

company conveyed their ore to the battery. This level was cleaned out and retimbered, and up to date has been extended 426 ft., making the total length 610 ft. Besides driving this distance the company have prospected the reef formation on which they are driving, and have done cross-cutting to the extent of 70 ft., rising 90 ft., and a short intermediate level 45 ft. This makes their total length of dead-work done equal to 631 ft. during their term of occupation. The machine level is timbered throughout, the dimensions in the clear being 6 ft. 6 in. in height; width at top, 3 ft.; width at bottom, 4 ft. 6 in. Machinery, water-rights, &c.: The company have a twelve-head battery of 5 cwt. stamps, there being three mortar-boxes with four heads in each. The gold-saving appliances consist of silvered copper plates, and blanket strakes with a berdan for grinding the blanketings. The motive-power used is a Pelton wheel driven by a column of water of 250 ft. vertical height. The water is obtained from two creeks known as Sandhills and Ballarat Creeks, in which a first right of ten heads is held. The water is brought from the creeks to the company's pressure-tank by races two miles in length. From the Penstock, which is situated on the opposite side of the Shotover River to the mine and battery, the water is conveyed in piping having a diameter at the tank of 22 in., gradually reducing to 9 in. at the battery-house. The pipes are suspended where they cross the river by six $1\frac{1}{2}$ in. steel-wire ropes. The total length of piping is close on 500 ft.

Achilles Mine, Bullendale (Area, 134 acres; owner, Achilles Gold-mine, Limited; general manager, N. C. Morcom; mine-manager, James Edwards).—A change has been effected in the management of this mine. Mr. F. Evans, who has had the conduct of operations for the past thirty years, has now severed his connection with the company. The present manager reports that during the year the mine has only been worked for a few months, and a few trial crushings been made, which yielded 96 oz. 19 dwt. 6 gr. gold. The incline shaft has been sunk to a depth of 556 ft., and the present low level opened at 550 ft. Operations in the mine during the year have chiefly consisted of development work, shaft-sinking, stoping, and driving levels on the reefs. There are two lodes worked on in the mine, arsenical pyrites being associated with the quartz, the country adjacent being mica-schist.

Cromwell District.

Cromwell Proprietary Mine (Area, 189 acres 1 rood 30 perches; owner, Cromwell Proprietary Gold-mining Company, Limited; mine-manager, John Allan Dobson).—This mine is worked from two shafts, the old shaft and the pumping-shaft; the older winding-shaft being 260 ft., and the pumping-shaft 530 ft., in depth. There are five levels—two adits and three from shafts—viz., the 320 ft., 430 ft., and 520 ft. levels. There are seven reefs opened in the mine, varying from 6 in. to 3 ft. in width. The quartz from the surface to 320 ft. level is a brownish oxidized free-milling ore; below that level it changes to a bluish-white, harder in character, and associated with pyrites. The country rock is mica-schist, and the walls are usually well defined. Development works have been carried on, comprising winzes, uprisings, and stoping, mostly on the Cromwell or main lode. A shaft now down 86 ft. is being sunk 1,200 ft. distant from present workings to prospect reefs in the eastern part of the mine. The water is raised by an 8 in. pump, two plungers and a draw-lift being required to raise the water to the surface. Motor for pump, a Pelton wheel, giving 20-horse power. The winding machinery consists of a turbine, giving 15-horse power; a steam-engine, 16-horse power. Total value estimated at £3,500. The battery is driven by water-power, and consists of twenty stamps and four berdans; estimated value, £2,200. The quartz crushed amounted to 3,108 tons, yielding 3,451 oz. 8 dwt., of the value of £13,057 15s. 11d. The number of men employed during the year was twenty-seven, the majority being tributaries.

Carrick Range District.

Carrick Range Quartz-reefs, Bannockburn.—Mr. Hayes, Inspector of Mines, reports as follows:—

"Messrs. Lawrence Brothers are working the Day-dawn Mine, which includes the old Caledonia Mine, this latter being at an elevation of 130 ft. higher than the former. The reef is nearly vertical, and averages 18 in. in width. Three persons are employed. Messrs. Lawrence estimate that they have seven or eight years' stone to work at their present rate of output. The gold obtained is said to be $\frac{1}{2}$ oz. to the ton, and the quartz gets more refractory as it gets deeper, being associated with antimony and arsenical pyrites. The battery is near the low-level adit, and consists of four heads of stamps (800 lb.), and one berdan driven by a hurdy-gurdy wheel receiving its water at a pressure due to a head of 250 ft. 84 oz. of gold was obtained for the year. Water is obtained from the Carrick Race (which supplies part of the Bannockburn diggings), and is conveyed to the battery by 7 in. pipes, 450 ft. in length. At the Star Mine and battery (belonging to Mr. James Lawrence) three persons are employed, surface stone only being got at present. This is worth about 15 dwt. of gold to the ton. The battery has ten heads of stamps, and is driven by a hurdy-gurdy water-wheel. Water is obtained from Carrick Race, and is conveyed through 900 ft. of 7 in. pipes for a vertical distance of 210 ft. The 450 tons of quartz crushed yielded 107 oz. On the opposite side of the ridge from the Star Claim a prospecting tunnel is being driven by Mr. T. Holliday, who has a claim of 54 acres. The tunnel is in about 300 ft., but the reef has not yet been cut."

Prospecting has also been carried on in the locality of the Young Australia Mine.

Old Man Range District.

Excelsior Mine (Area, 20 acres; owners, F. W. and R. W. Gray; mine-manager, Francis W. Gray).—This mine is situated on the Obelisk or Old Man Range, about five or six miles from Bald Hill Flat. The workings have hitherto been from shafts of no great depth, a hand-windlass being used for hauling the material; operations in this way being continued along the reef until the shafts became too deep for the method of working. An adit was driven in one portion of the mine with a