

"Thus the total actual saving of value from the general dirt presented to the battery process for treatment was only 51·5 per cent. of the original assay-value; and it is noteworthy that of this amount only 3·3 per cent. of value of saving was effected by the amalgamated plates. This latter fact is no doubt attributable to the large proportion of decomposing base metallic sulphides contained in the ore. During the treatment of this ore about 5 tons of berdan tailings were collected. These are approximately valued at £17 2s. 9d. After making due allowance for the value contained in these tailings, it would appear that the total loss in the treatment of this small parcel amounted to over £400, all placed beyond recovery by the present mode of extraction. Considering the highly-mineralised and refractory character of the Alburnia ore, the percentages of saving effected by the Cambria battery are remarkably high, and must be the result of much skilful manipulation; nevertheless, it seems a pity to see so large a loss of bullion after the time and expenditure incurred in finding, winning, and carting the ore. The ore is well adapted for concentration with subsequent chlorination, which would extract over 90 per cent. of the assay-value.

"Report on Percentage of Saving at Moanataiari Battery.

"These tests extended over the six weeks' run, extending from the 17th March to the 30th April. The particulars relating to the general quartz, and the surface-dirt, crushed during that period were kept separate, in order to be able to determine the percentage of saving effected in each case.

"The assay samples were taken at the gratings at regular intervals of fifteen minutes. The tubs containing the samples were forwarded to the School of Mines, where their contents were thoroughly mixed, sampled, and then assayed.

"The amalgam from all sources was cold-water machine squeezed, thus rendering the ratios of gold to amalgam very uniform throughout.

"The tonnage was obtained from the cubic content of the trucks, the number of trucks, and the actual weight of a cubic foot of the dry ore in each case; and due allowances were made to avoid an over-estimate of the quantity of ore.

"*Surface Dirt, First Test.*—Of the brown oxidized surface-dirt 700 tons were treated, showing an assay-value per ton of:—

							Oz. dwt. gr.
" Bullion	...	...	...	...	...	...	0 5 6
Gold	...	...	...	...	...	...	0 3 12
Silver	...	...	...	...	...	...	0 1 18
Value, 14s. 3d.							

"The total original value of the ore as won from the mine would, therefore, be 700 tons at 14s. 3d. = £498 15s. The 700 tons yielded 91oz. 15dwt. of amalgam from all sources; and this, when retorted and melted, produced 39oz. 10dwt. of bullion, valued at £2 12s. 2d. per ounce. The proportion of ratio of bullion to amalgam was therefore 1 to 2·32.

"The following tabulated statement shows the amount of amalgam, bullion, value, and percentage of saving from each source:—

				Amalgam. Oz. dwt.	Bullion. Oz. dwt.	Value. £ s. d.
" Plates	...	...	...	71 15	30 18	80 11 11
Berdans	...	...	...	6 0	2 12	6 15 8
Headings	...	...	...	14 0	6 0	15 13 0
Totals	...	...	...	91 15	39 10	£103 0 7

"Percentage of Saving.

							Per cent.
" Plates	...	...	...	...	...	...	16·1
Berdans	...	...	...	...	...	...	1·3
Heading	...	...	...	...	...	...	3·2
Total	...	...	...	...	...	...	20·6

First Test, General Quartz and Picked Stone.—This consisted of 400 tons of blue unoxidized quartz, containing about 4 per cent. of base metallic sulphides, principally iron pyrites. It showed the following assay-value per ton:—

							Oz. dwt. gr.
" Bullion	..	...	...	...	...	...	0 11 7
Gold	...	...	...	...	...	...	0 7 13
Silver	...	...	...	...	...	...	0 3 18
Value, £1 10s. 9d.							

"The total approximate value of the ore was as follows:—

						£ s. d.
" 400 tons at £1 10s. 9d.	...	...	...	...	...	615 0 0
Value of specimens	...	...	...	...	...	110 6 7
Total	...	...	...	...	...	£725 6 7

"During the treatment of this parcel of ore, 376oz. 17dwt. of amalgam was obtained from all sources, yielding 143oz. 10dwt. of melted bullion, valued at £2 12s. 2d. per ounce. The proportion of bullion to amalgam was 1 to 2·62.