

quartz-workings at Larry's Creek, and the southern limit at the Big River, it will be seen that quartz-mining is carried on along a belt of about forty miles in length. The returns from this field show there was about 11,000oz. of gold more obtained last year than in 1889-90, and for the purpose of investment this field is in a much sounder position now than it has been for some time past. The mines on this field are in many instances a considerable distance apart, which necessitates a great length of road being constructed year after year to give access to the mines as they are opened up. Some very good returns have been obtained from the southern end of this field, and fresh discoveries are still being made further to the southward. During last year 37,693 tons of quartz was crushed, which yielded 20,171oz. of gold, representing a value of £80,894. To take the whole of the mining companies, as far as can be ascertained, that have carried on mining operations in this field, it will be found that they have crushed 559,943 tons of stone, which yielded 431,073oz. gold, representing a value of £1,623,245. While the actual money paid in calls amounted to £291,029, dividends to the amount of £510,597 have been paid to the shareholders; thus showing that £219,568 has been received in dividends more than the amount paid in calls. In this district there are thousands of tons of quartz tailings, which, with the improved methods of extraction, should prove highly remunerative. An attempt has been made at Boatman's by using the Cassel process, but so far it has not proved successful, owing to slimes and baser metals having been found, and which had not been taken into consideration.

OTAGO.

Although Otago was the first district in the colony where auriferous lodes were worked, there has never been any large quartz-mining field opened up. Some very rich stone was discovered at Skippers in 1863, and, many years subsequently to this, a considerable quantity of gold was obtained from the New Bendigo Reefs by the Cromwell Company. More recently, at Macetown, a considerable quantity of gold has been obtained from the auriferous quartz-lodes in that district. During last year the quartz-workings were chiefly confined to Skippers and Macetown. Although quartz-mining has been carried on at Nenthorn, Barewood, and the Old Man Range, at none of these places, however, have the operations been extensive. As far as can be ascertained, 10,637 tons of quartz was crushed last year in the Otago District, which yielded 5,263oz. of gold; and of this 5,457 tons was crushed by the Phoenix Company at Skippers, which yielded 1,920 oz. of gold; thus showing that about 36½ per cent. of the gold obtained from quartz-lodes in the Otago District came from the Phoenix Company's mine alone.

A rich auriferous quartz-lode was discovered during last year at Wilson's River, in the Fiord County, but scarcely any work has yet been done to either prove the extent of the lode or the rich gold-bearing shot it contains. All the alluvial gold found in this locality is intermixed with quartz, a great deal of the gold having sharp angular edges, and being honey-combed as in a quartz-lode. This indicates that it has not travelled far, and leads to the belief that other rich lodes will yet be discovered in this neighbourhood.

In connection with quartz mining, attention should be directed to any machinery or appliances tending to reduce the cost of working the mines or the reduction and treatment of ores, the expenditure on fuel alone, where steam machinery is employed, being very considerable, forming an important element affecting the profits of the mine proprietors. Representations having been made to me that electricity could be cheaply generated by water-power for working machinery at Kuaotunu and the Thames Goldfields, I directed the Inspecting Engineer to examine and report on this question in conjunction with Mr. R. E. Fletcher, Electrical Engineer, Dunedin, with whom arrangements had previously been made to visit these localities. These reports have been received, and will be laid on the table of the House.

In concluding my remarks on the quartz workings, I would point out that this class of mining is only in its infancy, and, notwithstanding the many improvements made in mining machinery, and the various processes for the amalgamation and reduction of ores, and the extraction of bullion therefrom, the recent experiments made by Mr. Park, of the Thames School of Mines, as to the percentage of bullion saved, show that those engaged in quartz-mining have yet a good deal to learn. There is evidently ample room for improvement in the appliances for the extraction of bullion from ores, as it is clearly demonstrated that at the present time only about 50 per cent. of the precious metals contained in the ores are saved.

The practice also adopted by many mining companies of paying away all the profits derived