

LETTER XLII.

THE MINES OF FRESNILLO.

[*London, August, 1852.*]

BEFORE taking leave of the subject of mining in Mexico, I must here insert another though short report which I have received in Spanish, and translated, of the celebrated mines of the Fresnillo, analogous to those of Real del Monte; and showing how much may be *safely* done in mining with good management and economy, however uninviting the ores to be worked may be. It would, indeed, be well for the mining interests at large, as it appears to me, were operations adopted less speculative in their nature than the sanguine temperament of miners make them—something more reduced to a systematic business, such as is now established at Real del Monte and the Fresnillo. By seeking for rich ores, and despising poor ones, no doubt brilliant results are here and there now and then obtained; but it would appear that a steadier prosperity would

be insured by making poor ores the foundation of mining operations, obtaining from them the "daily bread," and so having continuous and certain means of steadily working into rich veins.]

NOTES ON THE AFFAIRS OF THE MINES OF FRESNILLO, IN THE STATE OF ZACATECAS.

It is known, by original documents, that the mines in the *Cerro* (or mountain) of Proaño, were occasionally worked from as early a date as the year 1617. In 1751, the works began to be carried on with less interruption, and very rich and abundant returns were realised over a considerable extent of ground. At this time, the administrator-general of these mines was Don N. Murguia, who left behind him very circumstantial accounts of the excellent state in which he abandoned them, for want of capital supplied by the person who then owned them, one Captain Don M. Muñoz, *protegé* of the old house of Aldaco, of Mexico. The mines were afterwards worked by various rich inhabitants of that city, but in so parsimonious a manner, that their works were never carried much beyond the surface. Murguia's accounts, however, were found to be

so very exact, that they led the government of Zacatecas to undertake and carry forward the draining and working of the mines from the year 1830 to 1835, when the general government leased them to the Zacatecano-Mexican Company.

This association was divided into 120 shares, or, as they were called, "*decimos de barra*" (tenths of a bar), equivalent to the twelve whole bars, or shares, ceded to the company by the government, which reserved to itself twelve bars more, or, in other words, the half of the mine, in quality of *aviadas*.* One condition of this contract was, that it should remain in force for twelve years; and another, that, besides the necessary sums expended in working the mines, the company should make a loan to the government of 1,300,000 dollars, repayable from one-third part of the profits; and, from both these obligations, sprung the enormous

* The usual custom is, to divide every mining business into twenty-four bars or shares: *barras aviadoras* are those which are ceded by the owners of the mine to others, on condition that, both for the time, and in perpetuity, they shall pay all the expenses of the working; while the *barras aviadas* are those which the owners reserve to themselves, and who, without any obligation to contribute towards the outlays, are entitled to their share of the profits, after deducting the expenses incurred by the *aviadores* in working the mines.

disbursement of 23,300 dollars for each of the 120 shares.

The *cerro*, or hill, of Proaño contains eighteen mines, the greater number of which have been worked by the Company in question; and this is at present done, beneficially, in five of the mines of considerable extent, called Barreno, Oscura, Beleña, Colorada, and Amarilla, whose several veins extend to five thousand *varas*, or Spanish yards, in length, while the Company preserves its works of discovery in such other mines as present the most favourable aspect, and from which indeed very satisfactory results are generally obtained. They have twenty-one adits (*tiros*) in good repair, and of different depths; among these, the most remarkable are of the Beleña and San Francisco mines, being the principal drains, and of the length of 450 *varas*. On these are placed two steam engines of the highest power in this country, with cylinders of eighty inches diameter, and capable of working, to good effect, down to 650 or 700 *varas*.

The Company possesses three reduction-establishments; viz., that of Guadalupe, with 48 *tahonas*,*

* These are circular mule-mills, or *arrastres*, with millstones to

or mills; of Rosario, with 16; and of the new and large one, erected at the foot of the hill, of 250 *tahonas*, and capable of containing in all 314. Here have been concentrated all the amalgamation works. In the factories, general buildings, machinery, stock, etc., etc., received by the Company on commencing its contract, or made and purchased since, about 1,500,000 dollars have been invested.

The new *hacienda* just mentioned, the largest and handsomest of any in the republic, is capable of being greatly enlarged, and of considerable improvement. It is at present intended to work the different mills in which the metals are crushed by steam, replacing with this powerful agent the large number of animals, which, up to this time, have been employed in the crushing. This very useful reform, for the realising of which an intelligent and practical engineer has arrived from England, will double the produce, with an incalculable saving at the same time. True it is, that

crush the metal, and worked by one or two mules. The Company is about to put up twelve mills of a new kind, worked by steam, and which by this power will crush from 20,000 to 25,000 quintals of metal weekly. The steam engines will be constructed in the well-known establishment of Messrs. Harvey and Co., Hayle Foundry.

in no other *hacienda* has greater economy been practised, for the Fresnillo has contrived to make metals of the low average produce, of three marks, pay; a fact of which there is, perhaps, no other example in the mining history of the country.

Up to the end of 1837, the Zacatecano-Mexican Company had to make not only the disbursements, which the complete working of the mines required, but those to which they were bound by the loan to the government. In September, of the said year, the shareholders began to receive their dividends; and they continued to be paid without interruption, each successive year, up to the expiration of the twelve, which were stipulated as the duration of the first contract.

The produce of the Fresnillo, during the above time amounted to 21,356,353 dollars 73 cents, which, after covering the amount expended in setting up and furnishing the mines, amounting to 1,414,699 dollars, left a net profit of 3,357,463 dollars 25 cents.

As, during the course of the twelve years mentioned, the partners had acquired not only the perpetual property of the twelve *barras*, which the government had ceded to them, but the other

half of the enterprise, which had at first been reserved in quality of *aviadas*, there was formed in September, 1847, by the incorporation of one with the other, the new and present Zacatecano-Mexican Company, divided into 230 $\frac{2}{3}$ shares, with perpetual and exclusive dominion over all that is comprehended in the vast business of the Fresnillo, as shown by deeds and documents, which solemnly guarantee the legitimacy of their titles of possession.

The produce of the enterprise, since the time mentioned, is stated in the following detail:—

From September, 1847, to December, 1849:—

| | Dollars | Cts. | Dollars | Cts. |
|--------------------|-----------|------|---------|------|
| Produce | 1,737,331 | 46 | | |
| Expenses | 1,414,914 | 25 | | |

Nett Profit 322,417 21

In the year, 1849:—

| | | |
|--------------------|-----------|----|
| Produce | 1,398,386 | 68 |
| Expenses | 980,384 | 33 |

Nett Profit 418,002 35

In the year, 1850:—

| | | |
|--------------------|-----------|----|
| Produce | 1,279,762 | 37 |
| Expenses | 1,006,209 | 91 |

Nett Profit 273,552 46

1,013,972 02

Of these sums the following have been distributed among the shareholders:—

| | Dollars | Cts. |
|---|----------------|-----------|
| From September, 1847, to December, 1848 | 402,687 | 00 |
| In all 1849 | 346,227 | 40 |
| In all 1850 | 207,685 | 80 |
| | <u>956,600</u> | <u>20</u> |

In concluding these notes, it is proper to state, that the *haciendas*, offices, and houses of the company—the steam-engines and other machinery in use—the effects and stock, of which a vast amount is always on hand—and the large number of animals occupied in mining labours—represent fairly a value of more than a million and a half of dollars; that, in the court of the principal *hacienda*, there are always, in ordinary times, from three to four thousand heaps of metal, of twenty *quintals* each, ready for crushing, with, at least, twelve or fifteen hundred *marks* of silver, of the value of from one hundred to one hundred and twenty-five thousand dollars: in fine, that there is an abundant supply of every thing which can be required for the working and the labour of so large a business, in which upwards of three thousand persons are employed.

As may be seen by the foregoing data, the Fresnillo mines have given rich returns. Its metals, although of low produce, are so abundant, or rather, it may be said, so inexhaustible, its administration is so economical and so well regulated, and all its circumstances are so analogous with a well-conducted mercantile or industrial undertaking, that it is not subject to the ordinary vicissitudes of mining affairs. It may, accordingly, be asserted, that the Fresnillo will continue to give to its shareholders an annual income of, at least, from three hundred to four hundred thousand dollars.

PART V.

REVIEW OF MEXICO.