

per monton of twenty quintals. An increase either in the quality, or the quantity, was required in order to cover the expences, which, in so extensive an undertaking, were of course considerable. It was calculated, however, that four hundred cargass more,* (making 1000 in all,) even of the same poor ores, would not only cover the "Memorias," but leave 1,000 dollars profit weekly. The Miners of Zacatecas entertained little doubt with regard to the issue of the enterprise of the Company at San Acasio, for no mine in the district bears so high a character: but the time requisite in order to reap the full advantage of the investments made is uncertain, from the vast extent of the works, which occupy a space of 800 varas upon the course of the vein. Mr. Alaman seemed to be of opinion in 1826, that nearly the whole of 1827 would be required to bring his operations to a conclusion, and some allowance must always be made for additional delays. In the course of the present year, however, the result must be known.

The Company is in possession of two Haciendas de beneficio; that of San José, in the town of Zacatecas, with fourteen Arrastres, and Cinco Señores,

* It must be recollected that profits depend upon two distinct causes, the great abundance of poor ores, yielding a given profit upon an immense mass of "Montones," or a less copious extraction of rich ores, raised by fewer hands, and "reduced" with less labour. It is in the first that the great riches of Zacatecas and Guanajuato have principally consisted.

without the town; which formerly belonged to La Borde. In his time it contained sixty arrastres. Only twenty-six are now in repair, but the number will be augmented as the produce of the mines increases.

The works of the Bolaños Company, (contracted for in 1825, as a desirable addition to the principal mines of the association, situated at Bolaños, in the neighbouring state of Jalisco,) are all upon the Veta Grande, to the Westward of San Acasio. They comprise fourteen shafts, (including the Tiro-General,) originally separate mines, but now connected with each other, and worked as one negotiation. These occupy a space of 1,200 fathoms upon the vein. Few exceed 300 varas in depth; all have been productive; many remarkably rich; and none have given reason to imagine that the vein was exhausted even in the deepest levels.

The two contiguous mines of Urístă and Mîlă-nēsă rank highest amongst those comprehended in the negotiation of Veta Grande. The first produced the capital out of which the fortune and title of the Counts of San Mateo (now united by marriage with the Marquisate of the Jărāl) proceeded; and to the second, the wealth of the Condes de Santiago de la Laguna was due. During the last forty years they have been worked, with the adjacent shafts, by the Fagoaga family, and have yielded (as stated in Table, No. 9, annexed to the first Section of the fourth Book) 2,088,425 marcs of silver, (16,832,400 dollars.)

But during the last ten years the produce has barely covered the expences, and the proprietors have derived little or no profit from the concern, although the establishment has been kept up in the hope of discovering a "clavo rico," and obtaining another bonanza. Captain Vetch having convinced himself by a long and patient investigation, that the system of management was susceptible of great improvements, and that by reducing the establishment the receipts might, even in the present state of the mines, be made to exceed the expenditure, while the extent of vein yet unexplored afforded the fairest opening for new works, entered into a contract with the proprietors, to whom he paid 130,000 dollars on the part of the Company, for the transfer of the negotiation. He likewise took fixtures and property to the amount of 207,000 dollars more, to be paid by quarterly instalments in three years; but a part of this property consisted of "tortas," and ores already in the Hacienda, which might, consequently, be regarded as silver.

The reforms contemplated by Captain Vetch met with considerable opposition amongst the native miners; and although the Company took possession of the mines in April 1826, in December the expences still exceeded the value of the silver raised. Eleven thousand dollars were coined weekly, but the charges were nearly twelve; the underground work alone averaging seven thousand dollars, and the costs of the Hacienda five. From eighty-five to

ninety-five "campos" (pairs) of barreteros (common miners) were in daily employ; and the number of "cargas" of ore reduced varied from fifteen hundred to two thousand in the week, which yielded, upon an average, thirty-five or thirty-six ounces of silver per "monton," of twenty quintals. Within a short time after my visit, Captain Vetch succeeded in carrying all his plans into execution, and in June and July, 1827, a weekly profit of 3,000 dollars was the result.

The Bolaños Company possesses a magnificent Hacienda, (La Saucedá,) built by La Borde, and purchased by the Fagoagas of his family, when the mine of San Acasio was abandoned. It contains seventy-four arrāstrēs (called in Zacatecas, tãhōnãs), with furnaces for smelting, a very perfect lavadero, (assemblage of washing vats,) and a patio (amalgamation court,) capable of containing twenty-four "tortas," of sixty "montones" each. The process is conducted nearly in the same manner as at Guajuato, with the exception of the "molienda" (the process of grinding), which is more rapid, and less fine; each "tahoana" in Zacatecas grinding ten arrobas of ore in sixteen hours, in lieu of six arrobas in twenty-four hours, which is the maximum at Guajuato.

There are seven "morteros" (stamps) at La Saucedá, it being calculated that one mortero will keep twelve arrastres in constant work. Salt and mágistrāl are abundant and cheap. The latter is brought

from the copper-mines at the Asientos de Ibarrá, two short days journey from Zăcătēcă.

The costs of reduction in the Hacienda amount to twelve ounces of silver per ton, which may be taken as equivalent to the monton of twenty quintals. In very favourable times, when agricultural produce is abundant and cheap, ores may be worked as low as twenty-four ounces per ton; but they ought to reach forty ounces to cover all contingent expences, and yield a reasonable profit.

The richest ores known in Zacatecas have never exceeded forty-five or fifty marcs per monton.

The Hacienda is situated beyond the ridge of mountains traversed by the veins of Veta Grande and Malanoche, upon the verge of an immense plain, very productive in maize, but presenting as arid and melancholy an appearance as if it were entirely destitute of vegetation. There are neither trees nor water to diversify the scene, which wears, throughout, the same reddish-brown colouring; while even the mountains in the back-ground have not the beauty of outline that distinguishes those of Mexico in general, but are monotonous and uninteresting.

The whole of the machinery is put in motion by mules; and the stabling for these animals forms a very considerable addition to the size of the establishment. In 1826, the Hacienda was under the superintendence of Mr. James, who resided at La Saucedá, as Dr. Coulter did at the Tiro General of Veta Grande. To both these gentlemen we were

indebted for the greatest kindness and attention during our stay at Zacatecas, where they, in conjunction with Mr. Schoolbred, gave us every assistance in our inquiries; and, by providing us beforehand with most excellent lodgings, enabled us to prosecute them with comfort.

One of the principal advantages of Zacatecas, as a mining district, consists in the superiority of the mint, (Casa de la Moneda,) to those of the surrounding States. Three hundred people are employed in it daily. The machinery is ponderous, and a great deal of labour is wasted in filing down and weighing each dollar separately; an operation that would be rendered unnecessary by the adoption of a series of cylinders calculated to reduce the bars at once to the necessary size and thickness, as in England. But notwithstanding these defects, sixty thousand dollars have been struck off at Zacatecas in twenty-four hours: and the total coinage, according to the Governor's report to the Legislature (of January 1827), has amounted, from the 1st of January 1821 to the 31st of May 1826, to 2,067,269 marcs, five ounces and seven-eighths, or 17,571,789 dollars and four reals.

The profits of the establishment, during this time, were 126,941 dollars two reals and six grains; yet the miners and rescatadores received dollars for their bars in the short space of four days. As the funds of the mint augment, the facilities for this operation will increase likewise; while mining enterprises, which always receive an impulse in proportion to

the means of converting produce, at a fair and fixed price, into the ordinary circulating medium of the country, will undoubtedly prosper in the same ratio as the mint itself.

The whole of the machinery now in use is of brass, and made in the town. There are three flies for stamping, each worked by eight men, who are paid according to the number of dollars struck off, at the rate of two reals each, the talega, or thousand. They often earn sixteen or twenty reals per diem, so that the coinage by each fly, in the working hours, must be from eight to ten thousand dollars. The dies are cut by an Italian, and the coinage is exceedingly good, though disfigured by the cap of liberty; which, however discredited in Europe, is still supposed in America to be emblematic of all that man holds most dear. Besides dollars, one and two Real pieces are coined, which are much wanted in other States.

The ores of Zacatecas have no Ley de Oro, and the mint no Casa del Apartado, in consequence of which the rich ores of Guarisamey were sent through Zacatecas to the Capital, where alone the separation of the gold from the silver could be effected. This has led, (as stated in the preceding Section,) to the establishment of an Apartado in Durango, where, probably, the gold ores from the whole of the North will, in time, be concentrated.

The State of Zacatecas contains a registered population of 272,901 souls. Of these, 22,000 are assem-

bled in the capital, and 6,000 in the village of Veta Grande, in its immediate vicinity. The rest are distributed throughout the eleven "partidos," or districts, into which the territory is divided; viz. Zacatecas, Aguas Calientes, Sombrerete, Tlältē-āngö, Villanueva, Frēsñillö, Jērēz, Măzăpīl, Nievēs, Pinos, and Jüchīlipă.

Many of the towns, as Sombrerete, Fresnillo, Jerez, Pinos, and Nöchīstlān, have a population varying from fourteen to eighteen thousand souls; and in the highly cultivated district of Aguas Calientes alone, (South of the Capital,) 35,000 inhabitants are registered. But North and East of Zacatecas, the country is divided into vast breeding estates, like Sierra Hermosa, the Mezquite, and others, which we visited on the road to Sombrerete. There, the population is thinly scattered over an immense tract of country, and a few spots of cultivation are lost amidst the deserts that surround them. Yet the total agricultural produce of the State is very considerable. By the statistical tables annexed to the Report of 1827, it appears that 18,084 fanegas of maize are sown annually, and 670,956 reaped; 19,933 cargass of wheat are raised from 1,396 cargass sown; 24,346 fanegas of frijol (haricots,) from 2,071 fanegas sown. The crop of Chile is usually about twelve thousand arrobass. By this statement, which is compiled from reports transmitted by the different Ayuntamientos, it appears that the increase of maize is as thirty-seven to one,

and that of wheat only fourteen and a fraction; a ratio of increase very much below the average of the corn and maize lands in the more Southern Provinces.

Zacatecas contains one hundred and twenty Haciendas de campo, with six hundred and sixteen Ranchos, most of which consist, however, of three or four wretched hovels. There are eleven convents of friars in the State, containing in all one hundred and ninety-eight individuals; four nunneries, with thirty-one professed nuns; and four hospitals. Manufactures there are none, except in the Capital, where there are a few cotton-spinners, and at Aguas Calientes: mining and agriculture furnish occupation for all the rest of the population. A little Maguey brandy, (Vino Mescal,) is distilled at Pinos; but every thing else requisite for the consumption of the inhabitants is imported from other States.

The Constitution of Zacatecas was completed as early as January 1825. The Legislature consists of one chamber. The religious Article is as uncompromising as might be expected from the influence exercised in the Capital, until very recently, by the friars, mostly old Spaniards; who, in conjunction with a numerous body of Spanish residents, have certainly contrived to preserve the lower orders in a very primitive state of ignorance and brutality. The Government has done little as yet towards correcting this pernicious influence, and its indifference is the

more to be blamed, as, from the very flourishing state of the revenue, its interference would have been attended with double effect. The expenditure of the State, from the 1st of May 1825, to the 30th of November 1826, (a period of nineteen months,) amounted to 340,469 dollars, and the receipts to 414,483 dollars, leaving a surplus of 74,014 dollars in favour of the State.

Amongst the most productive branches of the revenue, the Governor points out that of tobacco, which had yielded a clear profit to the State of 75,437 dollars; and he conceives that this sum may be doubled, by a system of administration sufficiently vigorous to enforce the observance of the monopoly with as much strictness as before the Revolution. The debt of the State to the Federation for tobacco amounted, on the 30th of November, 1826, to 217,176 dollars; but the "existencias," (tobacco on hand, wrought and unwrought,) for the ensuing year, were calculated at 358,598 dollars; and there would consequently be a considerable balance in favour of the State, when the realization of its own stock in trade, (for to this the tobacco revenue, organised as it now is, amounts,) should enable it to meet its engagements with the Federation. Time is necessary for the regulation of this complicated machinery in the first instance, but when the movements of all the parts are combined, the result of the partial experiments tried, hitherto, tends very much

to confirm the opinion expressed in the Fourth Section of the Third Book, respecting its probable future productiveness.

I have little to add to the details given above, except the fact that Zacatecas is the only part of Mexico, in which I am aware that, at the end of 1826, a bad feeling towards foreigners in general prevailed. We had violent prejudices to surmount in many parts of the Federation upon our first admission into the country; but those prejudices gradually disappeared, and in most places were replaced by feelings of a very different nature. In Zacatecas alone they seemed to retain all their original violence.

This circumstance may be attributed partly to the influence of the regular clergy, and partly to the different circumstances under which our mining operations in the State commenced. The working classes had never felt in Zacatecas that distress, from which they were relieved in other districts by the introduction of foreign capitals. The mines of Veta Grande continued in activity during the whole Revolution, and several other mines belonging to old Spaniards were in bonanza up to a very late period. The Companies, therefore, did little more than occupy the places of the former proprietors. Many of the changes introduced by them consisted in reforms, very necessary, but very unpalatable; and although they brought a considerable capital into circulation, the want of it had not been suffi-

ciently felt before to make the people duly sensible of the importance of this service.

They are, therefore, not unnaturally regarded as interlopers, come merely to share in advantages which the natives considered formerly as their patrimony; and as this feeling has been fomented by those who might have given it a better direction, it has more than once been upon the point of leading to very serious results. I had been prepared for this state of things by the reports of Captain Vetch and Captain Lyon, who, at a time when the safety of the individuals employed by the Bolaños Company was thought to be endangered, had very properly solicited, through me, the protection of the President. But my communications with the Governor of the State, upon my arrival in Zacatecas, inspired me with a belief that these angry feelings had subsided, until I was undeceived by the treatment which my own party experienced. Mrs. Ward usually employed her time in drawing while I was visiting the mines; and, though always surrounded by a crowd, she never experienced the slightest incivility upon such occasions, except at Veta Grande. In general, people were much delighted with the novelty of the performance; and I have seen Indians standing round her for an hour together, watching every motion of the pencil, and holding in turn an umbrella to shelter her from the sun. At Guajuato, where fifty or sixty people were collected, while she was taking a view of the town from the Va-