

It contained free gold and silver, combined principally with chlorine as horn silver or kerargyrite. The ore weighed 320lb. It was dried, dry crushed, sampled, and assayed with the following results per ton :—

|                  |     |     |     |     |     |     |              |
|------------------|-----|-----|-----|-----|-----|-----|--------------|
| " Bullion        | ... | ... | ... | ... | ... | ... | Oz. dwt. gr. |
|                  |     |     |     |     |     |     | 87 11 10     |
| Gold             | ... | ... | ... | ... | ... | ... | 26 2 10      |
| Silver           | ... | ... | ... | ... | ... | ... | 61 9 0       |
| Value, £113 15s. |     |     |     |     |     |     |              |

"The dry pulp was treated by raw hot pan-amalgamation with chemicals, and yielded 18oz. 5dwt. of melted bullion, 180·0 fine in gold, and 792·0 fine in silver, equal to a value of 16s. 9d. per ounce, representing a saving of 86·5 per cent. of the silver and 95·1 per cent. of the gold, or 93 per cent. of the assay-value.

"The tailings were carefully sampled and assayed, with the following result per ton :—

|                                      |     |     |     |     |     |     |              |
|--------------------------------------|-----|-----|-----|-----|-----|-----|--------------|
| " Bullion                            | ... | ... | ... | ... | ... | ... | Oz. dwt. gr. |
|                                      |     |     |     |     |     |     | 7 6 5        |
| Gold                                 | ... | ... | ... | ... | ... | ... | 1 5 5        |
| Silver                               | ... | ... | ... | ... | ... | ... | 6 1 0        |
| Value, £5 18s. 10d.                  |     |     |     |     |     |     |              |
| Percentage recovered by amalgamation | ... | ... | ... | ... | ... | ... | 93·0         |
| Percentage represented by tailings   | ... | ... | ... | ... | ... | ... | 5·7          |
| Percentage of value unaccounted for  | ... | ... | ... | ... | ... | ... | 1·3          |

100·0

"This was a very free milling ore, and a large proportion of the bullion can always be recovered by pan-amalgamation, with ordinary care. The unaccounted loss is very low in this test, and shows very close working.

"No. 6.—This was a parcel of 2,800lb. of ore from the City of Dunedin Mine, situated in Tararu Gully, Thames. It consisted of a greyish-white friable quartz, veined with calcite. Both the quartz and the calcite frequently possessed a pink or flesh colour, due to the presence of rhodonite, the rose-coloured silicate of manganese. The ore contained gold and silver, the latter in the form of dark-blue sulphide argentite, which occurred mostly in thin wavy parallel lines. The gold existed in an extremely fine state, principally associated with the argentite. The ore was dried, dry crushed, sampled, and assayed, and was found to show the following assay-value per ton :—

|               |     |     |     |     |     |     |              |
|---------------|-----|-----|-----|-----|-----|-----|--------------|
| " Bullion     | ... | ... | ... | ... | ... | ... | Oz. dwt. gr. |
|               |     |     |     |     |     |     | 2 8 4        |
| Gold          | ... | ... | ... | ... | ... | ... | 1 0 4        |
| Silver        | ... | ... | ... | ... | ... | ... | 1 8 0        |
| Value, £4 5s. |     |     |     |     |     |     |              |

"The pulverised ore was treated by raw hot pan-amalgamation, and yielded 1oz. 12dwt. 12gr. of melted bullion, 471·1 fine in gold, and 504·5 fine in silver, equal to a value of £1 19s. 2d. per ounce, representing a saving of 61 per cent. of the gold and 47 per cent. of the silver, or 60 per cent. of the original value of the ore. A large parcel of the same ore was treated at Darrow's battery, and yielded at the rate of 4dwt. of bullion per ton, representing a saving of only 14·4 per cent. of the original value.

"No. 7.—This was a ton of moderately hard bluish-grey quartz, containing copper and iron pyrites in small nests and in disseminated grains. It was dried, dry-crushed, sampled, and then assayed, with the following results per ton :—

|                 |     |     |     |     |     |     |              |
|-----------------|-----|-----|-----|-----|-----|-----|--------------|
| " Bullion       | ... | ... | ... | ... | ... | ... | Oz. dwt. gr. |
|                 |     |     |     |     |     |     | 1 13 14      |
| Gold            | ... | ... | ... | ... | ... | ... | 0 3 12       |
| Silver          | ... | ... | ... | ... | ... | ... | 1 10 2       |
| Value, 18s. 6d. |     |     |     |     |     |     |              |

"By raw pan-amalgamation the pulp yielded 8dwt. 8gs. of melted bullion, 344·5 fine in gold, 620·8 fine in silver, equal to a value of £1 9s. 2d. per ounce, representing a saving of 91·6 per cent. of the gold, 28 per cent. of the silver and 74·3 per cent. of the assay-value.

"No. 8.—This was a parcel of rich gold-bearing quartz from the Royal Oak Mine, Coromandel. It was forwarded by Mr August Luhrs, a tributer in that mine. The ore weighed 558lb. It was dry-crushed, carefully sampled and assayed, showing the following value per ton :—

|                       |     |     |     |     |     |     |              |
|-----------------------|-----|-----|-----|-----|-----|-----|--------------|
| " Bullion             | ... | ... | ... | ... | ... | ... | Oz. dwt. gr. |
|                       |     |     |     |     |     |     | 772 1 0      |
| Gold                  | ... | ... | ... | ... | ... | ... | 451 6 2      |
| Silver                | ... | ... | ... | ... | ... | ... | 320 14 22    |
| Value, £1,845 6s. 6d. |     |     |     |     |     |     |              |

"The pulp was raw pan-amalgamated with chemicals, and yielded 201oz. of melted bullion, 576·7 fine in gold and 413·1 fine in silver, equal to a value of £2 7s. 3d. per ounce, representing a saving of 95·4 per cent. of the gold and 96·3 per cent. of the silver, or 95·8 per cent. of the assay-value of the ore. This is an eminently satisfactory result, and goes to prove that when the ore is