

*Bendigo.*—The Otago Central Consolidated Gold-mines drove 400 ft. into a high-level terrace near the old Bendigo Mine to prospect for a lead of alluvial gold. The work, which is still in progress, has not resulted in opening up any payable ground.

*Old Man Range.*—R. T. Symes, owner of the Advance Mine, crushed 95 tons of ore from White's Reef, at the battery level, for a return of 105 oz., valued at £436.

## LAKE COUNTY.

*Glenorchy.*—The Glenorchy Scheelite Company and seven parties of miners were engaged in scheelite-mining for a short period in the early part of the year. There being practically no demand for the mineral, operations ceased, and will not be resumed until the market revives.

## SOUTHLAND COUNTY.

*Muddy Terrace Sluicing (Waikaia).*—Sluicing was carried on in Mathewson's and Nuggety Gullies when water was available. Nine men were employed, and the yield of gold amounted to 325 oz., valued at £1,600.

*Nokomai Hydraulic Sluicing Company.*—This company's two elevators, working in Victoria Gully, a branch of Nokomai Creek, produced 1,723 oz., valued at £7,678. Dividends amounting to £1,200 were paid. Thirty-three men were employed in the claim and attending to water-races.

*Athol.*—Two claims were working in this locality. Blakely and McLister produced 272 oz., valued at £1,296, and Mutch and party 215 oz., valued at £1,029.

## WALLACE COUNTY.

*Ourawera Gold-mining Company (Round Hill).*—Eight men were employed, and gold valued at £1,609 produced.

*Round Hill Mining Company.*—Work was steadily carried on in the company's No. 1 claim, where elevating to a height of 60 ft. was in progress. At No. 2 claim a start was made to take a new paddock on the west side of the Ourawera Stream. The production of gold for the year amounted to 785 oz., valued at £3,994. Fifteen men were employed.

*Orepuki.*—Four claims, employing five men, produced 165 oz., valued at £743. H. Sorensen was the largest producer, with 75 oz.

*Dredge Mining.*

Nine gold-dredges were in commission during the year. Of these the Rise and Shine No. 1, working on the Clutha River above Cromwell, was the largest producer, yielding 1,258 oz., valued at £6,212.

The following dredges were dismantled and scrapped: The Perry, Lower Nevis, Adam's Flat, Waikaka Deep Lead Nos. 1 and 2, and Waikaka Forks.

*Minerals other than Gold.*

*Scheelite.*—23 tons of scheelite concentrates were produced in the Glenorchy district in the early part of the year. None of this was exported, as there was practically no market for the mineral, and the price offering was too low to cover the cost of production. The mines at Macrae's and The Reefs were idle throughout the year.

*Cinnabar.*—A discovery of cinnabar was made in the Greenvale Survey District by J. B. Graham and party. The mineral occurs in seams and impregnations over a width of from 9 in. to 2 ft. in soft sandstone. The prospecting done by the party comprises sinking to a depth of 50 ft. and driving 100 ft. on the deposit at 25 ft. from the surface. Further development will be required to prove if the mineral occurs in payable quantity.

*Phosphate Rock.*—6,012 tons of phosphate rock, valued at £6,012, were produced at Clarendon and Milburn by the Ewing Phosphate Company.

*Petroleum.*—The Canterbury Petroleum Company's borehole at Chertsey was cleared of the detached sand-pump, and sinking was resumed with 2½ in. casing. At 2,200 ft. quicksand was encountered, which prevented further drilling. The company has gone into voluntary liquidation.

*Accidents.*

Richard Fraher had his left leg broken by a fall of gravel in Charles Hore's sluicing claim in Main Gully, Naseby, through going too close to the working-face while sluicing operations were in progress. This was the only accident of a serious nature that occurred in the district during the year.

## ANNEXURE B.

## OBSERVATIONS BY KATATHERMOMETER OF THE PHYSIOLOGICAL CONDITIONS IN THE DEEP MINES OF NEW ZEALAND.

In my last annual report, Annexure B (2), appeared "Notes on the Katathermometer," an instrument invented by Dr. Leonard Hill, F.R.S., Director of Department of Applied Physiology, Medical Research Committee, for ascertaining a general measure of the cooling effect of air on the body when every physiological means of promoting heat-loss is brought into play.

It has been found that the ordinary thermometer is of very little use in indicating what the body requires, because it only gives the average temperature of the surroundings, and does not show the influence of wind, which is the most potent thing in cooling persons and animals. The wet katathermometer shows the influence of wind and humidity. A considerable amount of controversy has taken place regarding the provision contained in Regulation 94 (7) (c), under the Mining Act, that the maximum temperature of air in any working-place in any mine in the Hauraki Mining District (*i.e.*, Hauraki Goldfields), measured by a wet-bulb thermometer, shall not exceed 83° F., unless firing of explosives has occurred in such place within twenty minutes of the observation of the thermometer, but the Inspector may allow such higher temperature if in his opinion it is impracticable to maintain the temperature at or below 83° F., wet-bulb; but he shall fix the number of hours (not exceeding six) which any person shall be employed in any such working-places. As depth is attained at the Waihi mines it has occasionally been found impracticable to maintain the temperature below the above standard, the rate of increment of the temperature of the rocks with depth being approximately 1° F. in 33 ft. The wet-bulb temperature of the workings at times has approached 90° F., which temperature has been pronounced injurious to men at work by Dr. J. Haldane, F.R.S., and other eminent physiologists.