of payable stone. A battery, five head of stamps, 700 lb. weight each, has been erected. An 8-horse portable Marshall engine is used for motive power, and the plant is in good working-order. (21/5/1901): Water is scarce in dry weather, and the battery is consequently not kept going full time. Twelve men employed. Treatment of the concentrates by cyanide is under contemplation.

James Hunter, Sutton.—(22/5/1901): Shaft sunk 60 ft. on a reef 3 ft. to 4 ft. wide. Trial crushings of the stone realised at the rate of 13 dwt. to 18 dwt. of gold per ton at the Dunedin School of Mines battery. A low level is now being driven on the reef towards the shaft from a deep gully. (Not visited; information from Mr. Hunter.)

HYDRAULIC AND ALLUVIAL MINING.

Sutton.

Hibernia Sluicing Company, Sutton (Donald Ross, manager).—(20/5/1901): Area of claim, 20 acres, of which about 2½ acres have been worked during the past five years. The face is from 30 ft. to 37 ft. high. A cut 10 chains long by from 2½ chains to 3 chains wide has been taken up on top of the false bottom. The deposit is mainly light gravels, interlaminated with bars of sandy clay. The wash on the false bottom runs from 5 ft. to 7 ft. in thickness, and carries numerous pebbles of rounded white quartz, with unusually large quantities of black sand and small "maoris." The reef can be seen cropping up on each side of the cut, and the manager is now preparing to sluice the false bottom, which is expected to be 20 ft. deep in the centre of the gutter. The gold, which is fine but "shotty" in character, is easily saved at the head of the tail-race in a run of boxes 66 ft. long by 2 ft. 9 in. wide. Angle-iron ripples are used, with cocoanut-matting beneath. The tail-race from the lower end of the boxes to the tunnel-mouth, some 7 chains, was recently washed up for only 4 oz. of gold after a run of eighteen months. The basin being rock-bound on the river side of the claim, and water for elevating not being available, a tail-race tunnel 377 ft. long was brought in from high-water mark on the Taieri River, and was driven 111 ft. in very hard blue reef. Then an uprise at an angle of 1 in 1½ was put up 27 ft. to softer strata, in which the tunnel was continued for 266 ft., when it struck the old river-bed in the claim. The tailings run freely, a block in the tunnel being unknown. Water is brought in eight miles from the Sutton Stream in an open race. There are two siphons across the Sutton—one being 3 chains, the other 4 chains long—and 40 chains of pipes 18 in. in diameter carry the water across the valley of the Taieri River into the claim. Water is plentiful, and work carried on all the year round. Six men employed.

Milton.

Canada Alluvial, Milton.—(23/5/1901): Five men fossicking on old diggings.

Manuka Creek.

Stewart's Sluicing Claim, Manuka Creek.—(23/5/1901): A ground-sluicing claim worked by one man. Owing to the small quantity of water available (viz., two heads), work is intermittent. The water is stored in a small dam and conveyed to the nozzle through 260 ft. of pipes. The material operated on is very free, and is discharged into a gully leading down to the Manuka Creek. For some time there has been friction between the claimholder and farmers lower down on account of the dirty water from the claim.

At the time of my visit the pipe-line was being shifted so as to drive the tailings into an adjoining gully.

Waitahuna.

German Flat Hydraulic Sluicing and Elevating Company, Waitahuna (A. Sutherland, manager).—(24/5/1901): A private company, consisting mainly of working shareholders. As the gold is not distributed over the whole area of the claim, the workings are confined to a narrow strip of deep ground. The face varies from 12 ft. to 18 ft. in depth. Pressure, about 150 ft. Height of lift, 20 ft. The material is discharged over 60 ft. of boxes provided with ripples and cocoanut-matting. A race from Bungtown Creek, four miles long, brings about thirteen heads of water to the claim. The pressure-pipes range from 24 in. to 7 in. in diameter. Four men employed.

Upper German Flat Hydraulic Sluicing and Elevating Company, Waitahuna.—(24/5/1901): Sluicing claim, worked by a party of working shareholders. Claim flooded out at the time of my visit, and the men being engaged on the race I did not see them. Three men employed.

Quilter and Sons, Waitahuna Gully.—(21/5/1901): Small private hydraulic-sluicing plant in Waitahuna Gully. Head-race ten miles long, carries two heads to the storage-dam, from which four heads are brought to the claim. Pressure-pipes, 500 ft.; pressure, 75 ft. Height of lift, 20 ft., with 42 ft. of boxes provided with riffles and cocoanut-matting for gold-saving. Present claim is about worked out. Three men employed.

Thomson and Party (Norwegian Company), Waitahuna Gully (C. Thomson, manager).—(21/5/1901): Hydraulic sluicing and elevating claim. Race, forty miles, brought from the Waitahuna heights. Five heads of water are in use on the claim, with a pressure of 300 ft. The material is lifted 26 ft., and discharged over 120 ft. of boxes fitted with angle-iron ripples and perforated plates on cocoanut-matting. This company has 6,000 ft. of pressure-pipes, varying from 22 in. to 7 in. The bottom is very hard schist, which is also uneven. I understand this company has not much ground left for working. Five to ten men employed.

Sailors' Gully Hydraulic Sluicing Company, Waitahuna Gully (A. Barr, manager).—(22/5/1901): This company is treating old worked ground, with occasional patches of solid. The ground averages about 6 ft. in depth. Water is brought in about twenty miles from the Waitahuna heights. Pressure, 200 ft.; and height of lift, 20 ft. Six to seven men usually employed. The rock bottom is very hard and uneven.