

years. The Barewood Gold-mining Company (Limited), by systematic operations, having demonstrated that the reefs may be worked profitably, and that further prospecting and developments are quite justified. Upon the original mining reserve of 2,719 acres, an area of 450 acres is held in fifteen gold-mining leases, which extend for a distance of about four miles along the main lines of reef. At the present time mining operations are only carried out by two companies—viz., the Barewood Gold-mining Company (Limited) and the Welcome Quartz-mining Company, which latter company was only engaged upon prospecting operations at the time of my inspection.

The mine of the Barewood Company, which is contained within an area of 120 acres leased by the company, is situated at an altitude of about 1,075 ft. above sea-level, and mining operations have been carried out to a depth of 290 ft. from the surface by means of a vertical three-compartment winding-shaft, to which crosscuts connect four levels, viz.—

No. 1 level, depth 130 ft.,	driven upon 88 ft. S.E., and 429 ft. N.W.
No. 2 " " 188 ft.,	" " 132 ft. " " 282 ft. "
No. 3 " " 240 ft.,	" " 68 ft. " " 200 ft. "
No. 4 " " 290 ft.,	" " 227 ft. " " 154 ft. "

The depth of the winding-shaft is 300 ft., which it is proposed to sink to 400 ft. during the present year. An examination of the deepest workings furnished satisfactory evidence as to the maintenance of the vein in width and ore-values as depth has been attained. The average strike of the main line of reef, which has been found to maintain its course to a greater length than is usual with the quartz reefs of this Dominion, is north-west and south-east, inclining to the north-north-east at an angle of from 53° to 60°. The maximum width of the vein at present exposed is 12 ft.: this appears in the No. 4 or deepest level, but an average width of about 7 ft. is exposed in the mine. The treatment plant embraces Askem ore-breaker, Challenge automatic feeders, a 10-head mill and Wilfley table, all being driven from a Tangye suction-gas engine. The ore is free-milling, and the tailings are considered not worth cyanidation. Hitherto the drainage of the mine has been accomplished by baling, but it is proposed to put down electrically driven three-throw ram pumps during the year. The returns from the mine during 1908 were satisfactory: as the result of treating 4,793 tons of ore by battery amalgamation and concentration, bullion to the value of £7,230 was obtained, being an average of £1 10s. 10-7d. per ton, against a cost of £1 1s. 4-8d. per ton. The total production from the mine since 1895 has been £44,930 11s. 6d. from 22,825 tons (of 2,240 lb.). The capital called up only amounts to £2,000, a considerable amount of the development and plant having been paid for from the production of the mine.

The Ventilation and Hygienic State of the Mines.

A considerable amount of attention has been drawn to this Dominion by reason of the inclusion of the disease known as miners' phthisis in the Workmen's Compensation-Act as a disease for contracting which an operative must be compensated. As a result of this Ordinance the mine-owners declined to take the risk, and stipulated that each worker should be medically examined before being allowed to resume operations; and, the workers generally declining to undergo such examination, a settlement was only arrived at by the State Insurance Office accepting the risk at a low rate. The hygienic condition of the mines of this Dominion is quite equal to that in any other country, owing to the moderate temperature, plentiful water-supply, and compulsory sanitary arrangements. In several of the mines where machine drills or coal-cutters are used dust is not prevalent, owing to the dampness of the strata. A reliable gauge as to the general health of the miners is the average annual output of mineral per person employed underground; and this for the year 1908 amounted to 641 tons of coal per collier employed underground, and 159 tons of quartz per person employed at quartz-mines, which output is exceeded in no country. As the result of a medical inquiry into miners' disease at Bendigo, Victoria, Dr. Kelman, who reported thereon, stated that the chief cause of the ravages of consumption undoubtedly is the spreading of the infection by workers suffering from the disease in an active state. In that stage the tubercle bacilli are present in very large numbers, and are extremely virile. The same conditions lead in mines to the spread of consumption as produce the like result in habitations on the surface.

For the purpose of ascertaining the temperature and degree of humidity in the deepest mines of this Dominion, readings from the dry- and wet-bulb thermometer have recently been taken in the Inangahua mines by Inspector A. Whitley, and by Inspector M. Paul and the writer in those at Waihi, with the following satisfactory results:—

Name of Mine.	Depth of Place tested, from Surface. Ft.	Locality tested.	Thermometer-readings in Degrees Fahr.	
			Dry Bulb.	Wet Bulb.
Progress ..	1,426	No. 11 level	67.5	66.0
Wealth of Nations ..	1,736	No. 10 "	70.0	69.0
Keep-it-Dark ..	1,074	No. 7 "	65.0	63.5
New Big River ..	1,375	No. 9 "	61.0	58.0
Waihi ..	850	No. 8* "	81.5	78.0
" ..	850	No. 8† "	77.0	..
Waihi Grand Junction ..	794	No. 4‡ "	84.0	81.0
" ..	794	No. 4§ "	86.0	85.0

In connection with the Waihi tests, it is only fair to state that they were taken in the very warmest places that could be found in the mines; nevertheless, the results are entirely satisfactory. The sanitation of the mines is provided for by regulation under "The Mining Act, 1908."

* Temperature taken at the east face of the Empire vein, 580 ft. from No. 4 shaft crosscut.

† Temperature taken at the extreme face of the east level on the Martha vein.

‡ Temperature taken at stope 1,100 ft. in from shaft.

§ Temperature taken at east face Martha vein.