

An average of four men were employed throughout the year under the management of Mr. Luigi Tada, who in addition to the above-mentioned work, carried out some surface prospecting east of the Smile of Fortune and sank 50 ft. on a 12 in. lode which assayed up to 8 dwt. per ton. This find has not been exploited, on account of transport difficulties between lode and treatment plant at the Golden Bar Mine.

A considerable number of prospecting licenses were held over an area extending from Camp Creek, Wakamarina, to the Pelorus Sound for the purpose of exploring a wide mineralized shear zone.

A Wellington syndicate, assisted by the Labour Department, carried out systematic crosscutting and rising on the Kaituna side of the divide between Kaituna and Wakamarina watersheds, but their efforts proved that the ore body was low grade when the sulphides were reached, although samples from oxidized parts of the lode at outcrop gave encouraging assays. Work on the area has been abandoned, and practically none of the prospecting licenses have been renewed.

Buller County.

Mokihinui District.—Nearly 1,000 ft. of driving and crosscutting was completed in this area during the year under review. A considerable portion of work was on reef which after careful sampling and assaying proved to be unpayable. The Lady Agnes, Red Queen, and Anderson lodes received the major part of attention, and the results achieved were convincing enough to justify the cessation of operations on all except the Red Queen Mine, as their low-level drive had not reached a point where the downward continuation of a lode profitably worked in the upper levels may be expected at the lower level.

Karamea District.—Prospecting operations on the Orion Reef have not been resumed since their cessation in 1936.

On the Nile Creek, old lode workings were cleaned out and a small amount of driving carried out; this work, in conjunction with surface prospecting, proved that the claim had only a slender chance of being brought to the producing stage, and the men were withdrawn from the area.

Waimangaroa District.—Three hundred and sixteen feet (316 ft.) of driving and crosscutting was completed on this area between sea-level and the Britannia Mine. The work was confined to prospecting likely looking outcrops and reef tracks, but the results were not encouraging; in most cases values were low, and in others the lodes and enclosing country were broken and faulted to an extent that made profitable exploitation of the higher-grade ore impracticable.

In a search for the Beaconsfield lode on the side of the Waimangaroa River 67 ft. of crosscutting and 372 ft. of driving were completed. An ore-channel was followed for a considerable distance without encountering anything of consequence, and work on this claim was abandoned.

Lyell District.—A total of 1,432 ft. of driving and crosscutting was completed in this mining district in addition to a considerable footage of cleaning out and retrimbering of old levels, the latter work being carried out for the purpose of giving access to workings abandoned many years ago.

The outstanding feature in this area has been the discovery of what is termed Reid's lode. An outcrop was located a short distance west of Zalatown, and an adit driven below the outcrop developed an ore-body varying in width from 3 in. to 30 in. and values from a few grains to 2 oz. per ton over a length of 130 ft. in the top level; the No. 2 adit is now being driven on the lode channel, and the prospects of developing a payable block of ore are good.

No. 7 and No. 10 levels of the Alpine Mine are being repaired, with the object of carrying out exploratory work in connection with the search for the North Block, which was profitably worked from No. 6 to the surface prior to being cut off by a fault that displaced the ore-body between No. 6 and No. 7 levels.

All lode-prospecting in the Buller County was carried out by the Labour Department (Employment Division), which gave regular employment during the year to a considerable number of men. Systematic sampling of all ore-bodies was carried out, and the subsequent assays left no doubt as to the accurate value of all the reefs that were tested during surface prospecting operations or development in drives, with the result that a considerable amount of information is now available regarding the value of quartz lodes in the Buller County. Six hundred and forty (640) samples were taken during the period, and the assays were recorded on plans of the respective mines in the district.

Inangahua County.

Blackwater Mine (T. R. Hogg, Manager).—This mine employed an average of 205 men; development completed during the year totalled 1,836 ft. of driving, crosscutting, rising, and winzing, in addition to sinking the main north shaft 128 ft. below No. 13 level. On No. 10 intermediate level 55½ ft. were driven, 19½ ft. being on reef averaging 27.8 in. in width and 14.22 dwt. in value. No. 12 north drive was extended 5 ft., and with the 12 ft. driven south the reef averaged 20 in. and 23.5 dwt. No. 13 north drive was advanced 192 ft., 170 ft. being on reef averaging 26.8 in. in width and 13.73 dwt.; the south end of this level was driven 509 ft., 498 ft. being on reef averaging 33.2 in. and 15.41 dwt. Four hundred and forty-three feet of rising was carried out, the major portion being from No. 13 level to winzes sunk from No. 12 level; 392½ ft. were on reef of widths varying from 16.2 in. to 42 in. and values of 9.35 dwt. to 18.79 dwt. Winzing footages amounted to 345½ ft.; 287½ ft. of this distance were sunk on reef, the widths varying from 13.5 in. to 37.8 in. and values averaging from 11.76 dwt. to 23.5 dwt. Prospecting crosscuts and miscellaneous excavations for magazines, &c., amounted to 274 ft. The total amount of proved and probable ore developed during the period totalled 84,877 tons; 41,333 tons were mined and treated for a recovery of 14,281 oz. 17 dwt. by amalgamation, 2,557 oz. 13 dwt. 19 gr. by cyanidation, and 1,464 oz. 18 dwt. 5 gr. from concentration of subsequent roasting. £148,735 8s. 9d. was realized for the gold won, making a total of £2,675,996 17s. 3d. received for 557,096 oz. 19 dwt. of gold won since the commencement of operations. Dividends paid during the year amounted to £12,499 12s., which brings the amount of distributed profits up to £362,487 10s. An exhaust Sirocco fan driven by a 30 h.p. electric motor was installed on No. 12 level close to the Blackwater shaft and the mine ventilation improved to an appreciable degree. The ventilation plant, operating twenty-four hours per day and seven days per week, has substantially reduced the temperature in the lowest levels, and the conditions existing therein will compare favourably with most mines at the same depth. Experimental work in connection with the oil-flotation process as applied to the treatment of ore won from the Blackwater Mine has proceeded steadily during the year and a stage reached that ensures an economical extraction of gold by methods radically different from those now employed in this field. A new milling-plant will be erected close to the north shaft and will be put into commission during 1938.

Alexander Mine (W. J. Hall, Manager).—An average of thirty-eight men were employed by the company to carry out their mining and treatment operations. Stopping was confined to the ore-body between No. 4 and No. 5 levels on ore of an average width and value, when a comparison is made with the preceding year's return. Ore reserves were appreciably reduced during the year, the block between No. 4 intermediate and the main level being practically exhausted, but the pillar between No. 5 and the intermediate is estimated to contain enough ore to supply battery feed until the development of a new level, 150 ft. below No. 5, is completed. Development included the sinking of a winze, 29 ft. deep, from the floor of No. 5 level at the north end of ore-body. The winze was commenced on a section of lode 7 ft. in width, and was discontinued on account of drainage difficulties. The major development by the company consisted of driving No. 6 crosscut a distance of 1,046 ft., leaving approximately 600 ft. to drive and cut the lode which is exposed on the floor of No. 5 for a considerable distance and pitching at an unusual angle to the north. The crosscut bearing was laid off to avoid, if possible, the delay that was experienced in development of No. 5 level due to the northerly trend of the ore-body. During the period 4,360 tons of ore was mined and treated for a return of 2,130 oz. 14 dwt. of gold recovered by amalgamation, valued at £17,531 18s. 10d.; cyanided sands yielded 712 oz. 8 dwt. of bullion valued at £5,261 5s.; and 362 oz. 8 dwt., worth