The following miscellaneous parcels were also treated:—

Name.	Weight.	Melted Bullion.	Value.
	Lb.	Oz. dwt. gr.	£ s. d.
Progress Castle Rock	420	69 5 0	191 11 10
Bank of New South Wales, Thames	400	24 10 0	16 10 9
Sheet Anchor (69 oz. plate-amalgam)	...	20 19 0	74 12 0
Bank of New South Wales, Thames	350	28 6 0	21 0 0

During the year I have made a large number of determinations to ascertain the distribution of tellurium in the mines of the Hauraki Peninsula, and to find out whether its occurrence had any deleterious action on the recovery of the bullion by the ordinary processes. Although I have located tellurium in a number of places and mines where it has not hitherto been recognised, I have been unable to obtain a high percentage in any sample of ore that I have analysed, and generally the tellurium was found in only minute quantities mixed with a comparatively large amount of base sulphides, so that its mode of combination could not be determined. Its associates, however, are copper, gold, and silver in greater or less quantity. I found no tellurium in ore from Karangahake, Waihi, and Waitekauri, and certainly in the ore now being won in the mines of the Hauraki Peninsula there is little or no tellurium, and in no case is there sufficient to prejudicially affect the extraction of the gold. The chief places where I found tellurium are—Coromandel, in mispickel; Tapu, in copper- and iron-pyrites; Waiomo, in quartz containing a little copper-sulphides and rich silver-sulphides; Waiomo, in complex sulphide-ore; and at Tararu Creek.

I found a considerable amount of selenium associated with the silver and gold in certain of the Great Barrier ore.

With regard to the molybdenite located by myself in Tararu Creek there is nothing fresh to report. In June I found among some of the samples of ore sent to me for determination indications of molybdenite, and, in consequence, proceeded up the Ohio Creek with Mr. William Martin, and after some little search found an iron seam, about 1 ft. wide, carrying molybdenite in nests and pockets, and also in small stringers $\frac{1}{4}$ in. wide. I have since found the mineral in small quantities in several other places in the same creek, but nowhere in sufficient quantity to mine, and practically no work has been done on the vein in which it was first discovered.

From the Kawau Copper-mine, which is now being drained, Mr. Baker has received a very interesting specimen of native copper. The copper occurs in tree-like masses made up of well-formed crystals, and is found on the mine timbers which have been lying under water.

Notes on the Treatment of some of the Parcels in the Experimental Plant.

The parcel of Monowai tailings was obtained from the ore treated at the Monowai battery by Mr. Gordon French. The original ore, worth a little over £2 per ton, was crushed and partly concentrated until its value was £4 0s. 1d. per ton, but was not subjected to amalgamation or other process before being sent to the school. The analysis of the concentrated ore was as follows: SiO_2, 67·5 per cent.; $CuFeS_2$, 8·3 per cent.; FeS_2, 16·0 per cent.; PbS, 6·8 per cent.; ZnS, 1·4 per cent.: total, 100 per cent., with traces of bismuth, tellurium, and antimony. According to instructions, the concentrated ore was treated by cyanide; but the extraction was unsatisfactory, while the consumption of cyanide was high. A much higher return was obtained by roasting with salt, washing to remove soluble salts of copper, and then cyaniding; and the result would have been still more satisfactory but for the presence of some coarse gold, which was not dissolved by the cyanide solution. This process, however, is unsuitable owing to the cost. Probably the best mode of treating this ore, which contains a large amount of complex sulphides, some coarse gold, and is worth, say, £2 5s. per ton, would be to wet-crush, save the coarse gold on Muntz-metal plates, concentrate the tailings into a mineralised portion worth, say, £12 per ton, and save all the sands and slimes. These latter could readily be treated by cyanide at small cost, and the concentrates would pay to ship to the smelter.

Golden Belt.

The ore consisted of flinty quartz and mullock. On crushing, sampling, and assaying its value was found to be £1 4s. 1d. per ton. 850 lb. was treated by the cyanide process, which gave an extraction of 75·4 per cent. of its value. A small parcel from the Arrow section, and assaying £7 15s. 10d. per ton, was also tested by cyanide, which saved 73·4 per cent. of the value. In both of these parcels the greater part of the gold is found along seams in the solid quartz, and while part of the gold is fine, and some of it very fine, and easily extracted by cyanide, about one-quarter of the value occurs in particles of bullion too coarse for successful cyanidation. Wet crushing and amalgamation of the coarser particles of bullion, followed by cyanide treatment, appears to be the most suitable process, but care is necessary to save the fine gold existing in the ore.

A parcel of 800 lb. from the Venus section gave a return by pan-amalgamation equal to 79·5 per cent. of the value, while a laboratory test on the same ore gave an extraction of 91·9 per cent. by cyanide. The above shows that, although parts of the reefs may well be treated by the cyanide process, coarser gold may at any time be met with which could not be saved by that process, and provision should therefore be made for amalgamating that portion.