okarito Five-mile Beach Dredge, Westland County (W. Cummings, Dredgemaster).—During the year the dredge employed an average of eleven men and treated 269,766 cubic yards for a return of 1,280 oz. of alluvial gold, valued at £9,632; the sum of £4,666 13s. 4d. was paid in dividends. Since the year 1931 the gold produced from this claim totals 15,056 oz. 9 dwt., valued at £99,494 6s. 3d., from which £38,500 has been paid in dividends. The dredge is operated by water-power and is fitted with 5-cubic-feet buckets. The average depth of ground dredged during the year was 20 ft.

Gillespies' Beach Dredge, Westland County (G. Pettigrew, Dredgemaster).—This electrically driven 5-cubic-feet-bucket dredge employed an average of sixteen men throughout the year, and treated 583,508 cubic yards for a yield of 1,951 oz. 9 dwt. of alluvial gold, valued at £16,023 7s. 9d. The sum of £2,916 13s. 4d. was paid in dividends during the year. Since the commencement of operations the total gold-production has been 10,488 oz. 2 dwt. of alluvial gold, valued at £83,463 8s. 7d. and the sum of £21,000 2s. 3d. has been paid in dividends. The average depth of ground was 28 ft. The Gillespies' Beach—Cook River motor road was opened during the year.

DREDGE-CONSTRUCTION.

Arahura Dredge, Westland County (Arahura Gold Dredging Co., Ltd.).—The erection of this dredge proceeded steadily throughout the year and is scheduled to be completed in May or June, 1939. The plant is an 18-cubic-feet-bucket dredge, capable of digging 85 ft. below water-level in addition to carrying a face 30 ft. above water-level. The approximate weight of the completed dredge will be 3,000 tons, and the total connected horse-power will be approximately 1,500. The pontoon is 186 ft. 8 in. in length, 72 ft. beam, and 12 ft. deep in the bows, and 11 ft. in the stern. The dredge is a sister-ship to the Kanieri Dredge, and the general dimensions given under the report on the latter dredge in the Dredge-mining Section will apply to the Arahura Dredge.

Ngahere Dredge, Grey County (Ngahere Gold Dredging, Ltd.).—The erection of the dredge hull was commenced in October, 1938, and rapid progress had been made on this work by the end of the year. The hull is 172 ft. in length, 72 ft. wide, and 12 ft. in depth. The dredge is to have 18-cubic-feet buckets, and is designed to dig 75 ft. below water-level and carry a 25 ft. bank. During the first of the year the work of digging the dredge pit with a steam-shovel was carried to completion, and workshops, store shed, and an office were built on skids so that they could be moved in sections; the power-line linking up the construction site with the Grey reticulation was completed, and the clearing of the land ahead of the dredge was commenced. The construction of the water-supply system for the dredge pond, involving a 30 in. pipe-line across German Gully and a 3 ft. by 2 ft. fluming 6,000 ft. in length, was commenced in August, and was well advanced at the end of the year. It is anticipated that the erection of the dredge will be completed in November, 1939.

The Blackball Creek Dredge, Grey River Dredge, and Kanieri Dredge were all completed during the year. It is estimated that the average number of men engaged in dredge-construction during the year was 210.

ALLUVIAL MINING.

Marlborough County.

Waikakaho Deep Lead Gold-mining Co. (R. C. Ruffin, Manager).—The three compartment shaft commenced last year was bottomed at a depth of 100 ft., having been sunk through schist rock for the full distance. A chamber has been opened out at shaft-bottom, and preparations are in hand for the extension of a 300 ft. crosscut to cut the lead proved by boring. Four men were employed during the year in shaft-sinking, no gold being produced.

Mahakipawa.—Sparkes and party, comprising four men, are working the Cullen's Creek deep lead from their shaft sunk on the south side of the valley and adjoining the King Solomon Mine. Their return for the year was 74 oz. 5 dwt. 3 gr. which realized £567 8s. 7d.

In the Wakamarina and Deep Creek areas a considerable number of men were engaged in alluvial mining. Seventy-four men were employed in alluvial mining in this county and won 267 oz. 9 dwt. 23 gr., valued at £1,958 18s. 4d.

Collingwood County.

Diamond's Flat Gold-mining Co., Ltd. (W. G. Mouat, Manager).—This company merged its interests with those of Mouat and Son and commenced hydraulic elevating at the upstream end of the freehold area. Only a short period was worked after the installation of the plant, which worked effectively, and 10 oz. 13 dwt. 6 gr. of gold were recovered, which realized £70 7s. 9d. Three men were employed while mining operations were in progress.

The total number of men employed in alluvial mining in the county was thirty-four, and the amount of gold recovered 127 oz. 8 dwt. 9 gr., which realized £878 9s. 3d. The production of gold and the number of men employed decreased during the period, many of the subsidized miners being transferred to Onckaka when an investigation of the iron-ore deposits commenced.

Takaka County.

Glover's Flat Syndicate.—Manoy Bros. claim; two men and a working manager engaged in alluvial mining an old channel of the Anatoki River. The claim is drained by a tail-race cut from the river to the paddock, and mechanical appliances are used to hoist the overburden and wash from the floor of the workings to the sluice-boxes.

A total of thirty-four subsidized and other alluvial miners in this county produced 61 oz. 6 dwt. 21 gr., worth £400 15s. 5d.

Waimea County.

In this county twenty-three men were engaged in alluvial mining and produced 64 oz. 4 dwt. 17 gr. of gold, valued at £497 18s. 2d. The gold was produced mainly from small claims on the Wangapoka and Baton Rivers.