

power each, were brought out from England, and three of them put up in the districts of Santa Rosa, Cayac, and Zauracancha. That of Zauricocha was not set up, but the other three were worked with some success.

A level was driven from the engine-shaft of Santa Rosa, into the mines of Zauricocha, and rich ores were raised. The engine of Cayac did little more than assist that of Zauricocha, which, on account of the greater quantity of water, was barely able to do the work required of it. The expense incurred by the house of Abodia in this undertaking was upwards of six hundred thousand dollars, and at the moment when they had begun to receive a good return for their capital, the revolution broke out, and the troubles incident to it put a stop to their work, and left them with that amount of loss. Subsequently, at the close of the war, the engine of Santa Rosa was again put in operation; and in parts of the years 1826 and 1827, a considerable quantity of silver was produced, by means of the drainage effected by it.

Some abortive attempts were made to use the engine of Zauricocha, from 1829 to 1833; but since the latter period they have all been abandoned, as unserviceable.

The establishments for grinding and amalgamating the ores are situated at from one mile to three leagues from the mines: those nearest the town are deficient in water for several months in the year. The construction of all these mills is rude, and much power is lost. A mill will grind two hundred boxes of the hardest ore, if it have a constant stream of water. The amalgamation of the ore with mercury is effected by its being trodden by horses in circular enclosures, containing from five to ten boxes. The consumption of mercury, including mechanical and chemical loss, is about one pound for each marc of silver produced.

No attempts have yet been made at roasting any of the ores.

Coal mines are met with in various parts of the country, at the distance of from two to seven leagues; the price is one real for an arroba, but might be much reduced if the business were properly attended to.

Various plans have been formed at Lima, and in England, to purchase and work these mines, but with what success is very uncertain; the attempts have generally been supposed to have resulted in a loss. Speculation is always rife in search of these valuable ores, and prospects of great gain are invariably held out to those who engage in them; but there is much difficulty in getting the business into successful operation. The great error committed by all the English companies