

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

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 Sauceda, 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 rescataores 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 *tálega*, 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, Tlältēngō, Villanueva, Frēsñillō, Jērēz, Mázāpīl, Nīēvēs, Pinos, and Jūchīlīpā.

Many of the towns, as Sombrerete, Fresnillo, Jerez, Pinos, and Nōchīstlān, 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 arrobas. 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-

lenciana mine, we were much amused at the astonishment expressed on seeing her inquire the names of the principal points, and write them down upon the margin of her sketch. "Pinta, y escribe tambien!" (she draws, and writes too!) was the general exclamation; and such an accumulation of talents in the same individual excited universal respect. But at Veta Grande she was surrounded by a sullen and gloomy mob, who purposely put themselves in her way, so as to prevent her from seeing the mines; and were only compelled to give her a little room, by the exertions of Don Rafael Beraza, who mounted his horse, and rode in amongst them until by degrees they were fairly driven back.

They did not quit the scene of action, however, without honouring us repeatedly with the appellation of Judios, (Jews); and two days afterwards, when we took our leave of the town altogether, and commenced our journey towards Guadalajara, so violent a spirit of hostility towards us was displayed, that we were for some moments apprehensive that we must have had recourse to fire-arms in self-defence. There was a great crowd in the Plaza, before the windows, where the market was held; and this increased so rapidly, as the preparations for our departure proceeded, that at ten o'clock, when we mounted our horses, there must have been at least six or seven hundred idlers assembled. By these we were received with a volley of hisses and

abuse; nor do I believe that the matter would have rested there, had we not drawn our pistols, and assured the leaders of the mob that the very first stone thrown should be instantly followed by a volley. They gave us credit for some sincerity in our intentions, and confined themselves to a wordy war, which continued until we had quitted the Plaza, beyond which no one attempted to follow, or to incommode us. We did not, however, feel quite at our ease until we had got clear both of the town, and the "Palmares," (woods of dwarf palms extending for some miles around, and noted as the scene of many a robbery,) where we almost expected an attack, and were fully prepared to meet it.

In justice to the inhabitants of Zacatecas, I must add, that the inhospitable treatment of which we had so much cause to complain, is confined exclusively to the Capital, and, even there, does not extend beyond the working-classes; an ignorant and brutal race, sunk in low debauchery, and guilty of excesses amongst themselves, which the Government has too little energy to repress. The agricultural population is kind and hospitable; and from the landed proprietors, the authorities, and the more respectable citizens, we received every proof of the most friendly disposition.

We quitted Zacatecas on the 26th of December, and slept at San Jacinto, (twelve leagues from the town;) a fine Hacienda belonging to the Marquesa

de Ruhl, where the cultivation for which the district of Aguas Calientes is celebrated, may be said to commence. On the 27th, we reached that town, about three in the afternoon. The road from San Jacinto was quite an interesting scene, for Ranchos multiplied around us at every step. We saw on all sides immense crops of maize, and met huge ox-wains, laden some with Chile, others with Zacate, and others again with the ears of Indian corn: horses, cows, and oxen abounded in "potreros," regularly enclosed with walls, and deep ditches, and every thing seemed to denote a thick and flourishing population.

In the midst of plenty, however, we ourselves were nearly starved; for having imprudently lost sight of the coach on leaving the Hacienda, and taken a different route, we found ourselves separated from our provisions, and without any prospect of rejoining them until we reached Aguas Calientes, where the two roads again met. Under these circumstances, having set out, as usual, without breakfasting, we were most happy, about one o'clock, to meet with a man carrying a large dish of frijoles and tortillas to some shepherds in a neighbouring field. Upon these we laid violent hands; a gourd was filled with water at a spring not very far off; a tree of unusual size afforded us protection from the sun; and notwithstanding the simplicity of our fare, we agreed, when we had completely cleared our dish of haricots and chile, into which we dipped alternately with Monte-

zuma's spoons,* that we had seldom made a more delicious meal.

We found a very tolerable inn at Aguas Calientes, but were not allowed to remain in it long, the Marquis of Guädälüpë, whom we had known in the Capital, having insisted upon our immediate removal to his house, where we passed the whole of the following day.

The conduct of this gentleman may serve as an example to all the great proprietors of New Spain. He possesses fourteen Haciendas, which, in 1813, when they first came into his possession, were in such a state of dilapidation, that the whole income derived from them did not exceed three thousand dollars per annum.

He immediately gave up the capital, and devoted ten years to the personal superintendence of his estates, which have become the most valuable in the whole surrounding country. The reservoirs and farming buildings have been repaired, and the live stock, destroyed during the first years of the Revolution, replaced; so that the Marquis already derives from his possession an income of 75,000 dollars per annum (15,000*l.*), and looks forward to a considerable increase. His stock of horses and brood mares at Cienega de Mata, and other breeding estates, amounts to eighteen thousand; and in 1826

* "Las cucharas de Montezuma," is a name frequently given to tortillas, which, from their flexibility, are constantly used as a substitute for a spoon by the lower orders.

he sold to the Bolaños Company alone fifteen thousand fanegas of maize. He is likewise working the mines of Asientos de Ibarra, of which he appears to entertain a very high opinion. The vein is of immense width (nearly twenty varas), and the ores extremely abundant, though poor. This renders it necessary to build reduction-works upon a very large scale, and as the Marquis wishes the mines to defray a part, at least, of the expences, the progress of the establishment is slow.

The town of Aguas Calientes is prettily built and situated; some of the houses are very handsome, particularly that of the Gūadālūpě family, which occupies half one side of the great Plaza. In the vicinity of the town are the warm mineral springs from which it takes its name. The water is beautifully clear, and the temperature delightful. Mineral springs abound in the whole district. Some few are used for irrigation; but the generality are found inapplicable to this, or any other farming purpose, from the quantity of alum contained in the water, which, after a time, leaves a thin white coating upon the soil, and renders it totally barren. It requires some years in these cases to bring the land round again.

Aguas Calientes produces nearly one-fourth of the maize, and one-third of the frijol and Chile grown in the State of Zacatecas; the average annual crop of the first being 140,952 fanegas; of the second, 7,293 fanegas; and of the third (which is sold by

the weight), 4,291 arrobas. The wheat raised averages 4,749 cargas (of 300 lbs.), but this is much exceeded by the annual produce of Fresnillo, where 7,230 cargas are the registered return.

The town likewise contains the largest manufactory of coarse cloth that I met with in Mexico. It is called the Obrage de Pimēntēl, and gives employment to 350 men and women within the walls of the establishment. Five thousand arrobas of wool are consumed in it annually; and the cheapness of this essential article (which seldom rises above twelve reals the arroba, and may often be purchased as low as seven), enables the proprietor, whose principal business consists in a Government contract, to deliver his cloth in Queretaro at the same price as the manufacturers of that town, who can seldom obtain wool under fourteen reals the arroba.

The colours principally used are red, green, yellow, and blue. For the first, cochineal is employed as a dye, at the rate of about $4\frac{1}{2}$ lbs. for a piece of cloth forty varas in length, and weighing 60 lbs.; such being the quality and dimensions fixed by the terms of the contract. Indigo produces an excellent blue. For the yellow, two dyes are employed; one, extracted from the seed of a parasitic plant, found in abundance upon the Peruvian pepper-trees in the Baxio, and called Săcătłăscāl; the other, Pālō Mō-rălētē, a *Tierra Caliente* tree, brought principally from Amătłān de las Cañas. The Săcătłăscāl is much the strongest dye of the two, only $6\frac{1}{4}$ lbs.

of it being required for each piece of cloth, (the pound is worth two and a-half reals,) while of Moralete, an arroba and a quarter must be employed, at seven reals per arroba, in addition to which there is the expence of pounding it. Mōrālētē is, nevertheless, more generally used, in consequence of the difficulty of ensuring a regular supply of Sacatlas-cal. Either of the two with indigo, dissolved in sulphuric acid, makes a very good green.

The prices are (per vara) scarlet, twenty-four reals, green eighteen, blue sixteen, and yellow fifteen. The dearness of cochineal, which is brought from Oaxaca, and costs there three dollars the pound, and the scarcity of indigo, are the causes of the difference in the price.

At Aguas Calientes we first perceived that difference in the climate, which becomes so striking as you approach the Western Coast. The harshness of the North wind disappears, and is replaced by a soft and balmy feel in the air, unknown even in summer in the Capital, where the evenings and mornings are generally chilly. Nothing could exceed the kindness, and unaffected politeness, with which our hosts did the honours of their house. The Marquesa, a sister of Madame de Regla's, with all the beauty, and all the cleverness, for which the family, on the mother's side, is celebrated, was earnest in her solicitations to prolong our stay, but we were too much pressed to return to Mexico to allow ourselves to be tempted, and on the 29th of

December we quitted Aguas Calientes, and took the direct road to Guadalajara, by La Villita (ten leagues distant), where we slept.

Humboldt has committed an error in his map (which has been since copied by every one else), in comprehending Aguas Calientes in the Province of Guadalajara, and not in that of Zacatecas, to which it belongs. He likewise omits almost all the towns on the road to Guadalajara, and the rivers are very erroneously laid down; that over which the Bridge of Calderon is thrown being entirely left out, and the Rio Grande brought close to Guadalajara, which it does not approach within six leagues. The boundary line between the two States lies, in reality, between Aguas Calientes and La Villita. The first part of the road is level; the last two leagues hilly; the town itself is situated in a barranca, as are most of those on the way to Guadalajara; I suppose, for the convenience of water. We found the inn tolerable, and, in addition to the ordinary supply of provisions, we procured a quantity of iced milk, seasoned with vanilla and sugar, which after a hot ride was very agreeable.

Dec. 30.—San Juan de los Lagos, eight leagues.

This town is famous for its annual fair, commencing on the 8th of December, and for a church dedicated to the Virgin, which would be regarded in any part of the world as a fine building. In its present situation, the impression is perhaps increased by the contrast with the mud-houses and wild scenery